

Vol. 28

DUBUS



C 11159
4. Quartal

4/1999

EA3BB on MS

EA3BB MS expedition to IN62, 72, 73, 82, 83
Perseids 1999, Ops: EA3BB, Pau, I5WBE, Enrico, I4YNO, Alex

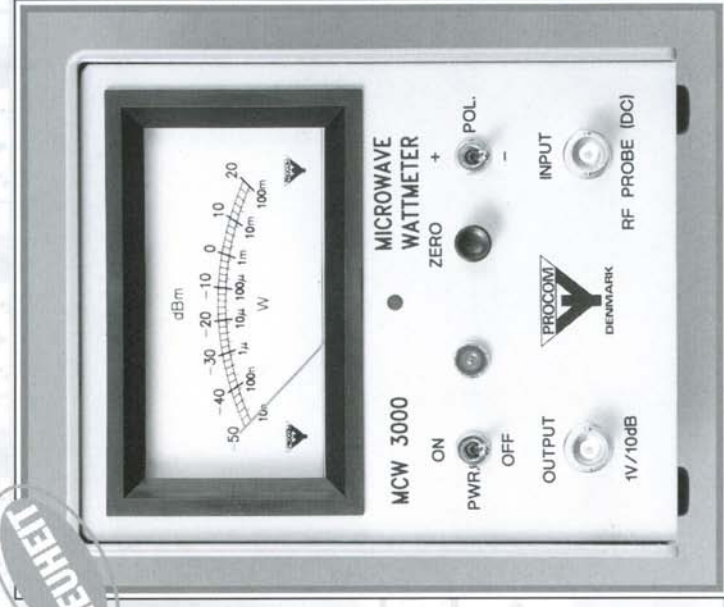


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DUBUS

die zweisprachige Zeitschrift für den Schmalband-DX-Amateur auf UKW von 50MHz bis 241GHz. Geschrieben von aktiven UKW-Amateuren für aktive UKW-Amateure.

Das DUBUS-Magazin erscheint vierteljährlich im März, Juni, September und Dezember. Der Abonnementspreis beträgt in der BRD DM 35,-. Durch Überweisung des Abonnementspreises auf unser Postbank-Konto werden Sie für ein Jahr Bezieher der DUBUS.

The DUBUS-Magazin is published quarterly in March, June, September and December. For subscription please contact your national representative or transfer the appropriate annual rate, which can be seen below, by international postal money order to DUBUS Postbank account.

Herausgeber/Publisher:

DUBUS Verlag GbR, Grützmlenweg 23, D-22339 Hamburg, FRG.

Chefredakteur/Editor-in-Chief:

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DUBUS

Entirely devoted to DX-ing on VHF/UHF and Microwaves (50MHz...241GHz). Fully bilingual and written by active radio amateurs for active radio amateurs.

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Abo-Verwaltung/Circulation:

Norbert Götsche, DL8LAQ, Tulpenweg 3, D-24568 Kaltenkirchen, Tel.: 04191/959913

Abo-Konto/Subscr.-Account:

Postbank Hamburg, Kto.-Nr. 266292202, BLZ 20010020

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Technical Reports

Editor: Rainer Bertelsmeier, DJ9BV

More 24 GHz Modules

Luis Cupido, CT1DMK

Abstract: Using the same strategy as in the first article (DUBUS 3/98) I present here two more 24GHz modules. The availability of beam lead diodes with good performance at 24GHz and it's difficult manipulation, along with the variable characteristics of the conventional encapsulated diodes, lead to the design of other forms of converters.

In the present article I present a single diode mixer and an PHEMT mixer. Both modules can use the common design for the mechanics as described earlier.

Kurzfassung: Wie schon in DUBUS 3/98 vorgestellt, werden 24GHz Module beschrieben, die einmal einen Einzel-Dioden Mischer beschreiben und zum zweiten einen Empfangsmischer mit einem PHEMT zeigen.

Introduction

Balanced mixers using two diodes /1,2/ will certainly require a little bit more power than a single device mixer. Also good balancing is desirable for good operation and therefore diodes are required to be as good matched as possible. The performance of the rat-race mixers at 24GHz, using SMD packaged devices as the BAT15 may be not as good as we would like. Conversion losses of 8 to 10

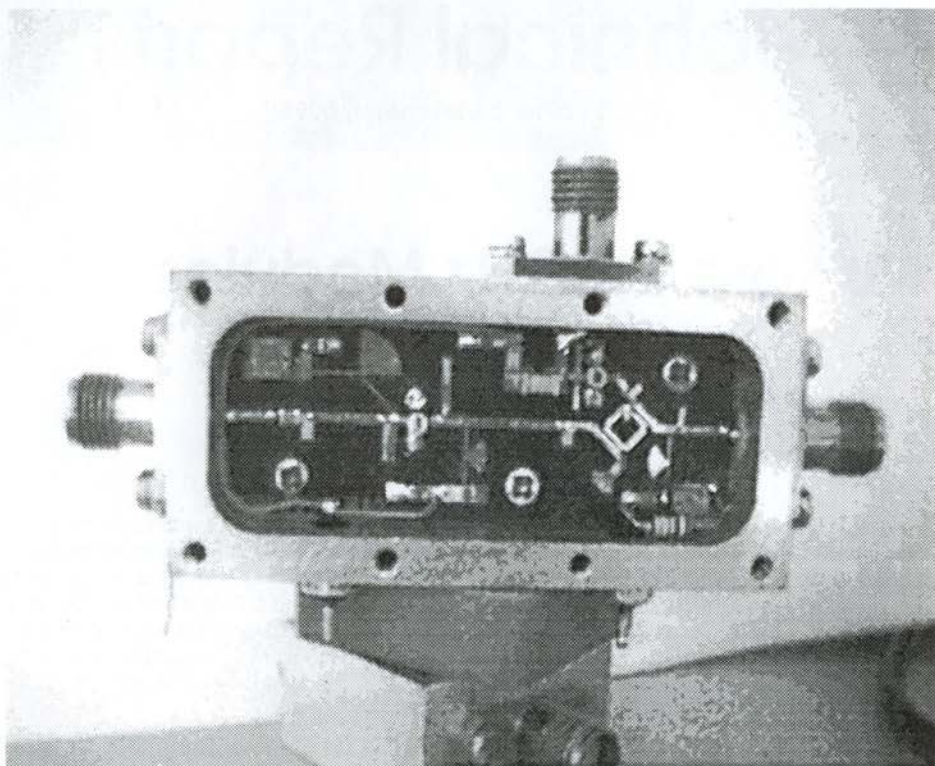
dB can be obtained, but without much tuning effort figures like 15dB are most probable. These difficulties let me try a single diode mixer design and a PHEMT mixer design, to take advantage of recent devices. Both modules share the same configuration the mixing element changes from one design to the other.

The PHEMT mixer resulted in a RX only mixer but with largely improved specifications comparing to any other types of mixers I've tried so far.

Single diode mixer

The local oscillator doubler section remains unchanged from the previous design /2/, and it is expected to deliver as much as 10dBm at 24GHz to the input of the mixer. The mixer combines the RF and LO signals in a ring coupler that provides also the RF/LO isolation. The ring coupler design can be found in some detail in the literature /3,4/ and will not be described here. Several diodes from SIEMENS and NEC were tested and the results were in general 2 dB better than the balanced design. One of the best encapsulated devices in this configuration was the BAT15 in plastic package. While the best results, 7 dB conver-

24GHz Mixer



sion loss, were obtained from a single BAT30 in beam lead package.

Tuning the mixer for best performance is not too difficult, however the ring coupler has a sharp tuning point that is obtained by placing a small stub in the lower right corner of the ring. This adjust must be done before any other optimisation otherwise the diode would not receive enough LO power.

PHEMT RX Mixer

The design using an PHEMT device is in all respects identical to the one using a single diode but uses a PHEMT transistor as the mixing element. Additionally this circuit has to include the transistor bias elements. Several transistors were tested, and most of them performed excellent. However the lowest

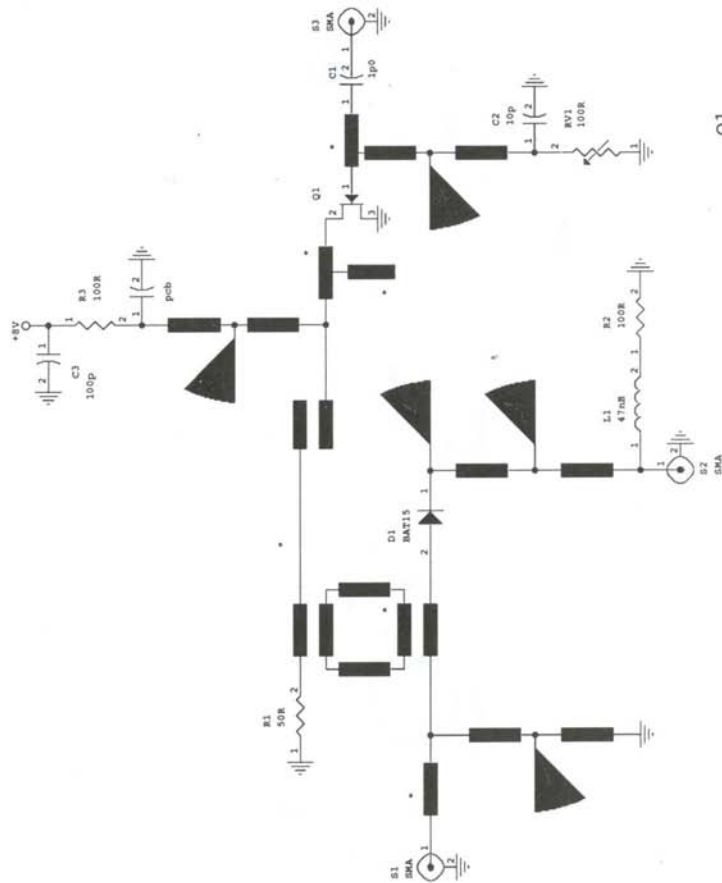
noise figure devices were not the best for this application, as my test showed. The best device tested was the NE42484 in which I could obtain the impressive figures of 3dB conversion gain and 4dB noise figure (as far as I could measure).

Tuning is some how similar to the single diode mixer design. There is also to adjust the gate bias that is somehow critical to set. As the device is being used as a mixer, drain voltages and currents don't match the recommended values for the linear operation so experimenting is necessary to find the right values for gate voltage and for the drain resistor.

Bild/Figure 1: Circuit Diagram 24GHz Mixer

24GHz single diode Mixer.

CT1DMK

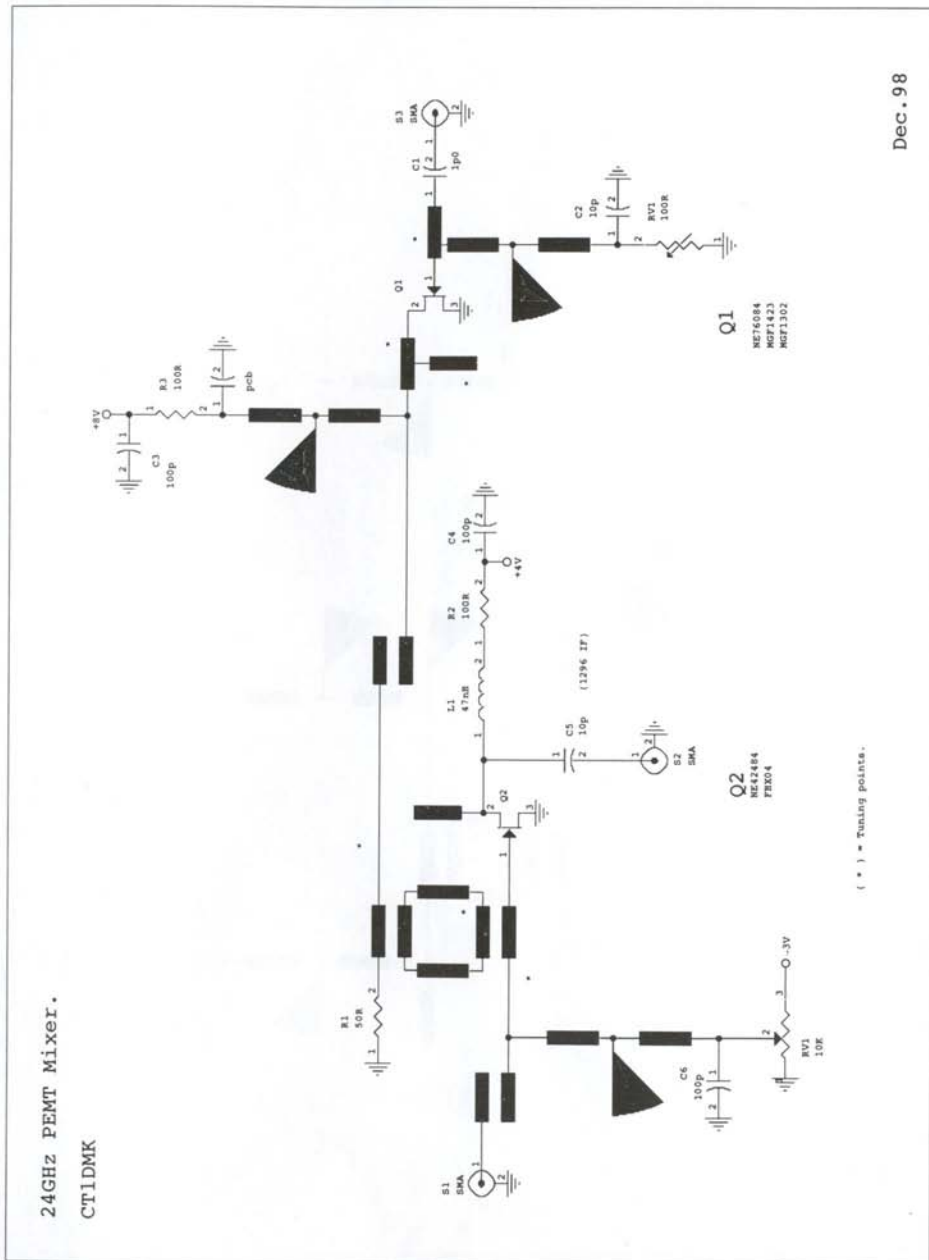


Q1
NE76084
MGF1423
MGF1302

(*) = Tuning points.

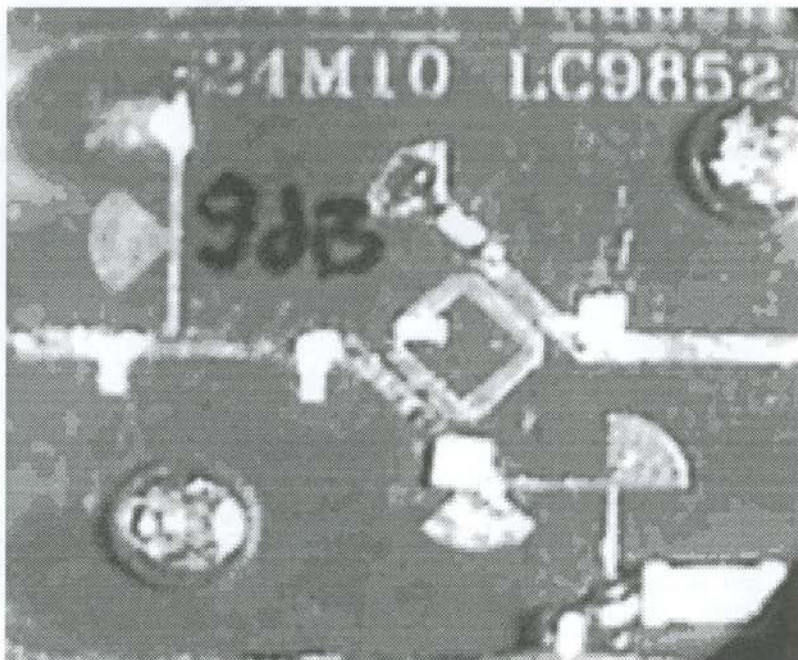
Dec. 98

Bild/Figure 2: Circuit Diagram 24GHz HEMT Mixer



Dec. 98

Bild/Figure 3: 24GHz Mixer Tuning Details



Einführung

Symmetrische Mischer mit zwei Dioden, wie sie in in /1,2/ beschrieben wurden, brauchen, um eine brauchbare Leistung zu erzielen, folgende Voraussetzungen:

- Leistung für den LO
- Gute Symmetrie der Dioden
- Gute Symmetrie der Schaltung (Koppler!)

Benutzt man z.B. normale Dioden wie die BAT15 kann man leicht bei 15dB Mischverlust landen, wenn man nicht sorgfältig abgleicht.

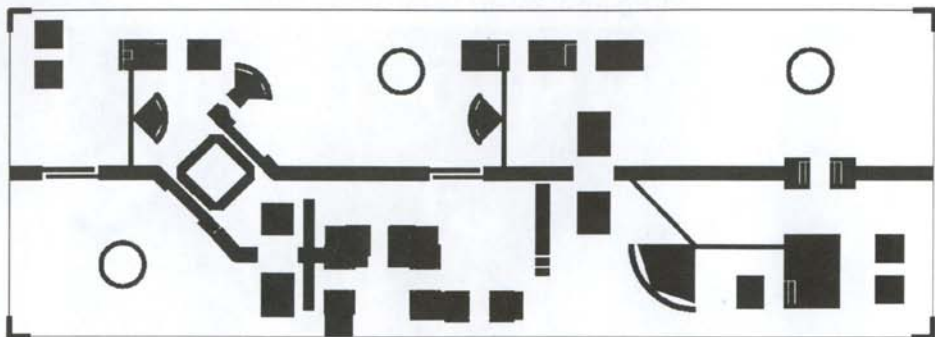
Diese Schwierigkeiten motivierten mich, Mischer mit einer Diode oder einem PHEMT-Transistor aufzubauen. beide Module sind mechanisch gleich und haben nur das Mischelement verschieden. Der PHEMT-Mischer ist natürlich unidirektional und kann folglich nur als RX oder als TX-Mischer verwendet werden. Der Dioden-Mischer dagegen ist bidirektional.

Dioden-Mischer

Der LO ist wie in /2/ aufgebaut. Die LO-Leistung beträgt ca. 10dBm (10mW). Die drei Tore (HF, LO, ZF) werden durch einen Ringhybrid getrennt, der in /3,4/ ausführlich beschrieben wird.

Es wurden einige Dioden der Firmen Siemens und NEC getestet. Die beste Diode im Gehäuse war die BAT15 von Siemens. Das beste Resultat zeigt eine BAT30 im 'Beam-Lead' Gehäuse. Damit beträgt der Mischverlust ca. 7dB.

Man kann den Mischer leicht für optimalen Konversionswirkungsgrad abstimmen. Dazu ist zuerst der Ringhybrid mit einem kleinen Stub auf der unteren rechten Ecke abzustimmen (Siehe Photo). Dann kann man auch an anderen Stellen Optimierungsversuche unternehmen.



Bild/Figure 4: 24GHz PHEMT Mixer Layout

PHEMT Mischer

An Stelle der Diode wird bei ansonsten gleicher Schaltung nur ein PHEMT mit seinen zusätzlichen Bauelementen für die Gleichspannungsversorgung eingesetzt. Die besten Resultate wurden mit einem NE42484 erzielt. Dieser HEMT erreicht eine Rauschzahl von ca. 4dB und eine Verstärkung von 3dB.

Die Abstimmung wird wie bei dem Diodenmischer vorgenommen. Die Einstellung der optimalen Drainspannung und der Gatevorspannung ist allerdings etwas kritisch.

Construction

All PCBs are made of Rogers RT5780 10mils. After etched 1.5mm holes are opened at the grounding positions. Then solder them to a 0.8mm thick cooper sheet cut to fit inside the milled box. Some filing may be necessary for them to fit correctly. After some cleaning, to remove the solder flux they are ready to be populated. The modules can be placed in and changed as many times as necessary. Assembly of all components should be made with the modules out of the aluminum box. The ground connection of the FET's sources should be done at the exact position where the ceramic case ends (to make the connection as short as possible). Apply all general rules for GaAs FETs and SMD described in so many other articles.

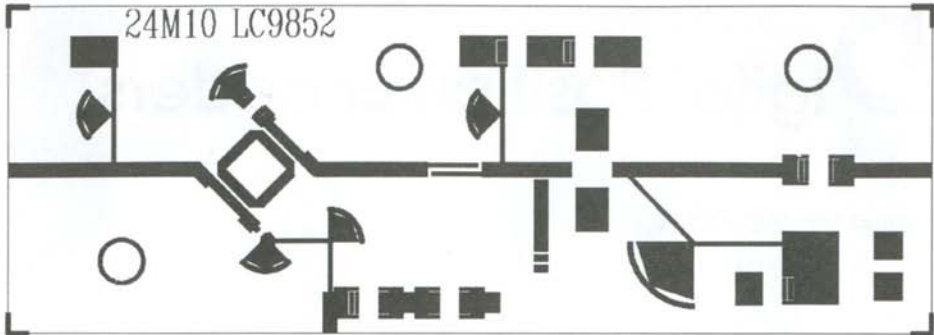
Konstruktion

Alle Leiterplatten sind aus ROGERS RT5870 Material mit einer Dicke von 0,254mm (10mil) gefertigt. Die Durchkontaktierungen werden durch 1,5mm Löcher gebildet. Unter die Leiterplatte wird eine 0,8mm dicke Kupferplatte gelötet.

Das Bestücken der Bauelemente findet im ausgebauten Zustand statt. Die FET's werden direkt am Keramikgehäuse geerdet.

Concluding remarks

The two converters presented in this article make possible to reduce the amount of gain necessary on the RX chain, namely on the LNA. Also, the PHEMT design, can reduce significantly the impact of mixer noise figure in the overall system noise. Single diode mixers as good as 7dB conversion loss are now easy to construct and PHEMT mixer can have the impressive 3dB conversion gain and 4dB NF that even enable it to be used as the first element in the simple transverter setups, or RX only stations. Hardcopies of the PCB's at 4:1 scale and diagrams can be found at my web page: <http://escrba.cfn.ist.utl.pt/cupido> Thanks to all that helped with info and components.



Bild/Figure 5: 24GHz Diode Mixer Layout

Schlußbemerkung

Die zwei hier beschriebenen Mischer kann man für neue Schaltungen auf 24GHz benutzen. Auf Grund ihrer niedrigen Rauschzahl und der Verstärkung kann man z.B. mindestens eine Vorstufe einsparen. Selbst Transverter ohne Vorstufe sind nun denkbar.

Auf meiner Web-Seite <http://escriba.cfn.ist.utl.pt/cupido> kann man Layouts im Maßstab 4:1 herunterladen.

References/Literatur

- /1/ Erich Zimmermann, HB9MIN, " 24GHz RatRace mixer", DUBUS 2/93
- /2/ Luis Cupido, CT1DMK, "24GHz Modules", DUBUS 4/98
- /3/ Artech House, "Microstrip circuit design"
- /4/ E.H.Fooks, "Microwave engineering using microstrip circuits", Prentice Hall

Digital Position Encoders

Hannes Fasching, OE5JFL

According to my experience simple analog rotation indication systems using potentiometers are not exact enough for narrow beam-width antennas (EME, SHF).

Instead it turned out that the use of digital position encoders is a must to use high gain parabolic dishes on EME.

There are two different principles of digital encoders: **Incremental** and **Absolute**.

1. Incremental Encoder

The current rotation angle is stored by a counter, which is incremented or decremented by a sensing device, which senses the sense as well as the magnitude of the rotation by delivering a pulse sequence. Then the counter is able to track the real rotational position of the antenna.

The information for the counter is provided by a 2-phased pulse signal, with the phases separated by 90deg from each other. So the direction (CLW/CCW) of rotation can be detected.

The advantage is, that independent of the resolution (number of pulses per rotation), there are only two tracks necessary on the disk. But there is a big disadvantage: whenever the system forgets a pulse (too fast movement, not perfect tracks....), or the power supply is switched off, the position indication is wrong from that moment. In this case a reference mark must be passed to reset the counter.

2. Absolute Encoder

In an absolute encoder each single rotation angle is assigned to an unique bit combination, i.e. a binary code, which can be read by a computer. Therefore the correct position is indicated immediately after switching on the power supply.

On the other hand, you now need 10 tracks to achieve a resolution of 0.5 degrees.

($\lg(\frac{360}{0.5}) = 9.5$). For 0.1deg resolution 12bit

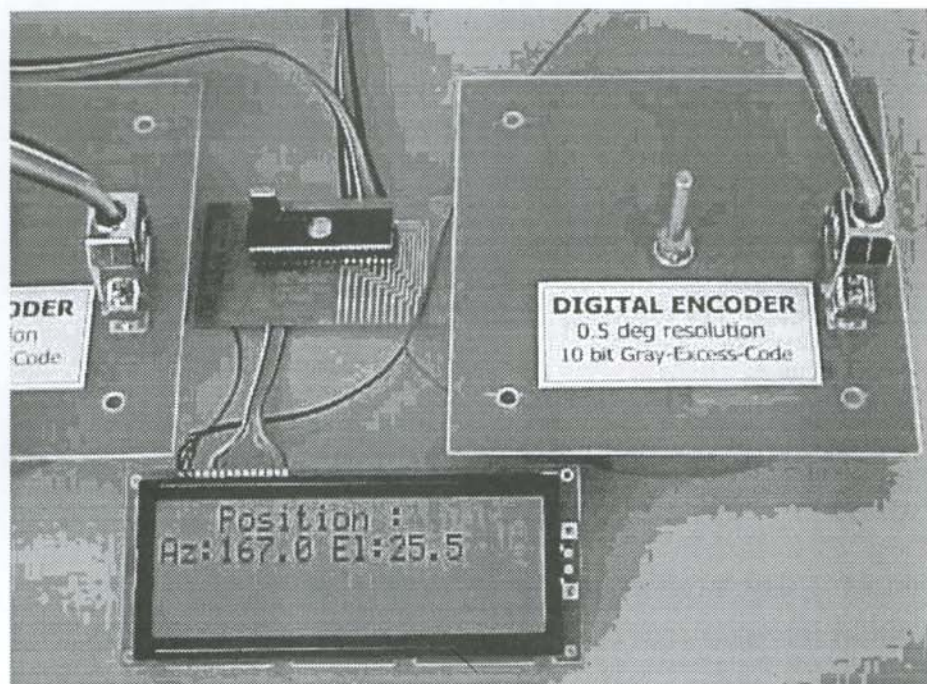
(tracks) are necessary ($\lg(\frac{360}{0.1}) = 11.8$), with 900 bars on the track for the LSB.

Straight Binary code is unsuitable for the encoder, because several bits can change at once when entering a new interval. (See Appendix).

Using Gray-Code, only a single bit changes at all transitions. Gray-Excess-Code is similar, it is used for encoders with resolutions different from 1024, 2048, 4096 intervals. Conversion from Gray-(Excess-)Code to other codes, suitable for indication and/or controlling (Binary, BCD, ASCII...), is easily done with a program run on a microcontroller.

Single turn encoders with a resolution of 12Bit will do the job for all radio amateur purposes, but professional encoders are quite expensive. Some of them have parallel output, some special output format, as for example the Serial Synchronous Interface (SSI). Incremental encoders are cheaper, but often they use exotic pulse numbers.

Digital Encoder



For that case I have developed a pulse-converter. It can reduce the number of pulses per rotation to a number corresponding with $360^\circ/n$.

Personally I prefer absolute encoders, and I successfully built 12bit encoders with 0.1deg resolution myself. But from my experience you need special mechanical skills and it is rather critical to adjust. For antennas with a mainlobe not narrower than 2deg (8m dish used on 23cm), an encoder with 0.5deg resolution is good enough. So I developed an easy to build and no tune design, which should be within everybody's mechanical possibilities.

Homemade 0.5deg resolution absolute position encoder

The ground plane was made 150mm in diameter. The Gray-Code disk (120mm diameter) is manufactured as follows: First step is

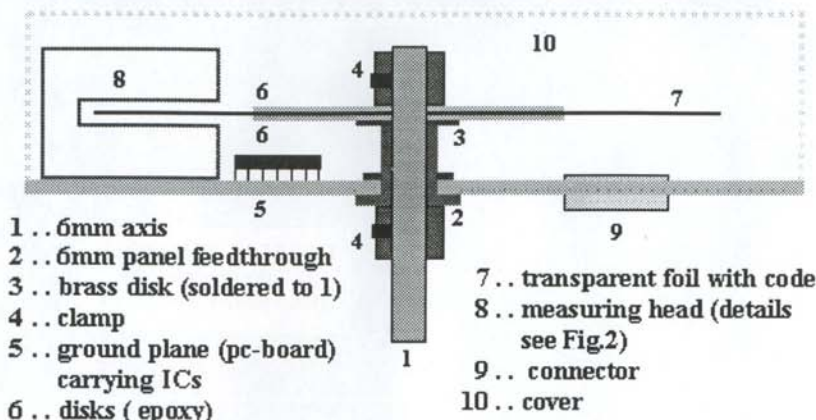
printing the AutoCAD File ABS05.DWG (available at my homepage) onto a transparent foil by a Laserprinter. The printout consists of two parts, mirrored to each other. Then cut out the two disks and glue them together, so that the sensitive surface (toner) will be inside and cannot be scratched.

Figure 2:

The measuring head is made of double-sided copperclad epoxy and two pieces of experimental board, with the holes drilled up to 1.5mm, so that the Infrared-LEDs and photo transistors can slip into the holes with their spherical head and are positioned in line. As the distance between the holes is $1/10''$, each track on the Gray-Code disk has to be 2.54mm broad. So the 10 tracks fill 25.4mm.

The circuit shown in Figure3 provides the digital output. Transparent part of the foil disk means 0V at the connector pin, black part

Fig.1: mechanical details of 0.5deg absolute encoder



creates 5V. The output code is Gray-Excess. If another code is needed, it can be converted to Binary, BCD, serial ASCII by a 87C51 microcontroller. The ground plane of the encoder is used as a PC board carrying the 10k resistors and the CD4069 ICs. The 68R resistors were soldered to the measuring head. The supply current for the encoder is 30mA.

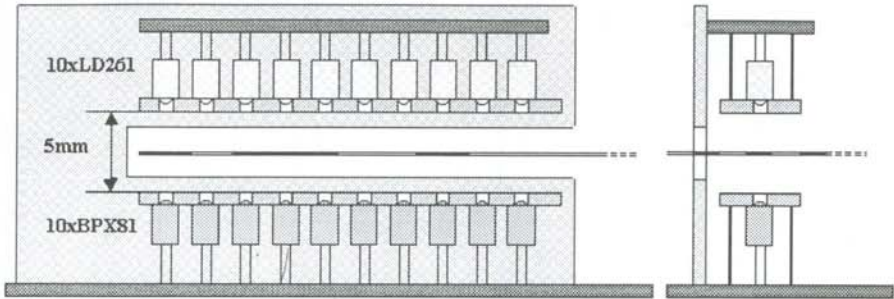
On the first photo you can see the partly assembled encoder: Gray-Code-Disk on foil, axis with disks for clamping the foil, ground plane with measuring head and other components. If only 1deg resolution is needed, normally no adjustment is necessary. In the case you want 0.5deg, it might be that you have to adjust the position of the measuring head slightly by bending and resoldering. Also careful centring of the Gray-Code-Disk is recommended.

The second photo shows an example for a position indication system. It is designed as follows: The output of the encoders for azimuth and elevation is connected to ports of a 87C51 microcontroller, and there converted from Gray-Excess-Code to Binary and then to BCD code. For indication you can directly

connect a LCD-display to another port of the 87C51.

Of course different solutions are possible as well. For example serial output for processing data with a PC, or as shown on my web page: <http://www.qsl.net/oe5jfl> (EME antenna controller)

Fig.2: construction details of the measuring head. 10 x LD261 & BPX81 are sampling the Graycode disk



Digitale Winkelgeber

Nach meinen Erfahrungen sind analoge Winkelgeber in Form von Potentiometern für die Positionsanzeige von Antennen mit kleinem Öffnungswinkel nicht genau genug (EME, SHF).

Stattdessen verwende ich digitale Winkel-Encoder, die sich für Parabolspiegel mit hohem Gewinn und kleinem Öffnungswinkel sehr bewährt haben.

Es gibt zwei verschiedene Prinzipien für digitale Winkelgeber: Inkrementell und Absolut.

1. Inkrementelle Encoder

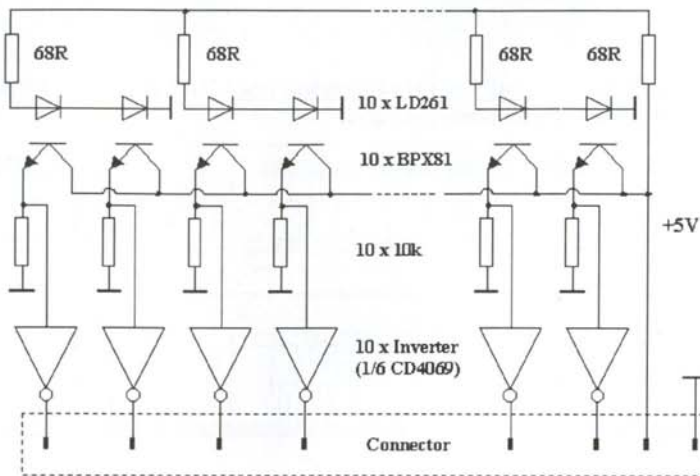
Der aktuelle Winkel der Antenne wird in einem Vorwärts-/Rückwärtszähler gespeichert. Änderungen des Drehwinkels durch Inkrementieren bzw. Dekrementieren des Zählers angezeigt. Die Information für den Zähler liefert ein Quadratsignal mit zwei um 90 Grad

versetzten Phasen. Dadurch kann die Drehrichtung bestimmt werden. Der Vorteil ist, daß unabhängig von der Auflösung (Anzahl der Impulse pro Umdrehung), nur zwei Bahnen auf der Scheibe notwendig sind.

Dem gegenüber steht ein großer Nachteil: sobald das System einen Impuls vergißt (zu schnelles Drehen, Fehler in der Spur....), oder die Stromversorgung wurde abgeschaltet, ist die Anzeige ab diesem Zeitpunkt falsch. In diesem Fall muß zum Rücksetzen des Zählers eine Referenzmarke durchfahren werden.

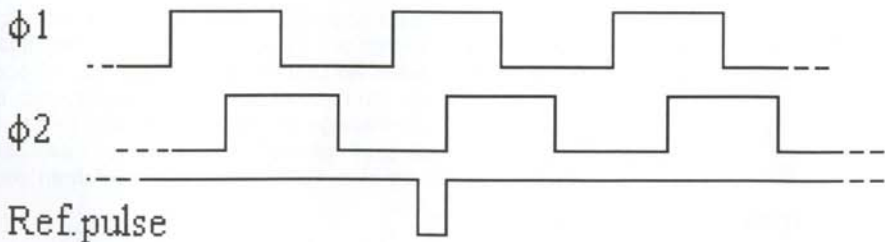
2. Absolute Encoder

Jede Position wird einer nur einmal vorkommenden Bitkombination zugeordnet. Deshalb wird mit dem Einschalten der Stromversorgung die richtige Position sofort angezeigt.

Fig. 3: Optoelectronic circuit sampling Gray-Code disk


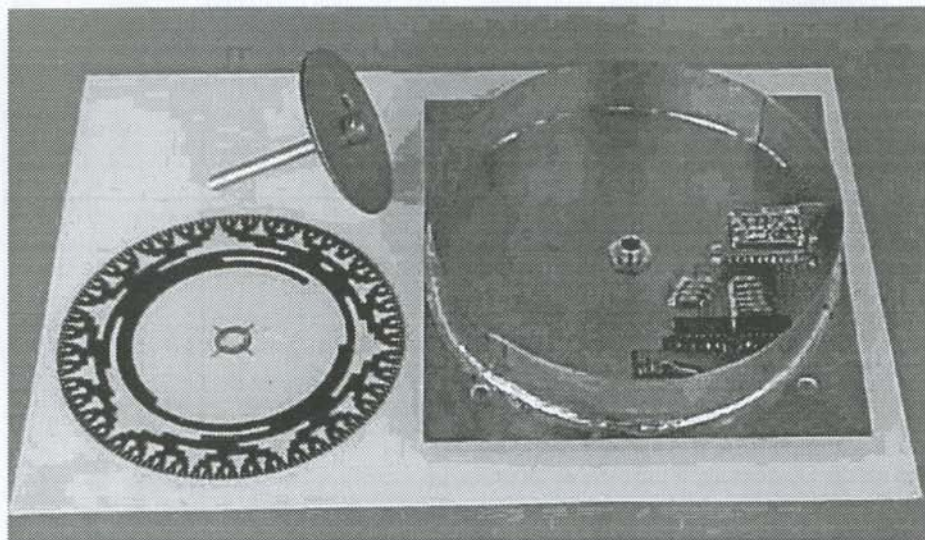
Andererseits braucht man nun für 0.5 Grad Auflösung 10 Bahnen auf der Codescheibe ($\lg(\frac{360}{0.5}) = 9.5^1$). Für 0.1 Grad benötigt man somit immerhin 12 Bit (Bahnen), das bedeutet z.B. 900 Striche auf der Spur für das LSB. Der einfache Binär-code ist für einen Winkelgeber ungeeignet, da sich beim Übergang

zwischen zwei Intervallen mehrere Stellen gleichzeitig ändern können. (Siehe Anhang). Beim Gray-Code ändert sich jeweils nur eine Stelle, somit werden falsche Zwischenwerte vermieden. Der Gray-Exzeß-Code ist ähnlich, er wird für Auflösungen verwendet, die nicht wie 1024, 2048 und 4096 einer Potenz von 2 entsprechen, sondern z.B.. 360, 720

Bild/Figure 4: Pulse Diagram


¹ Der Logarithmus Dualis ($\lg$) berechnet die Zahl der Bits, die zur Darstellung einer Zahl im Binärsystem notwendig ist.

Digital Encoder



oder 3600. Die Umwandlung vom Gray-(Exzeß-)Code in zur Weiterverarbeitung oder Anzeige geeignete Codes (Binär, BCD, ASCII...) kann leicht mit einem Programm auf einem Microcontroller realisiert werden.

Absolutgeber mit 12 Bit sind für Amateuranwendungen genau genug, allerdings sind professionelle Ausführungen ziemlich teuer. Manche haben parallele Ausgänge, andere ein spezielles Ausgabeformat wie zum Beispiel die SSI Schnittstelle (Serial Synchronous Interface). Inkrementale Encoder sind billiger, haben aber abgesehen von den oben erwähnten Nachteilen manchmal exotische Pulszahlen. Für diesen Fall habe ich einen Pulskonverter entwickelt, der die Pulsanzahl pro Umdrehung auf ein wählbares Vielfaches von 360 reduziert. Persönlich bevorzuge ich Absolutgeber.

Der Selbstbau von 12 Bit Enkodern mit 0.1 Grad Auflösung verlief erfolgreich. Es zeigte sich aber, daß dafür der mechanische Aufwand doch einigermaßen hoch und außerdem der Abgleich ziemlich kritisch ist. Für Antennen mit einem Öffnungswinkel nicht

kleiner als 2 Grad (8 m Spiegel auf 23cm, 1 m Spiegel auf 10 GHz), ist eine Auflösung von 0.5 Grad ausreichend. Der nachfolgend beschriebene "no tune" 10 Bit Encoder kann auch ohne Verwendung spezieller Werkzeuge nachgebaut werden.

Eigenbau Winkelgeber (absolut) mit 0.5 Grad Auflösung

Die Grundplatte ist 150mm x 150mm groß. Die Gray-Code Scheibe (120mm Durchmesser) wird wie folgt hergestellt: Zuerst druckt man das AutoCAD File ABS05.DWG (befindet sich auf meiner homepage) mit einem Laserprinter auf transparente Folie. Das Muster besteht aus zwei gespiegelten Teilen. Die beiden Scheiben werden ausgeschnitten und so zusammengeklebt, daß sich die empfindlichen Seiten innen befinden und nicht zerkratzt werden können.

Bild 2:

Der Meßkopf besteht aus doppelseitig kaschiertem Leiterplattenmaterial und zwei Stücken Lochrasterplatte, deren Löcher auf 1,5mm Durchmesser aufgebohrt werden, damit die Infrarot-LEDs und Fototransistoren

mit ihrem gewölbten Kopf hineinpassen und in einer geraden Reihe angeordnet sind. Da der Lochabstand 1/10" beträgt, muß jede Bahn auf der Gray-Code Scheibe 2.54mm breit sein. Alle 10 Bahnen bilden somit einen Kreisring von 25.4mm Breite.

Das digitale 10 Bit Ausgangssignal wird von der Schaltung in Bild 3 erzeugt. Wird ein durchsichtiger Teil der Folie abgetastet, entsteht 0V am entsprechenden Pin des Steckers während eine geschwärzte Stelle erzeugt einen Pegel von 5V.

Der Ausgangskode ist ein Gray-Exzeß Kode. Wird ein anderer Kode benötigt, kann man diesen (Binär, BCD, serial ASCII) mit einem nachgeschalteten Microcontroller erzeugen. Die 10k Widerstände und CD4069 ICs werden stumpf auf die Leiterbahnen der Grundplatte gelötet. Die 68R Widerstände befinden sich mit der Optoelektronik auf dem Meßkopf. Der Versorgungsstrom für den Enkoder beträgt etwa 30mA.

Das erste Foto zeigt den teilweise zusammengebauten Enkoder: Gray-Code Scheibe auf Folie, Achse mit Scheiben zum Festklemmen der Folie, Grundplatte mit Meßkopf und den übrigen Bauelementen. Wird nur 1 Grad Auflösung benötigt, kann man die äußerste Bahn oder deren Auswertung weglassen, und normalerweise ist keinerlei Abgleich notwendig. Will man wie vorgesehen die 0.5 Grad ausnutzen, muß eventuell die Position des Meßkopfes durch leichtes Biegen und Lötten justiert werden. Außerdem sollte natürlich die Gray-Code Folie genau zentriert sein.

Auf dem zweiten Foto ist ein Beispiel für ein Positionsanzeigesystem zu sehen. Es ist folgendermaßen aufgebaut:

Die Ausgänge der Enkoder für Azimut und Elevation sind mit Ports eines 87C51 Microcontrollers verbunden. Dort wird die Information zuerst auf Binär und dann auf BCD gewandelt. Zur Anzeige kann man wie gezeigt direkt ein LCD-display an einen anderen Port des 87C51 anschließen.

Natürlich sind auch andere Varianten möglich. Zum Beispiel eine serielle Ausgabe zur Weiterverarbeitung in einem PC, oder wie die

etwas anspruchsvollere Lösung auf meiner homepage zeigt: <http://www.qsl.net/oe5jfl> (EME antenna controller)

Appendix: Gray Code

Num ber	Binary				Gray			
0	0	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0	1
2	0	0	1	0	0	0	1	1
3	0	0	1	1	0	0	1	0
4	0	1	0	0	0	1	1	0
5	0	1	0	1	0	1	1	1
6	0	1	1	0	0	1	0	1
7	0	1	1	1	0	1	0	0
8	1	0	0	0	1	1	0	0
9	1	0	0	1	1	1	0	1

In comparison to straight binary code the Gray code changes only one Bit if the coded number is increased or decreased by 1. See table for the transition from number 7 to number 8.

The straight binary changes for example when going from number 7 to 8 all 4 bits.

Therefore the gray code is very well suited for coding of numbers, which decrease or increase in a monotonic manner, i.e. for position or angle encoders.

PLM001 - A Flexible 28V Power Supply for Coaxial Relays

Simon Lewis, GM4PLM

Introduction

I recently rebuilt my 10 GHz system from scratch and came across problems when trying to find a suitable 28V supply for the new transfer relay. I looked at many different ways at generating the required voltage but all seemed to rely on the doubling of the 12 volt supply. This raises problems when the battery supply voltage falls when out on the hills portable. A drop to 11 volts means that the output from a typical doubler type supply would only be 22 volts, a border line figure for some relay pull in voltages. One supply also used a tripler but, required some awkward components. So a hunt was made for a better supply design for the relay.

A hunt around the IRS and Maplin catalogues revealed an interesting chip and a quick visit to the manufacture's website on the internet provided a full application note. The chip in question is a 78S40 produced by National Semiconductors. The chip is a complete low frequency switch mode power supply in one IC and requires very few external components to form a complete supply suitable for driving a 28V relay coil.

The best thing I liked about this chip was the ability to use a supply line voltage of anywhere between +2.5 and 40 V DC. The chip has onboard feedback and keeps the output

voltage steady as a rock even if the input voltage is wildly altered. Very useful when out on the hills using a battery supply. A prototype was built and constructed and successfully tested in the 10 GHz box.

Construction

My prototype was laid out on veroboard and is simple to build. There are no hard to get parts in the design; the only part worth mentioning is the 150 uH Choke. This was a ready made part from Maplin Electronics in the UK. It is simply a ferrite ring wound with enamelled copper wire to the correct inductance. This should not present too much of a problem. The total parts cost less than 10 UKP and is perfect in every way for microwave work.

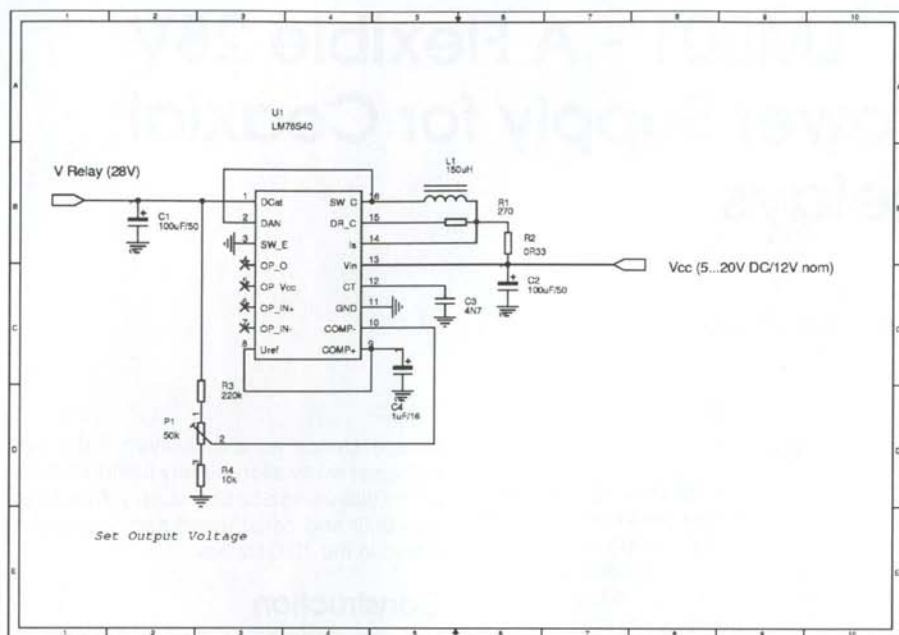
Alignment

Alignment is simple. Connect the board to a supply voltage in the range 2 - 40 VDC and adjust the multiturn pot until the output voltage is at the required value (between 2.5 - 40 VDC).

In-Use

In my application the PSU is connected permanently to the positive supply rail and the supply activated by grounding the return line via a FET in my sequencer. The relay is then

Fig. 1: Circuit Diagram



activated by the sequencer in the correct order. Of course you will be able to configure the supply to your own requirements.

The board will no doubt have some other uses, and Mark GM4ISM and myself are actively investigating a 12 - 28V PSU for use on 28V TWTA PSU's which will use the same chip and some external MOSFETS to drive the current capability of the unit up considerably.

I would be interested in any comments, suggestions or additional applications, as the module described here is simply a building block I thought would be of interest.

Deutsch

Ein oft auftretendes Problem ist, ein Surplus 28V Koax-Relais an einer Portabel-Station zu betreiben, die nur eine Betriebsspannung von 12V hat.

Nach einigen Recherchen fand ich auf der Webseite von National Semiconductors eine Schaltung für einen Schaltregler, der eine Spannung im Bereich von 12V auf eine Ausgangsspannung von 28V umsetzt.

Die Schaltung basiert auf einem LM78S40 IC und hat nur wenige externe Bauelemente (Abb. 1). Die Drossel mit einem Wert von 150uH kann man bei vielen Distributoren finden.

Die Inbetriebnahme ist einfach. Man legt eine Spannung von 12V an und justiert das Poti auf eine Ausgangsspannung von 28V. Selbst bei stark schwankender Eingangsspannung wird dieser Wert konstant gehalten

Microwave Products

Editor: Rainer Bertelsmeier, DJ9BV

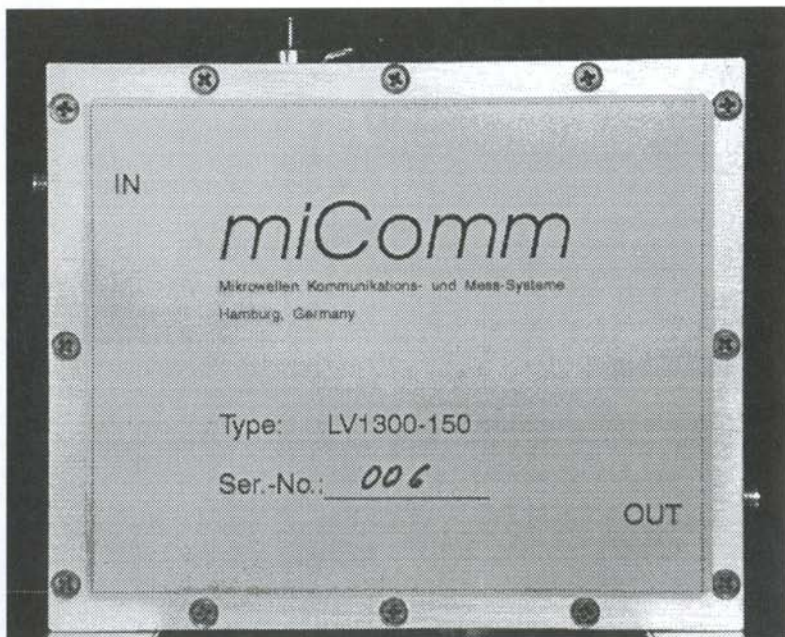
Product Review: LV1300-150

Description

The LV1300-150 is a 150W linear power amplifier with superior features. It achieves the output of the classical 2x2C39 tube amplifier but with higher efficiency and higher gain. It can be used for AM-ATV, CW, FM and SSB with continuous duty. It utilises the latest LDMOS-FET in a push-pull circuit.

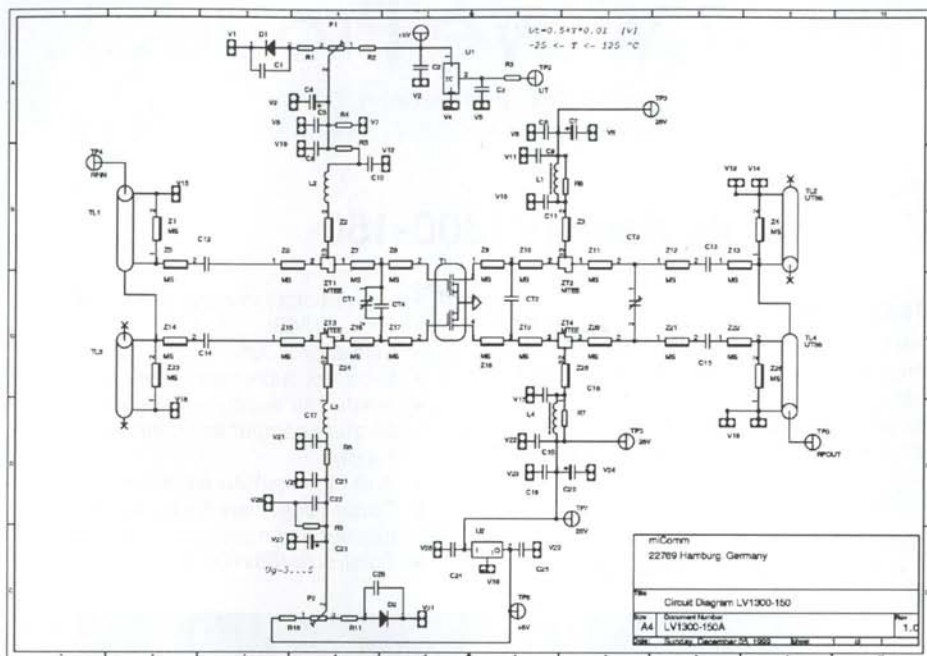
It features:

- Full coverage of the 23cm band
- Power output in excess of 150W
- Gain > 15dB
- Efficiency > 50%
- Excellent suppression of harmonics
- Single 28V supply voltage with temperature compensated internal bias supply
- Built in temperature measuring circuit
- Copper baseplate for excellent heat transfer and maximum reliability
- Small size (88x108mm)



LV1300-150

LV1300-150: Circuit Diagram



Beschreibung

Der LV1300-150 ist ein Leistungsverstärker für das 23cm Band. Dieser Halbleiterverstärker erreicht zum ersten Mal die Ausgangsleistung und die Verstärkung von 2 parallelen Röhren 2C39 bei einem erheblich besseren Wirkungsgrad. Diese Werte werden durch die Nutzung eines LDMOS-FET's in Gegentakt-schaltung erreicht.

Die Eigenschaften:

- Frequenzbereich 1240...1300MHz
- Ausgangsleistung > 150W
- Verstärkung > 15dB
- Wirkungsgrad > 50%
- Harmonische < -50dB
- 28V Betriebsspannung mit interner, temperaturkompensierter Ruhestrom-schaltung
- Meßfühler für die Transistortemperatur

- Kupferplatte zwecks optimaler Küh-lung
- Größe 88x108x30mm

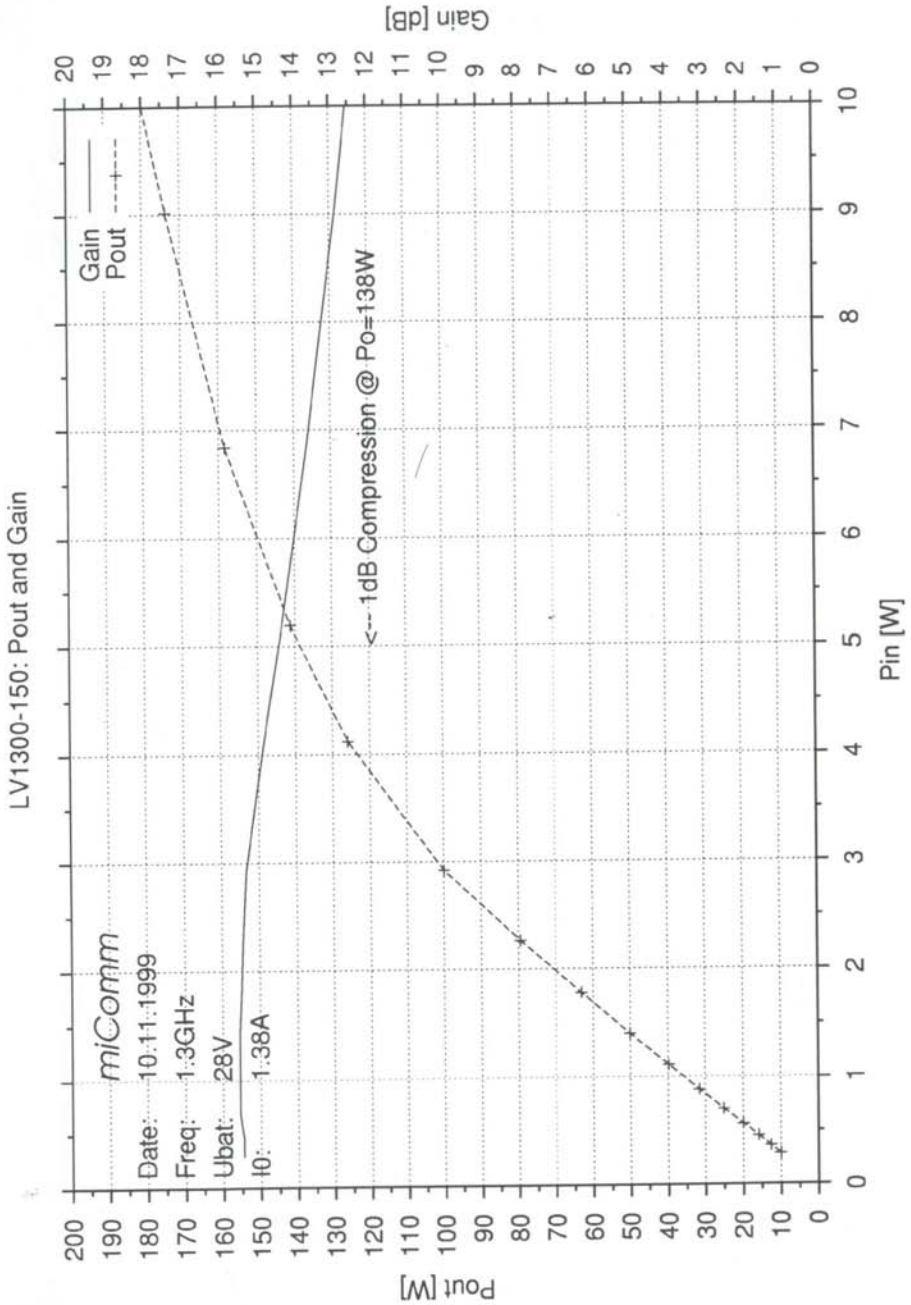
Construction

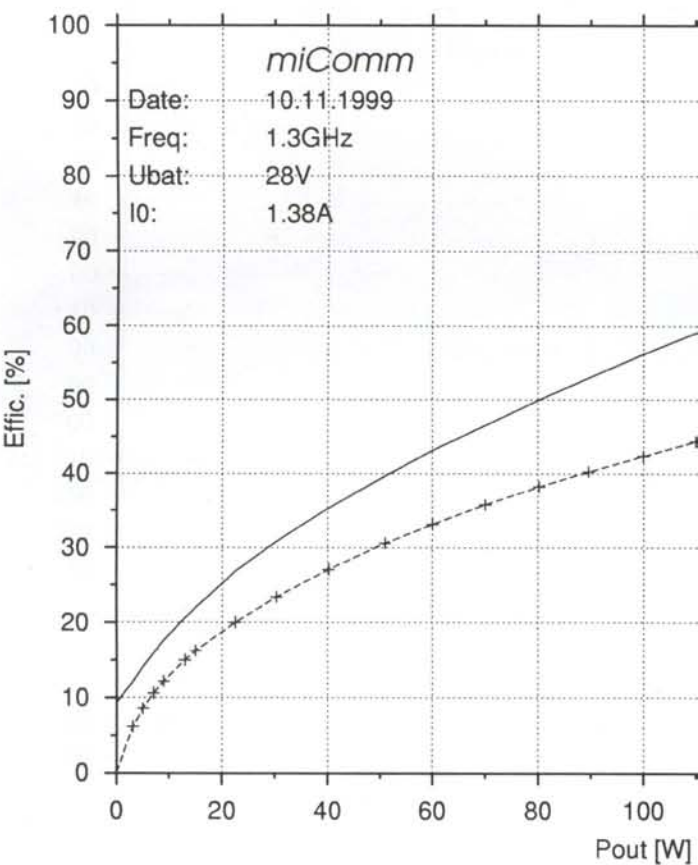
The amplifier is constructed on a RO4003 substrate with a dimension of 80x100mm. The PCB is mounted to a 8mm thick copper baseplate for optimum heat transfer to the aluminium heatsink. Components are professional type with ATC-capacitors, semirigid baluns and 125 °C electrolytes. Input and output connectors are SMA-female. The whole unit is housed in a machined aluminum box.

Konstruktion

Der Verstärker befindet sich in einem gefrästesten Aluminiumgehäuse mit den Abmessungen 88x108x30mm. Der Transistor ist auf einer 8mm Kupferplatte montiert, um optima-

LV1300-150: Output Power and Gain





activity. 73. Stellen. Thanks for your report, Steffen.

HA8MV (KN06GU) WKD ON 144 MHz:

1999-08-12
 2313 SM4VQP 37 37 csr
 1888-08-13
 0002 SM5FMX 37 26 csr
 0013 SP8UFT KO1IKI 37 37 csr
 0031 G1WPF JO9IRP 27 28 csr
 0043 SP4MPB KO03GS 37 37 csr
 Equipment: TR751E, preamp CF300, PA 60W, 11 ele
 Yagi at 8 m agl with 50i m coax-cable.

HA8MV/p (KN06HT) wkcd on 144 MHz:

1999-11-18
 0114 UT5VD 49 39 csr
 0122 RW3QFM 37 37 csr
 0126 73IG 59 59 ncsl
 0130 G4LOH IO94IA 59 59 csr
 0141 IK0BZY JN62GA 59 59 csr
 0153 RA3QTT LO01GQ 59 59 csr
 0206 EB4CJE 39 39 csr
 0212 PA0ZM 37 37 csr
 0221 F/G8MBI JN04FT 59 59 csr
 0225 RW3PF KO93CD 55 39 csr
 0351 UA3DJG 59 59 csr
 0355 UA3PTW KO93BS 59 59 csr
 0400 RK3AF 59 59 csr
 0402 ES2QO 59 59 csr
 0708 OH8K 59 59 csr
 0800 G3XFB/p 39 39 csr
 0902 DG6JF/p JO33QN 37 27 csr
 Equipment: TR751E, 60W, 4x11 ele at 35 m agl.
 Thanks for your report, Gabi.

threw less we worked G0KPPW and G4SWX in tropol

We were still in time for the first MS skeds, we worked the following in MS:

HB0/P4TUE wkcd on 144 MHz:

1999-07-29
 2200 2300 LY2MW
 2300 0000 SM5TSP
 1999-07-30
 0300 0310 IT9VDQ 5 11 8 c
 0310 0400 CQ NO takers !
 0400 0417 YO3DMU 6 16 3 c
 0417 0440 9A0DX 6 8 4 c
 0500 0600 EA2LU nil
 0600 0605 S51AT MS-skcd but lb copy in tropol
 2200 2300 SM5TSP nil
 1999-08-01
 2100 2200 SV1BTR nil
 1999-08-02
 2200 2300 IK0BZY no copy (wrong freq, sni enrico)
 1999-08-03
 0400 0452 LY2MW 3 5 2 c
 0500 0535 LA0BY nil
 0537 0612 LY2BIL 5 15 2 c
 0700 0800 EI5FK 26 1 nc
 0800 0900 G0IRUZ nil
 1000 1100 EA1ABZ nil
 2100 2200 GM0H0U 1 nc
 2200 2300 IW0GPN nil
 1999-08-04
 0400 0422 EH4EHI not a single ping

le Wärmeabgabe zu garantieren. Die Leiterplatte ist aus einem Rogers Mikrowellen-substrat gefertigt. Die Komponenten sind für den professionellen Temperaturbereich. Die koaxialen Armaturen sind SMA.

Measurement results

Output power up to 180W is obtainable from this amplifier (see graph output power). For linear operation an output power of 150W is recommended. The 1dB compression is at about 140W output power. Efficiency climbs to 53% at 180W and is about 50% at 150W. Gain at a power level below 70W is typically 15.5dB. This means 2W drive and 70W out. The gain drops to 14.5dB at 140W (1dB compression point at 5W drive and 140W out) and 12.5 dB at 180W out and 10W drive.

The graphs show a detailed picture of the performance.

Resultate

Die graphischen Abbildungen zeigen die Verstärkung in Abhängigkeit von der Ausgangsleistung sowie die Stromaufnahme und den Wirkungsgrad in Abhängigkeit von der Ausgangsleistung.

Die Verstärkung beträgt typisch 15,5dB bei einer Ausgangsleistung von 70W. Das bedeutet eine Ausgangsleistung von 70W bei einer Steuerleistung von 2W. Bei einer Ausgangsleistung von 140W sinkt die Verstärkung auf 14,5dB (5W Steuerleistung bei 140W Ausgangsleistung). Das ist der 1dB Kompressionspunkt. Für linearen Betrieb (SSB) sollte der Verstärker folglich maximal 150W Ausgangsleistung liefern. Bei dieser Leistung ist der Wirkungsgrad 50%.

Für CW ist die maximale Ausgangsleistung 180W bei einer Verstärkung von 12,5dB. Das bedeutet eine notwendige Steuerleistung von 10W. Der Wirkungsgrad ist dann 53%.

Operation

The whole unit has to be mounted to a 0.1K/W heatsink. This is typically a aluminium heatsink with a size of 150x200x85mm with an additional forced air cooling by an axial blower. At 150W continuous duty output the

temperature of the heatsink stabilises to 50°C after 2 hours at room temperature of 25°C. The built-in thermometer allows for temperature control of the assembly.

Output protection can be achieved by an additional circulator of the 200W class. Otherwise the load VSWR is limited to 2:1.

For the DC-supply a well regulated supply of 28V at 15A is required. The amplifier is safe up to 32V operating voltage, but this should not be applied in normal operating conditions to preserve the safety margin.

Handhabung

Um die entstehende Wärmeleistung (ca. 150W) abzuführen, muß das Modul auf einen Kühlkörper montiert werden, der einen Wärmewiderstand von besser als 0,1K/W hat. Das ist z.B. ein 150x200x85mm großer Kühlkörper mit einem zusätzlichen Axiallüfter. Hiermit ist nach 2 Stunden Dauerbetrieb mit 150W Ausgangsleistung die Kühlkörpertemperatur ca. 50°C bei einer Umgebungstemperatur von 25°C. Die maximale Temperatur der Kupferplatte ist 70°C. Diese kann mit dem eingebauten Thermometer überwacht werden.

Der Verstärker darf mit einem maximalen VSWR von 2:1 bei einer Leistung von 150W betreiben werden. Mit einem zusätzlichen Zirkulator ist eine vollständige Absicherung möglich.

Die Stromversorgung von 28/15A muß gut geregelt und impuls- bzw. HF-fest sein. Die maximale Betriebsspannung beträgt 32V. Mit 28V Betriebsspannung hat man einen genügenden Sicherheitsbereich.

Distribution

Ready made units and auxiliary parts like heatsinks, blowers and circulators are available from DC3XY, Rainer Jäger, Breslauerstr. 4, D-25479 Ellerau. tel.: +49-4106-73430/fax: +49-4106-761288.

Microwave Europe

Editor: John Sørensen, OZ1IPU

10368MHz

DG1VL/p JO71AE wkd: 10.05.1999 DF3CK JN57uv 400km Tropo ODXI, 11.05.99 DM2AFN rs JO61wb, OK1JKT/p rs JO60ok, SR6NCI/B rs Beacon JO80jg, 19.05.99 DM2AFN JO61wb, OK1JKT/p rs JO60ok, OK1JKT/p rs JO60ok, 28.05.99 DL2NUD rs JO63mf, DF3CK rs JN57uv, DL3ALI rs JO50jg OP. DL0GTH, OE5VRL/5 rs JN78dk 307km, DK9MN rs JN58tc 382km SQR #19, DF1OI rs JO42tf 320km, 02.06.99 DK4GD rs JN47gw 532km SQR #20, DG7MHR rs JN57dr 467km, DB6NT rs JO50ti, DF6NA rs JN49xs 324km, DB0JK/B rs Beacon JO30lx, PA3AWJ rs JO21GW 656km ODXI SQR #21, DL4EAU/p rs JO51dr, PA5DD rs JO22ic 647km SQR #23, DH6FAE/p rs JO40om 341km, DL2ABO rs JO51cr, DK1KR JO53 hrd, 17.06.99 OK1JKT/p rs JO60ok hrd. DB0HEX/B. DARC -VHF-UHF-SHF Contest Juli 99
DG1VL/p JO61XF wkd: 04.07.99 DJ9DW JO40le 371km, DK0WAL JO61oa, DF6NA JN49xs 326km, DL4WO JO61wc, OK1JKT/p JO60ok, DJ6BU/p JO40xl 338km, DJ1KP JO40jj 375km, DG1KJG JO30nt 480km #23, DM2AFN JO61wb, DC9YC JO31pi 464km #24, DL0GTH JO50jp, DG2DWL/p JO60vr, DL4DTU/p JO60ts, DF0MTL JO60om, OK1VAM/p JO60lj, DL0UL/p JN48uo 421km #25, DK0FLT JN59fw, DB6NT JO50ti, DK4VW JO40it 370km, DG2NBJ JO50nd, OK1KIM JO60bj, DB6DY/p JO50ip, OK1KEI/p JN79cx, DF0TEC/p JO73cf 223km #26, OE2M JN67nt 384km #27, DK0OG JN68gi 335km, OE1MCU/3 JN77xx 389km #28, DC8EC

JN57ux 396km. DG1VL/p JO71AE wkd: 06.07.99 DM2AFN JO61wb, OK1JKT/p rs JO60ok, DF3CK rs JN57uv 407km, DB0FGB/B rs beacon JO50. Tks fer info HENRY.

F6DKW JN18CS wkd: 2.5.99 G4PBP/p IO82 #69, 29.5.99 F6RVA/p JN24 #70, 30.5.99 F1BLT/p JN04, F5FVP/p JN04, F5BUU/p JN03, DH6FAE JO40, DH9NBB JN49, DL4EAU/p JO51, 6.6.99 F1ANH/p IN88, 26.6.99 F6DPH/p JN14 #71, 27.6.99 F6BVA/p JN34 #72, 3.7.99 F1CLQ/p JN38, 18.7.99 F1PYP/p IN87, 24.7.99 F5FLN/p IN93, 1.8.99 F1LHL/p JN15, F1HAR/p JN04, 8.8.99 G4ERP/p IO81, G4NNS IO91, 9.8.99 LX1DU JN29, 14.8.99 F1UO JN16, 22.8.99 F5JGY/p JN04, F1EIT/p JN14, F6KEH/p JN14, 26.8.99 PE9GHZ JO11, 29.8.99 F6DPH/p IN96, F5FLN IN93, F1EIT/p JO02 #73, 19.9.99 F6DPH/p JN35, 25.9.99 F5HRY/p IN86 #74, 10.10.99 F1GTJ JN03. Rig: TX 10W, NF dB, 0.6m dish. Tks fer info Ofaillard.

HAPPY NEW YEAR. Your reports can be send to me on FAX ++45 98467877, E-mail dmteknik@post4.tele.dk as "ASCII-DOS text" or by post to my NEW ADDRESS: John Sorensen, Solystvej 13, DK-9300 Saeby, Denmark, and please if possible on a disk in ASCII- DOS text, that will help me a lot, thank you. Vy 73 John OZ1IPU

Microwave: World Firsts and World Records

Band (GHz)	World First QSO			World Record		
	Date	Calls	QRB (km)	Date	Calls	QRB (km)
10	1946-05-06	W2JRM-W2JN	3.3	1994-12-30	VK6KZ/p-VK5NY/p	1912
24	1975-10-14	G3BNL/P-G3EEZ/p	150	1999-08-11	I0LVA-I3EME/IT9	444
47	1984-10-03	HB9AMH-HB9MIN	1	1998-05-15	F6BVA/p-F5CAU/p	193
76	1985-12-30	HB9MIN-HB9AGE	0.5	1995-12-07	HB9MIO/p-DK4GD/p	114
145	1992-12-12	DB6NT/p-DL1JIN/p	1	1997-04-07	DL6NCI/p-DB6NT/p	53
241	1993-05-23	DB6NT/p-DL1JIN/p	0.1	1995-06-07	DB6NT/p-DF9LN/p	2.1
411	1998-01-06	DB6NT/p-DL1IN/p	0.05	1998-01-06	DB6NT/p-DL1IN/p	0.05

If you have an update or a correction, please write to:

John Sørensen, OZ1IPU, Rosenvej 49, DK-9300 Sæby, Denmark. Tel.: (++45)9846-3311

Microwave USA

Editor: Kent Britain, WA5VJB

The 1999 Microwave Update Conference went well with 145 microwave enthusiasts from 7 countries attending. Surplus Tours, Technical Talks, Noise Figure Measurements, Antenna Range, the loan of a HP 8510 Network Analyzer, and comradeship all combined to make this one of the more memorable microwave events.

On the Antenna Range we measured 36 microwave antennas. Considering the large number of 24 GHz antennas, and our first attempt at measuring 47 GHz antennas, really shows where we are heading. Also for the first time, W5ZN set up his Feed Horn Pattern measuring equipment and measured a large number of Feed Horns. I will have more on his results in the next issue of DUBUS.

The Technical Proceedings was the largest Proceedings ever produced by a US conference. 621 pages of technical information on Local Oscillators, 1.2-120 GHz operating, Low Noise Amps, High Power Amps, Filters, LASER Systems, and many more technical articles make this book an important addition to any microwaveer's library. Microwave Update 1999 Proceedings are available

though the ARRL in Newington, Connecticut for \$20. ARRL Publication Number 7725



W5ZN measuring feedhorn patterns at MW99

Microwave Update 2000 will be hosted by the Mt. Airy VHF Radio Club "The Pack Rats" in Philadelphia, Pennsylvania. The date for Microwave Update will be Thursday Sept 28 through Sunday October 1st at the Holiday Inn Select, Bucks County. For more information you can contact John at JohnKB3XG@AOL.COM or www.ij.net/packrats. As we get closer to the conference I will be forwarding more information.

Microwave Operating has been light, but we can expect more 24 GHz activity. The Pack Rats commissioned the building of a large number of 1 watt 24 GHz amps and a supply of 24 GHz low noise amps. I know that a pair of these will be greatly improving my 25 milliwatt 24 GHz station shortly.

On 47 GHz W0EOM and KF6KVG set a new US distance record of 137 km December 8th. Both stations used 23 inch dishes, 5dB NF, and +11 dBm for KF6KVG and +16 dBm for W0EOM. At first signals were 1 S-Unit out of the noise, but about 10 minutes later Bob found he was on a side lobe. Quick peak, and signals rose to S-8! Temperature was 12C with 60% humidity. They have a 290 km path picked out and believe they have the dB's, watch for this record to be extended.

On 23cm we have 5 new EME stations. K5GW with a 4 Meter dish and 100 watts in Texas, W4AD with a 4 Meter dish and 200 watts in Virginia, W7QK with a 3.3 Meter dish and 50 watts from Arizona, W1QC with a 4 Meter dish and 200 watts from New Hampshire, and WA1JOF using 4 Yagi's and 200 watts in Maine. On 6 cm, NU7Z has made several improvements to his EME station and is looking for skeds. WA5VJB@FLASH.NET

Results Noise Figure Contest Microwave Update 99

Frequency MHz

Call	Design	Device	Input Network	Noise Figure (dB)	Gain (dB)
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902 MHz

WD5AGO	HB-AGO	NE325	L	0.35	29.80 -
W5ZN	HB-DEM	ATF-10136	L	0.57	19.50

1296 MHz

WA8WZG	Tommy-AGO	NE325	-	0.32	32.38 -
W7CS	SM6IKY/W5	MGF 43180	-	0.36	20.30 -
KD5FZX	-	MGF 43180	-	0.38	20.70 -
K2DH	AGO	ATF-36077	-	0.38	20.00 -
W7CS	AGO	NE325/10136	-	0.39	31.00 -
KD5FZX	SM6IKY/W5	MGF 43180	-	0.39	19.70 -
N7LQ	DEM/AGO	NE321	-	0.44	16.50 -
WA8WZG	DEM/HEMT	HEMT	-	0.45	17.70 -
WA8WZG	Tommy/AGO	NE325	-	0.47	25.25 -
K6DV	-	ATF-36077	-	0.48	17.60 -
WA9FWD	DEM HEMT	-	-	0.50	18.30 -
W7QX	W7CNK	NE334	Stripline	0.63	18.25 -
N7LQ	DEM	ATF10136	-	0.66	17.40 -
W7QX	-	334/10136	Microstrip	0.68	29.20 -
W7CS	AGO	ATF-10135	-	0.88	11.30 -
WA8RJF	DEM	ATF-10136	L	0.90	17.30 -
AB5SS	DEM	ATF-10136	-	0.98	17.90 -
N7LQ	-	ATF-10136	-	1.10	17.90 -
N7LQ	DEM	ATF-10136 Converter	-	1.11	18.64

1420 MHz

WD5AGO	HB	NE325	L	0.32	30.00
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2304 MHz

N3CEV	-	ATF-36077	-	0.50	17.76 -
K5VH	- Preamp	-	-	0.50	16.80 -
N7LQ	DEM 13LNQH	-	-	0.82	13.90 -
N7LQ	-	ATF-10136 N	-	1.00	13.00 -
W3XO	DEM	MGF865 Converter	-	2.35	17.00 -
K5VH	DEM	- Converter	-	3.45	11.70 -
N5BRG	Avantek	- Preamp	-	9.65	12.70

3456 MHz

N3CEV	DEM/LUA	ATF-36077	-	0.68	15.26 -
WA8WZG	HB/LUA	2xATF-10135	-	0.75	24.85

Call	Design	Device	Input Network	Noise Figure (dB)	Gain (dB)
5760 MHz					
N4PZ	DEM	-	-	0.74	15.40 -
WD5AGO	LUA	ATF-36077	-	0.86	12.70 -
AB5SS	DEM/LUA	ATF-36077	-	0.90	11.10 -
WA9FWD	DEM	-	-	0.92	11.40 -
N4PZ	DEM	-	-	0.97	11.80 -
WD5AGO	LUA/AGO	ATF-36077	-	1.05	10.76 -
WA8WZG	2 Stage DEM	ATF-10135	-	1.25	17.68 -
N3CEV	DEM/LUA	ATF-36077	-	1.39	10.78 -
WD5AGO	FSCM57257 Comm	-	-	2.10	19.80 -
WD5AGO	HB-DEM	MGA86576 Converter	-	2.60	31.50 -
WD5AGO	HB-MMIC	FMM5701	-	2.66	12.80 -
WD5AGO	Homebrew	FSCM Converter	-	2.80	25.00 -
WD5AGO	2* MMIC	HP/MGA-8	-	3.70	12.00 -
WD5AGO	W-Johnson Comm	-	-	6.90	36.70
10368 MHz					
K7NQ	Kuhne-HEMT	-	-	0.79	22.33 -
WB0LVC	- ATF-36077	-	-	1.02	11.56 -
W9ZIH	G3WDG	-	-	1.12	11.07 -
N2CEI	DEM FMM5701 Converter	-	-	1.20	17.60 -
N2CEI	DEM FMN5701LG Transverter	-	-	1.23	18.40 -
W1VT	Homebrew LAU Design Converter	-	-	1.32	19.50 -
WB0LVC	- ATF-36077	-	-	1.34	11.42 -
AD6FP	- ATF-36077	M	-	1.40	14.30 -
AD6FP	- ATF-36077	M	-	1.45	9.76 -
AD6FP	- ATF-36077	M	-	1.52	14.70 -
WB6IGP	Surplus Qual. 3 Stage	-	-	2.13	26.63 -
K0GCJ	Commercial	-	-	3.25	28.00 -
WA1MBA	WR75 I/O	-	-	4.70	12.43 -
KC5ODM	- 10368	-	-	7.35	20.35 -
KA5IIA	Commercial Harris	-	-	8.50	15.50
24192 MHz					
VE7CLD	DB6NT Commercial Preamp	-	-	3.20	28.00
47088 MHz					
W0EOM	GE Commercial Converter	-	-	4.42	16.65 -
W0EOM	GE Commercial	-	-	4.76	16.30 -
AA6IW	GE Commercial	-	-	5.40	16.50

EME News

Editor: Bernd Wilde, DL7APV

intro: I hope you all had a nice christmas and a good start into '2000.

ARRL is over. The next contests are in progress :

1. REF/DUBUS contest dates:

144/1296	18/19 March
432/microwave	8/9 April

2. SSB-Contest

23cm ssb----12/13 Feb.

3. EME Marathon

ARI-EME Marathon all year

144 MHz

DL2IAN rreports : 07.08.99 RW1AW #41, K3VGX #42, W0PT #43, 14.8.99 EA2LU #44, IK3MAC, W0VD #45, JH0WJF #46, W5UN, IK1FJI, W0HP #47, Italian EME Contest : 02.10.99 IK3MAC, I2FAK, I3DLI, K2GAL, KB8RQ, W5UN, SM2CEW, IK1MTZ #48, F3VS, IK1FJI, 03.10.99 HB9Q, WA3BZT #49. Hrd were in Contest: DJ5RE, DK9ZY, JA4BLC, EA3ADW, EA2AGZ, JH0WJF, W0HP, UT5ER, EA3DXU, RZ1AWT, IK2DDR, LZ2US. 27.10.99 JA4BLC #50, ARRL EME Contest 30-31. Oct. 99, F3VS, I3DLI, SM5FRH, IK3MAC, EA2LU, SM5BSZ, I2FAK, DL5MAE, KB8RQ, W5UN, DL7MAT #51, DK5YA #52, K5GW, IK1MTZ, F6BSJ #53, VE7BQH, DK9ZY #54, HB9Q. JN49BC, DL2IAN@t-online.de. rig , 800 W, 4x9 element F9FT, MGF1302, DSP59+. tnx fer info Tom

DM2BHG on board again. EME operation he started in 1987 as Y22HG. As DL9MHG and 99 initials he stopped moonbouncing because a 3 year contract in saudi arabia. Under the callsign HZ1AB he worked on SW and tried to hook up an EME station. The Khobar bombing in '96 stopped his attempts and in '97 he returned to DL. The result of one year



DM2BHG 4x17el. F9FT mod.

work was a new tower with a 8x17el.F9FT array. First qso was made with Dave W5UN (who else?) when a big storm destroyed the whole work. Now he is back with 4 x17el. cross yagis, MGF1302 and GS35B. During the contest he made 38 qso with 16 initials (7K3LGC, EA3DXU, F6BSJ, G3ZIG, HB9Q; I3DLI, OZ1HNE, VE3KH, SM7SJR, IK1FJI, EA2AGZ, DL4LQM, UA3PTW, OH2BC, DL2MHS, K6MYC). Hope to meet you via the moon. Skeds are welcome (heinz.borde@5t-online.de). tnx fer info Heinz

HB9CRQ reports, HB9Q Dan & Mark (JN47cg) are qrv since october '98 using the old station of HB9CRQ at a new qth. So they are counting as a new initial for everybody. Rig: 8x19xxxx, 7/8" feedline, 0.2dB NF, 8877, DSP 599zx. They are qrv on random during activity weekends. Check for them around 144.016. For skeds please email hb9crq@hb9q.ch. tnx fer info Dan.

OM9M (MS exp. in KN18AM) wkd: 10/08/99 K2GAL O/- nc, 11/08/99 VE7BQH O/- nc, 12/08/99 W5UN O/O, KB8RQ O/O, W7GJ O/O nc, 13/08/99 W7GJ nil, VE7BQH nil. See also MS report) rig: preamp. with MGF1302 and CF300, linear PA 350W, 2x16 ele. F9FT, soft. MS-DSP 9A4GL and OH51Y. om7aq@qsl.net Internet web pages: <http://www.om0pbf.sk/om9m> & <http://www.hamradio.sk/om9m> tnx fer info Zoli OM7AQ

144 MHz news

DK3WG reports : Hello EME friends here the 2m-EME report from from R/U stn - end October: **R1MVZ** maked 135 initials from Malyj Vysotskij Isl. List see from **RW1AW** in "moon-net". VHF-QSLs via **DK3WG**. **RU1AA** Alex was back from **R1MVZ** and wkd **J6MB**. **RW1AW** confirm qso with new stn: **WA2FGK**, **I2RV**, **SM3PWM**, **RW3PF**, **R1MVZ**, **DF1CF**, **EA1YV**, **IW5DAN**, **VE2JWH**, **IV3GBO** and **J6/K6MYC #165**. **RX1AS** wkd with **WA2FGK**, **R1MVZ**. **J6MB**. **UA3DJG** wkd new **DK3WG** and **JL1ZCG**. **UA3PTW** initials **R1MVZ**, **DF8LC**, **RV3IG**, **UA3MBJ** and **J6MB #106**. **UA3TCF** only short time active, no new stn. **UA4API** glad to work **JA0BLU**, **W0PT**,

SM3PWM, **RK9CC**, **NJ0M**, **WA1JOF** and **OH2BNH**. **UA4AQL** no new. **RK9CC** wkd **R1MVZ**, **JA4BLC**, **SM5SJR**, **DJ5RE**, **VE3KH**, **PE1LCH** and **K5AIH**. **UA9FAD** new stn **R1MVZ**, **9H1PA**, **W8/NP4C**, **PE1OGF**, **WA2FGK**, **WA3BZT** and **N3FA** **UT1PA** had this new one: **VE3KH**, **R1MVZ**, **G3ZIG**, **EA2AGZ**, **SP7DCS**, **K1CA**, and **OH3AWW**. **UT5EC** added **S52LM**, **HB9Q**, **G3ZIG**, **OE5EYM**, **R1MVZ**, **I3DLI**, **I2RV**, **UA4API**, **UA3PTW** and **7K3LGC #171**.

DK3WG wkd new : **WA2FGK**, **R1MVZ**, **W8/NP4C**, **N3FA**, **UA3DJG**, **WA3BZT**, **OK2DL** and **J6MB #710**. info: -**UA3MBJ** is qrv agn 4x19 el LY, 200W- **RA3LE** was not very active in the summer time, will more now.

Nov: **RU1AA** had new stn before the contest **JN1CSO**, **RW3PF**, **WA2FGK**, **W4FF**, **W0EKZ**, **WA4MVI** and **W6OMF**. **RW1AW** glad for this initial: **W6OMF**, **9A2PT c?**, **SM2BYA**, **WA3BZT**, **EA2AGZ** and **W6TE**. -contest: 46 QSO. **RX1AS** wkd new **K1CA**, **VE7BQH** and **G3ZIG**. **RV3IG** added **UA3PTW** and **UT5ER**. -contest: 17 QSO **UA4AAV** give this new stn: **9H1PA**, **SM5CFS**, **VE3KH**, **LA9NEA**, **IK1MTZ**, **IK1FJI**, **7K3LGC**, **OE5JFL**, **IK2DDR** and **OH3AWW**. -contest: 30 QSO. **UA4API** cfm new **IW5CNS** and **PA2CHR**. **UA9FAD** had new stn **ON7UC**, **NJ0M**, **W6OMF**, **DK3BU**, **DJ6FU**, **K1UHF**, **OH3AWW**, **PA3CWI** and beginn Dec. on **Random 8J1RL**-contest: 29 QSO x 20 Multi. **UT5ER** cfm new one **RV3IG #187**. **DK3WG** wkd new **K7YVZ**, **JR3REX** and verry glad **8J1RL (DXCC #109)**. - contest: 39 QSO x 24 Multi. info: - I have the log from **R1MVZ**, and the QSL is in the work. - **UT5ER** is qrv agn, El.< 45 deg. 73, gl via moon. **Jurgen**, **DK3WG@FFO.OBDG.DE** E-mail-- **DK3WG@DB0FFY P.R.**

QSL-Mgr for: **R1MVZ** (Oct 99), **RU1A/RZ1AWT**, **RU1AA**, **RW1AW**, **RV3IG**, **UA3TCF**, **UA4AAV**, **UA4API**, **UA4AQL**, **UA9FAD**, **UR5LX** and **UT5ER**. Please, send your QSL and SASE to: **J.Fiedler, P.O.Box 1531, 15205 Frankfurt, GERMANY**

1A0 epedition: Bad News. To all EME & MS operators: Dear friends. I'm deeply saddened to announce you that on Monday evening (14/11/99) **IK0FVC** told me he doesn't view

EME-TOPLIST

Call small SQR DX US WAS WAC #
CC States

144MHz

I2FAK	448	56	105	50	1993	1988	942
HB9CRQ	395	57	96	50	1994	1987	725
UA9FAD	265	43	73	40	--	--	400
PA2CHR	254	43	63	48	--	1993	364
HB9Q	181	36	49	38	--	1999	230
DJ7OF	150	28	30	22	--	1996	170
RW1AW	116	24	31	23	--	--	129
9A9B	66	16	21	11	--	--	84
DL2IAN	47	16	17	14	--	--	49
PE1OGF	46	14	61	16	--	--	88
UA3PTW	40	12	14	9	--	--	41
EA1ABZ	37	15	17	?	--	--	39
YO2AMU	36	18	24	12	--	--	57
SP7DCS	33	15	15	8	--	--	33
YO2IS	33	14	16	10	--	--	34
S53J	28	11	12	3	--	--	31
F5HRY	21	?	8	7	--	--	21
JA9BOH	?	?	39	34	--	--	210
CT1DMK	?	?	41	?	--	--	118

432MHz

DL9KR	378	52	82	50	1987	1978	715
DJ6MB	273	39	60	44	--	1984	328
OK1KIR	247	43	62	44	--	1982	342
G3LTF	206	?	55	47	--	--	327
DL7APV	134	27	33	40	--	1984	163
F1ANH	125	25	31	25	--	--	159
ON4KNG	115	25	42	18	--	1996	138
YO2IS	115	23	33	23	--	--	141
OE9ERC	107	24	27	22	--	1993	126
G4ERG	107	23	31	28	--	--	141
DL8OBU	90	23	29	21	--	--	104
OK1CA	71	24	25	22	--	1996	121
EA6ADW	66	19	24	19	--	--	69
CT1DMK	49	?	19	?	--	--	49
S52CW	44	15	17	12	--	--	50

PA2CHR	38	14	17	10	--	--	45
F5HRY	31	?	14	8	--	--	31
OK1DFC	21	12	11	6	--	--	21
JA9BOH	?	?	48	42	--	--	296
G3SEK	?	?	54	42	--	--	275
ZS6AXT	?	?	32	?	--	--	152
RW1AW	?	?	?	?	--	--	35

1296MHz

OE9ERC	140	29	35	28	--	1993	201
OK1KIR	131	30	37	25	--	1989	164
HB9BBD	121	26	34	24	--	1994	142
G3LTF	108	?	31	20	--	--	134
F1ANH	106	25	31	20	--	1994	140
EA6ADW	105	24	31	24	--	1994	145
DJ9YW	101	26	33	18	--	1998	109
CT1DMK	67	?	24	?	--	--	69
OK1DFC	58	18	24	11	--	--	65
OK1CA	34	16	18	7	--	--	31
JA9BOH	?	?	1	?	--	--	2
HA5SHF	?	?	20	6	--	--	46
ZS6AXT	?	?	32	?	--	1993	144

2300MHz

OE9ERC	41	14	19	8	--	--	44
OK1KIR	36	13	18	9	--	--	37
F1ANH	17	8	11	5	--	--	18
G3LTF	13	?	12	2	--	--	14
EA6ADW	8	4	8	1	--	--	9
ZS6AXT	?	?	16	?	--	--	29

5760MHz

OE9ERC	14	7	12	2	--	--	16
OK1KIR	11	7	9	2	--	--	12
CT1DMK	5	?	4	?	--	--	4

10368MHz

OK1KIR	11	8	10	2	--	--	12
OE9ERC	11	8	7	3	--	--	11
CT1DMK	10	?	8	?	--	--	11

necessary to allow any VHF operation from 1A0 S.M.O.M. He explained his refusal with the following argument: "IOJBL is abroad so it is not possible to organize (HF) expedition in a good way. We are planning (IK0FVC & IO0CUT) to be active (only HF) just few days with a small station". MERE EXCUSES. I tried to remind him that "ALL VHF EQUIPMENT" would have been provided by us (VHF operators) and that two days would have still been

enough to make a good activity but he refused, wanted to know no reasons.

432 MHZ

DJ6MB (JO30NR) reports: He did not change to 1296 and is still on 432. Uwe makes a clean up, new cables etc. at his old antenna. He had sun noise 14dB and only 6.6dB at the eclipse. Uwe will be fully qrv by end of sept. wkd 03.10.99 JA5NNS 559/559, DF3RU 559

- 559, G4ERG 539 - 559, JA6AHB 539 - 559 # 328 (new QTH). Uwe, does agree with rules of the Toplist counting small squares. RIG TS950S Digital, df9ln transv. incl. 2xMRF392 driver, PA YL1050 2.3KW out into 13m 7/8" + 4m RG218, preamp NE 75083 0,27dB bv design, ant 16x7,7wl 9bv. Danke für die infos UWE.

DK3FB, Ruediger, was quite active during the 1st leg of the ARRL contest. He found the conditions worse than normal. Compared to other SW's, signals of DL9KR and OH2PO were rather weak (abt. 52). He managed 11 QSO's, had 5 CWNRR's and heard 5 more with no try. Here is the list in detail: wkd: OH2PO, OZ4MM, DL9KR, DL1YMK, K1FO, N2IQU, DF3RU, DL9NDD, OE5JFL, N9AB and N4GJV. CWNRR: F5FEN, DL4MEA, DJ3FI, JL1ZCG, JA5OVU. Heard: DK3WG, DK6LN, HA1YA, G3LTF, ??1AW = RW1AW??. Ruediger had the following contacts during the second leg of the ARRL EME contest: DJ6MB, F5FLN, NC1I, DK3WG, KD4LT, G3SEK, K2UYH, K5GW, ON5OF and finally DL3EAG. He found conditions good inside Europe, but poor to JA. He ended up with 21 contacts in both legs. tnx fer info Rüdiger.

DL1DWI is qrv since 30.10.99 on EME. Gerhard has a 4x19el. (DK7ZB design) array. His first qso was with DF3RU and only 100w. He say it was a good feeling to hear the own echoes via telephone from Karl. Then he added a 200w PA (surplus) and worked 27/28.11.99 DL9KR, OH2PO, DF3RU, K1FO, NC1I, DL9NDD all with O/O, but it was a hard work with only 200w. Heard were OE5JFL, JL1ZCG, G3SEK, F5FEN, K0RZ, OZ4MM, W7CNK, PA3CSG, N2IQU, N9AB, K5GW. He had'nt copy any own echoes until now, but a 4x200w combined PA is under construction. rig 9BV peramp 0.5dB+ CF300, FT736R +DSP 59+, 200w direct at tower only 1m coax to feed, 4x19el. address Gerhard Meyer, Holbeinstr. 40/0204, D-01307 Dresden, tel ++49-351-4414562, at station ++49-35243-52571. vielen Dank für die infos Gerhard.

DL3EAG, reports ARRL I: I found the first night better than the second. Heard were many stations, but I could work only 14. I worked only 2 W's and no JA. OH2PO

(539/O), ON5OF (O/O) (#49), K1FO (539/549), DL9NDD (439/449), DL9KR (539/549), OZ4MM (539/549), DL1YMK (O/429) (#50), F5FEN (539/439), DF3RU (439/449), DL4MEA (O/M), OE5JFL (549/549), N9AB (O/M), F5FLN (O/O), OE5EYM (O/O). Interesting is that no JA was logged! Heard and CWNRR was JL1ZCG several times, but always no response (sigs were between O and 52!). ARRL II: had the following contacts: K2UYH, DJ6MB, G4ERG (#51), JA5OVU, JL1ZCG, K5GW, DK3FB. My score is 21*12 this year CWNRR: G3SEK, W7GBI (quite a long time), N4GJV 7M2PDT and JA5NNS. Heard were DL1YMK, DF3RU, N9AB (much louder than last SW, about 549 this time), F5FLN, OZ4MM (also much louder than in first leg), JH4JLV, OE5JFL (559 !), F5FEN, UT7Z (?). I had the same impression than Ruediger, Europe and US good, JA poor. Merry Christmas to all of you and happy new year. See you off the moon. tnx fer info Stephan

F1CH Jacques (JN23VF) reports ARRL (ops F1KA, F5IVP, F5SDD) 30/10/1999 DL9KR O/559, OH2PO O/559, OZ4MM O/449, DF3RU O/O, F5FEN O/449, K1FO O/449, 31/10/1999 DL9NDD 449/559, DL4MEA O/O, OE5EYM 559/O, N9AB O/O, 27/11/1999 G3SEK O/O, KD4LT 439/559, N2IQU 429/O, K2UYH O/559, 28/11/1999 JA5OVU 339/O OE5JFL 449/O, DK3WG O/O, K5GW O/O. 73's de Dave. F5SDD. <http://www.qsl.net/f5sdd/> <http://www.qsl.net/f5kdk/> tnx fer info

F6KHM, a new station, will be on for the next ARRL contest with : 4 * 8.5 BVO, 800W cavity with F6007 Thomson, preamp DXL 1503, TS 790e Kenwood, QTH : Brest IN78RJ, E-MAIL: F5TTU@LIBERTYSURF.FR. tnx fer info F5TTU Xavier

G3SEK reports in August 1999. My activity has been very sporadic this year, with a lot of interruptions due to other commitments. I wasn't able to be on the air on the Saturday morning of 7 August, and only worked W7CNK near to moonset. Sunday 8 August, worked JA6AHB 449/559 #, JA5OVU 559/559, VK4AFL O/O #, OZ6OL O/O #, G3HUL 449/449, K0RZ 449/449 in contest,

Lunar Weekend Calendar for 2000 by G3SEK

At 2400 Sat/ 0000 Sun	Declination (deg)	Signals (dB)	Sun offset (deg)	Sky temp (K,144/432MHz)	Comments
Jan-01/02	-12.7	-0.7	-52	457/29	Moon in south.
Jan-08/09	-17.8	-0.6	+25	375/20	Moon in south.
Jan-15/16**	11.0	0.8	+108	408/24	Day(PM).
Jan-22/23	14.5	0.5	-155	212/13	Night.
Jan-29/30	-15.0	-0.8	-72	499/29	Moon in south.
Feb-05/06	-15.8	-0.5	+5	369/20	Moon in south.
Feb-12/13**	14.0	0.8	+90	400/24	Day(PM).CONTEST
Feb-19/20	12.2	0.4	-175	225/14	Night.
Feb-26/27	-17.0	-0.8	-92	597/39	Moon in south.
Mar-04/05	-13.6	-0.4	-15	326/17	Moon in south.
Mar-11/12**	16.8	0.9	+73	433/27	Day(PM).
Mar-18/19	9.6	0.3	+164	235/15	Night. CONTEST
Mar-25/26	-18.7	-0.9	-112	805/39	Moon in south.
Apr-01/02	-11.3	-0.4	-34	280/17	Moon in south.
Apr-08/09**	19.2	0.9	+56	479/27	Day(PM). CONTEST
Apr-15/16	6.5	0.2	+146	254/15	Night.
Apr-22/23	-20.2	-0.9	-131	1355/166	Moon in south.
Apr-29/30	-8.9	-0.3	-54	278/19	Moon in south.
May-06/07**	20.7	1.0	+39	575/35	Day(PM).
May-13/14	3.0	0.1	+129	318/21	Night.
May-20/21	-21.2	-0.9	-150	3797/149	Moon in south.
May-27/28	-6.2	-0.2	-73	275/19	Moon in south.
Jun-03/04**	21.6	1.0	+21	541/29	Sun noise.
Jun-10/11	-0.5	0.0	+113	359/20	Moon in south.
Jun-17/18	-21.7	-0.9	-168	2227/149	Moon in south.
Jun-24/25	-3.2	-0.1	-91	282/20	Moon in south.
Jul-01/02	21.7	1.0	+3	sun/29	Sun noise.
Jul-08/09	-3.9	-0.1	+96	350/20	Moon in south.
Jul-15/16	-21.6	-0.9	+174	897/41	Moon in south.
Jul-22/23**	0.2	0.0	-108	308/19	Day(AM).
Jul-29/30	21.4	1.0	-16	345/20	Sun noise.
Aug-05/06	-7.2	-0.2	+78	378/23	Moon in south.
Aug-12/13	-21.1	-0.9	+156	533/41	Moon in south.
Aug-19/20	4.0	0.1	-125	225/20	Night.
Aug-26/27**	20.6	1.0	-34	254/14	Day(AM).
Sep-02/03	-10.2	-0.3	+59	418/26	Moon in south.
Sep-09/10	-20.1	-0.9	+137	401/24	Moon in south.
Sep-16/17	7.7	0.2	-141	357/22	Night.
Sep-23/24**	19.2	0.9	-51	218/14	Day(AM).
Oct-00/01	-12.9	-0.3	+40	453/29	Moon in south.
Oct-07/08	-18.8	-0.9	+118	375/20	Moon in south.
Oct-14/15	11.2	0.3	-159	406/24	Night.
Oct-21/22**	17.1	0.9	-68	210/13	Day(AM). (ARRL ???)
Oct-28/29	-15.4	-0.4	+20	489/29	Moon in south.
Nov-04/05	-17.3	-0.8	+98	371/20	Moon in south.
Nov-11/12	14.0	0.4	-176	416/24	Night.
Nov-18/19**	14.3	0.8	-85	218/14	Day(AM). (ARRL????)
Nov-25/26	-17.6	-0.5	+3	sun/39	Moon in south.
Dec-02/03	-15.3	-0.8	+77	332/17	Moon in south.
Dec-09/10**	16.4	0.5	+161	409/24	Night.
Dec-16/17	11.1	0.8	-103	235/14	Day(AM).
Dec-23/24	-19.6	-0.6	-19	796/39	Moon in south.
Dec-30/31	-12.9	-0.8	+57	280/17	Moon in south.

** = Sked weekends. Contest: Feb 12/13 ssb 23cm contest, DUBUS contest 2m/1296 march 18/19, 432 April 8/9

Sun Offset vs Time of Day for Visible Moon

DF3RU 559/449 and W7CNK 449/549. Also heard VK2BEK (abt 0300) and HG4I (abt 0900). Both stations were calling 1x1 CQs with good signals, but apparently not listening seriously for calls. That makes me think it's probably time to repeat the standard QSO procedure, BUT not the same old thing again. It really does need a new section on random CQs and QSOs. The GS35b amp is working well, giving a solid 1kW at the antenna. I have spent some time developing a "universal" control board for triode amps, and that should be ready to roll out Real Soon. 73 from Ian G3SEK

IK5WJD wkd: ARRL I : 31-10-99 DL4MEA #65 549/539, K1FO 549/449, OZ4MM 539/439, DF3RU O/O, OH2PO O/O, N9AB #66 O/O, N2IQU O/O, ARRL II 27.11.99 DL9NDD, DL9KR, KD4LT, K5GW, 28.11.99 NC1I, DK3WG, F5FLN, G3SEK, K0RZ, N4GJV, OE5JFL, for a total of 18x12 = 21600. I hope in the best for the next year 2000. 73 de Alex, IK5WJD.

OE5JFL reports I was QRV about 15 hours all together in both parts of the contest (30% of possible time). Because of QRL on Saturday I was not able to be on for that time, and I also preferred to have some hours of sleep. To stay up all the night is more difficult now than ten years ago, hi. Anyway, it was fun, and I managed to work 120 x 68 on 3 bands: 2 m: 19 x 13, 70cm: 55 x 27, 23cm: 46 x 28. The real highlight was a QSO with Jan, DL9KR, on 70cm. After I had worked him in the night with his usual outstanding signal (30dB in 100Hz bandwidth), I called him again some hours later, but this time **transmitting** with a **Dual-Dipole-Feed** antenna only (!) (8dBd/10dBd), which resulted in a O/O random QSO within 5 minutes. Normally I use this antenna (2 stacked dipoles in front of 0.8m x 0.8m mesh reflector) for adjusting preamps. This time I pointed it out of the shack window, TX line 4m H100 cable, HF400 Coax relay and 2SK571 preamp. On receive I could switch between the big dish and the 'baby' antenna. I could immediately hear my echos 5 to 7dB when receiving with the dish, and adjusted TX frequency exactly to the station DL9KR just worked. Jan was 30dB with the

dish, and still 10dB in the peak on the small antenna. On my first answer to his CQ he got FL only, then 2FL (similar to JFL), retuning my TX and a longer call resulted in 100% copy. Jan was not informed before about this test, so it was a real random QSO. There were no tropo conditions between us that time. (Doppler was 1kHz also, so not possible we mixed tropo and EME).

It was quite clear before on theory this should work, but it is another step to do it in reality. It was also interesting, that I could hear DL9NDD with the small antenna, although not 'O' copy. He is using 4 Yagis, and his signal is audible with a 8 dBd antenna via the moon. Quite fascinating! I was a little hectic during this QSO, so forgot to switch on the tape recorder. But I plan to record my own echos 10m dish <--> 8dBd antenna next perigee and upload the WAV files together with fotos to my web page. I made notes also during the contest about station's signal strength on 70cm and 23cm, and will send this list later. 73s Hannes OE5JFL)

OK1KIR : June 19 we wkd 4 new initials: JA5NNS, JA5AHB, OZ6OL and OE2UKL #339. On Aug 7: K5GW 569/559, RW1AW 439/449 #340, KB4CNI 449/449 #341, WE2Y O/O #342. Nil in skeds with UT3LL, VE6TA, KL7HFQ, AL7OB. Hrd: DL9KR, DL9NDD, K0RZ, W7GBI, WA9FWD. We are looking just for 6 states: AR, HI, KY, MO, UT, SC to finally complete 432 WAS. Could somebody help, hi ? tnx fer info

ON4KNG reports : ARRL My final score for the 70cm ARRL contest (mono operator) is: 43 x 23. My activity was low due to the wind moving the antenna and I am sorry for the stations that I lost. For the same reason, Marc- ON5RR, was not active on 23cm this last week-end. The multipliers were: DL, N2, OH, PA, K1, K0, OZ, OE, SM, K5, N4, F, N9, JA, G, HA, UA, EA, W7, ON, S52, VE, and K8 The initials are: OH2DG, DL1YMK, DL7APV, and K8UK #138. Heard: DL6WU, SM3AKW, WW2R, DJ6MB, KD4LT, JA5OVU and a lot of partial calls. That's all concerning the contest. On 23cm I have a 3.2m dish and I am looking for a PA. At this time I received some stations.

See <http://home.tvd.be/cr26061> . tnx fer info peter

PA0PLY (JO22) reports: Last month finally installed elevation capability for 4x 13el on 70cm. I know it is very poor but it will give me the challenge to get more experience on EME for 432MHz. Amplifier is K2RIW (1000Wts), 0.3dB NF. This station is at my home and also used for tropo. tnx fer info Jan.

432 & up NETnews

Preliminary High **scores** of the ARRL contest are 432 OH2PO 123x34, K1FO 112x35, DF3RU 103x?, N2IQU 101x36 and DL9KR 100x34, on 1296 K4QI 66x34, N2IQU 59x37, OZ4MM 60x28 and SM3ALKW 50x26

22 Aug Just a note to let every one know that a Big THANK YOU is in order for Mark N2IQU and Don W4RDI and all the speakers for a job well done at the first EME symposium in Syracuse. Not only was the conference very informational for the beginner, but plenty of good thoughts and discussions for the experienced ops. The food was GREAT and of course, I am still in awe of Marks Dish!!! Again Congrats .73's to all and see ya on the moon!! Tom WA8WZG www.wa8wzg.com. **W7CS**: still trying to recover from power hit. gear still down, still working on the remote site. and hopes to be back on 23cm in the next month or so. a bit depressed from all damage.

28/29 Aug G0RUZ: for WD5AGO. has 3.7mtr paraclype dish up and testing preamps. will try to get on for ARRL contest. will be back on EME on 2 meters, 70cm, and 23cm. 23cm will be the first band. sun noise on 23cm is 13.5. YD-1336 is power amp tube. not ready quite yet. optimizing feed. AGO preamps are doing well. now in a different QTH. Club call is GX4NOK. has a GS35 and 4x10 wavelength on 70cm. GX4NOK will be the callused during the ARRL contest on 23cm. Not too far (1093fr) from Leeds. Conrad has moved to a new neighborhood, and has had some local issues. looking forward to getting on 23cm and hopes to have 600w when finished. Has had a few moonset QSOs on 2 meters with one yagis.

PA0PLY Visit our exciting WEB site at www.COMTEST.NL I now have a privat email address: dj5mn@9a0tcp.ampr.org. Now I have two completely seperated 23cm-stations here: 1. 2 times 70 ele yagis, RS1064/1062-tube-PA, 0.36 dB NF preamp 2. 3 m dish, TH327-PA, 0.32 dB NF preamp 73 de Bernhard, DJ5MN

4 Sep. GM0ONN: on EME 23cm with 1.2 meter dish 230w.

SM4IVE: planning to be back on EME sometime.

VE4MA: been very busy still working on 6cm and 24ghz equipment. had eyeball with K0RZ & WD4MUO while in Denver. discussing use of PSK on EME.

W6HD: report on Hoppy still in hospital, but knows the 5 meter dish is up and running and happy about that.

11 Sep Am looking for info on where I could purchase a coaxial step attenuator suitable for 432Mhz. 73's, Trevor, **VK4AFL**. benton@acenet.net.au.

K0YW: Bruce is very busy acquiring equipment and materials to dust the moon with 1296Mhz RF radiation.

W4RDI: Don is still recovering form an electrical storm that destroyed this computer and tracking system, but hope to be QRV next SW

WA1JOF: Don is still working toward more power on 23cm before accepting any Skeds. Equipment is 4 X 55EL Loop Yagis, power level yet to be determined.looking for 250-300W when new tubes arrive.

18/19 Sep W7CS: Chuck reports his 1296 & 432 transceivers have been repaired since the lighting strike.but 144 unit beyond repair. Chuck also looking for feedback on preferred HF rig for IF Transverter system. **W7QX**: Jerry hopes to have Dish up on the mount today and hopefully running for the contest week-end. Jerry is reported to be detectable on 23cm EME with single 21dbi Yagi and 110W at the feed. **K8UC**: Curt is a new comer from West Virginia and hopes to be running on 70 and/or 23cm by contest time. Curt is looking for a 23cm Amp that can nicely be driven with

EUROPEAN WORLDWIDE EME CONTEST 2000 sponsored by REF and DUBUS

The EU WW EME contest is intended to encourage worldwide activity on moonbounce.

Multipliers are DXCC countries plus *** ALL W/VK/VE States***

This gives equal chances for stations from North America, Europe and Oceania.

The rules reward RANDOM QSOs, but do not penalize skeds on 2.3 GHz or above.

1. Contest Dates & Periods

The contest happens during two full weekends : 144 and 1296 MHz on the March weekend, and 432, 23200MHz and above on the April weekend.

Each weekend of the contest begins at 00:00 UTC on Saturday and ends at 24:00 on Sunday.

2. Bands and dates

First weekend : 144MHz and 1296MHz 18/19 March 2000

Second weekend 432MHz, 2300MHz and above 08/09 April 2000

(Note - only 3 weeks between the two weekends! 18/19 March is chosen particularly for low sky noise on 144MHz, 08/09 April is chosen for perigee and longer operating time.)

3. Sections

QRP 144MHz < 100kW EIRP

432MHz < 400kW EIRP

1296MHz < 600kW EIRP

>=2300MHz no separate QRP/QRO categories.

QRO On 144, 432 and 1296MHz, stations with EIRP equal to or greater than stated above.

PRONon amateur equipment or antenna. Pro stations will have scores listed separately.

There are no separate multi-operator classes. Multi operator and QRO stations will be highlighted in the general classifications.

4. Exchange

Callsigns + TMO/RST +R

5. Scoring

100 points for each complete random QSO.

10 points for each complete sked QSO on bands below 2.3GHz.

100 points for each complete sked QSO on 2.3GHz or higher bands.

6. Multipliers

Each DXCC country (except W/VE/VK), or EACH INDIVIDUAL Stae worked in W/VE/VK. Multipliers count only if worked by RANDOM (except on 2.3GHz or above). States and provinces can be determined after the contest using address lists in recent Newsletters or in DUBUS.

7. Total scores

Single band entries: Sum of points multiplied by sum of multipliers. here will be one QRP winner and one QRO winner on each band.

Multiband entries: (Total sum of points on all bands) * (total sum of multipliers on all bands)

There will be one QRP multiband winner and one QRO multiband winner.

Multiband stations will also be listed as an entry on each separate band worked, and can also win single-band awards.

10. Reporting

Copy of the log for each band with details of points, multipliers and total points.

The following information MUST also be included for each band:

1. Output power, transmit cable loss, antenna type and gain.

2. Working category: QRO/QRP - /multi operator
3. Name(s) of all List of operators
4. Locater/State

Other informations are welcome: Comments, conditions, grid locator, other station details, photographs, etc...

11. Awards

A certificate will be sent to each entry. All QRP/QRO band winners and QRP/QRO multiband winners will receive a trophy. In each section, the highest-scoring station in the southern hemisphere will receive a special certificate.

12. Logs

Log entries MUST be postmarked no later than 30 days after the end of the second weekend (i.e. in the mail or e-mail by 9 May 2000), to the following address: (Do "NOT" send logs to G3SEK, the old DUBUS Post and E-mail Add.)

Joachim Kraft, DL8HCZ, EME Contest, Grützmuehlenweg 23, 22339 Hamburg, Germany

You can also e-mail your log directly to : Dubus@t-online.de

All e-mail entries will be acknowledged within one week.

13. Referee

Responsible for rules and general questions is : Ian White G3SEK, 52 Abingdon Rd., Drayton, Abingdon, Oxon OX14 4HP, England (Tel.: ++44 1235-531559, E-Mail : G3SEK@ifwtech.demon.co.uk)

For REF: Patrick Magnin, F6HYE

For DUBUS: Rainer Bertelsmeier, DJ9BV

Referee: Ian White, G3SEK

approx. 10W on 23cm. Curt has HB'ed his 25' (7.6M) dish and looking forward to EME perhaps first on 70cm then 23cm??? Curt's E-mail address: <k8uc@wvadventures.net>.

W0GGM: John had nothing new to report except that it would be perhaps another year before he would be up and running again.

25/26 Sep K1FO: Steve reported working UA4API, UT3LL & UA3PTW. UA3PTW was an initial for Steve and which suggests this is possibly a new station on 70cm. Steve reported that polarity for these station was off approx. 30 degrees and that his own echoes were shifted approx. 90 degrees in polarity.

3 Oct VE1ALQ I had partial with Ivo, ZS6AXT on 5760Mhz. I sent him M's and he did hear me but one of us will have to change polarity. Ivo is Vertical, I am horizontal and there is little to no polarity change between us, so only a partial again. Darrell - VE1ALQ

HB9BBD: interesting weekend. lots of stations. 34 QSOs this weekend. lots of SSB signals. QSO with F1ANH/P but needs more

info on this station. Home page has been updated with more pictures and sound files. <http://www.hb9bbd.ch>.

PY5DZU will be in Switzerland for international Telecom conference. was testing 2 W7CNK preamps and are very good and relative measurements indicate those tested at Washington, DC (PYP) and CNK are very close but CNK much lighter and cost is far less than the cavity preamps.

N2HLA: 8xfo22 and 1.5kw and will be on for contest.

CT1DMK: yesterday on 6cm ZS6AXT new init and new country. still looking for common window with W7CNK. maybe next week. nothing on 10ghz due to bad wx. still working on 24ghz which is NOT a "piece of cake".

AA5C: bad luck early Saturday morning but then did work init 21 I5PPE on 10ghz on Sunday morning.

17 Oct KA0RYT: not much going on. working on the house. will try to go to KB0VUK

4x27FO but same grid. will keep us posted, looking for email for JA6AHB <pxi12443@niftyserve.or.jp>.

CT1DMK: looking for VE4MA. will make aluminum blocks for coaxial to waveguide transition. between \$30 and \$40 excluding connector. needs to make at least 10 units, but will like to make more to keep price down. results as good as top quality transistors. VE1ALQ mailing address: VE1ALQ FN65VH, Darrell G. Ward, 3 Windsong Ct, Grand Bay-Westfield, E5K 2S5, 1-506-738-2734. **DL9KR:** not too much UA3PTW KO93 will be on with more power. RV4AQ has 4 yagis 800w plans to be on.

23 Oct N7AM: here am finishing up a five and one half year project for eme, using a 30 ft dish on a 15 ft. tower with az and el for 1296 and 432 mhz have a nice kenwood ts-790a for 144, 432, and 1296. ten years ago i was on 144 mhz with a 4 yagi station with 1500 watts. now with a dish, i hope to learn about 432 and 1296 sure looking forward to getting this 1296 amp and 432 amp into the diagonal waveguide feed to work you guys sure getting tired of engineering and building really looking forward to eme operating on cw right now it looks like spring time will be in order for the dish try out. jack N7AM

30/31 Oct 9H1ES: My new feed system seem that are working well. now I have 23cm same parameters as before with the addition of the 10ghz including psu.all install into the feed. i hope that they will stay at least for one winter. 10ghz info.pwr., 23watts. feed, linear pyramid horn horz/vert, motorized transverter ssb electronica (germany) i.f unit 2m down east transverter/kenwood ts850 a.f filter by time-wave what i am worried is that i have very few sun noise compared with the 23cm. please i need to make some test with some body as to make sure if the system is ok. we meet on sat. afternoon on h.f. best regards fortunato 9h1es.

K4AR QRV on 432. K4AR is now fully qrv on 432 eme. I put the preamp on the mast over the weekend, seems to be working fine. I will be active during the Contest, looking for randomness and calling CQ. I do not wish to make

schedules for the October session, but will accept schedules in November session of Contest. 73, Bert K4AR 1.5kw, 8x432-9w Horiz.,ts850/DEM, ATF10736, 0.5db line loss. EM76 in Tennessee.

W6DF call change Hello, WA6BJE Jim Day is now W6DF+++ e-mail w6df@aol.com 73s Jim.

F5KDK will be QRV 432Mhz EME on 30/31 Oct 1999. (4 x 26 elts BV + 600W TH- 6007, MGF1303) to F1CH place with F1CH Jack, F1KA J.Michel, F5IVP Michel & F5SDD Dave! Best 73's de F5SDD Dave. <http://www.qsl.net/f5sdd/>

DJ5MN despite bad weather (very wet fog) and a never ever visible moon the first night (30.Oct 0-8 UTC) was not too bad. I worked HB9BBD, JA6CZD #, EA3UM, OE5EYM #, F5PAU #, ON5RR, S59DCD, DF4PV #, G3LTF, OZ6OL #, DL0SHF #, CT1DMK, K5JL, OE9ERC, N21QU, KD4LT, VE1ALQ, K2UYH, HB9SV all on 23cm random. Only heard were OK1DFC, DH9FAG and OH2AXH. I also was called by 2 stations, from which I could not get the call.my 3m dish seems to be too small when conditions are not too good.sorry! 23cm-rig: 3m-dish, 0.36 f/D, TH327-PA at 5 kV, FHX35LG-preamp **W0KJY:** low activity on both bands.

This is Tom **KC0W** in Minnesota. I'm putting together a 432 EME setup & would like to know what you recommend for yagi antennas on 432 EME. Tom kc0w.

VE1ALQ I had to quit because of very high winds this AM. Total for this half of the contest are as follows: 42 on 23cm X 33 Multipliers (quit because of high winds) 2 Initials 2 on 6cm X 2 Multipliers (quit because of high winds) 0 Initials 2 on 70cm (sked requests by other party) X 2 Multipliers (yesterday Oct 30, NO winds) 1 Initial Missed several on 23cm this AM because of high winds, sorry about that folks. Had a great time and hope all did, hoping the snow stays away for the last half I am off to bed until tomorrow morning, CU all L. Thanks & Best 73, Darrell.

G3SEK Getting ready for the contest was a real skin-of-teeth job - replaced the antenna

OE5JFL's latest EME antenna 70cm Dual Dipole + Reflector 8 dBd



OE5JFL 70cm EME with only Dipol & reflector !! see report

changeover relay and all the other N stuff with 7/16 DIN connectors, and was just finished by Friday evening. No time to test before moonrise, but finished the weekend with 48x23, a bit below my previous best, but not bad considering the level of activity. As usual there were lots of stations working the big guns who were good copy here, but if they don't tune for the weaker CQs, there's no other way to get to them. If it all holds together, I'll be back for December and hoping for a lot more activity! 73 from Ian G3SEK.

Please note my new e-mail adress 73 de Anders, **LA8LF** My homepage: www.qsl.net/la8lf E-mail: milcom@c2i.net.

ON5OF Hello! My score is 27 contacts and 17 multipliers so far. ew PA with G17 as driver and GS35B gives 1,2 KW out with 20 W in, but still bad efficiency, only 40 % (3300 W in and 1200 out) It only blows the fuses (25A) of the shack it was QRT for a few hours (100 w out with 25 W in, we changed the output cable setup, it was 75 ohm, mismatch,)73

Dirk. **K3HZO** We worked 28 QSO's with 18 multipliers. Five new initials: EA3UM, DJ5MN, WA9OUU, S59DCD and WA6KBL. Thanks and 73, Harry.

HP3XUG Hi Joe, tried like mad to get you, or someone's attention this AM, but QRM too high for you. Did get the system working again, but nil echos this AM. Nice QSOs with N21QU and K5GW and tried K1FO, but moon was going behind hill at 11⁰⁰, and surprised heard him at all. Water in connector was problem, shoyuld have thought of that to start with. Sun was out this AM and managed to run a bunch of tests on everything. Then just about 1530Z, here come the rains big time, so had some rain static on 432 even. I can't say as the RX is up to par, but will do some serious cleaning and adjusting up to next month's Test. I'm supposed to go to the Darien end of the month, but already told them I must be back prior to that weekend. No fishing/diving trips either! Warm 73 for now Louis **HP3XUG/HO3A/KG6UH**

7 Nov JA6AHB I worked VE1ALQ, EA3DXU, G3LTF in the sked and DK3WG, K0RZ, N9AB, OE5EYM, ON5OF, on random. I will not take sked in the EME contest on Nov.sw, and will list up again for sked on Dec.sw. sorry. many thanks. de T.Tshio.

DL9NDD 70CM EME 1 Part I Finished the 1 test weekend 79 x 30 and missed many big guns. Condx wars ok, activity very poor. gl see you 73' de Günther DL9NDD. **DK3WG** reports: **RW1AW** wkd On 70cm with DL1YMK, UA3PTW, N21QU, OH2PO, K5GW, AL7OB, G3SEK, F5FEN, ON4KNG and JL1ZCG #54. **UA3PTW** wkd On 70cm OH2PO, DK3WG, K5GW, OZ4MM, DL9NDD, OE5JFL, NC1I, N9AB, OE5EYM and F5FEN #15. **UT5EC** wkd On 70 cm this...W7CNK, DL4MEA, G4ALH and DJ3FI #108. **DK3WG** wkd On 70cm UA3PTW, DL1YMK, W7SZ and DJ3FI #357. **F5FLN**: 46x22... 9 inits.. F1FEN is NOW F5FEN.. !!! Now 93 initials. **DL9KR**: who is F6KHM ?? looking for info on new JA stations JA8IW, JR4IUH NOW AT 723 INITS. **SM4IVE**: maybe will put up 4 yagis for contest time permitting. **VE4MA**: sent ZS6AXT a note to get on 5.7 before the next contest weekend.. Barry tried to get on 5.7ghz the second day of contest, but then discovered he was xmitting into the dummy load instead of the antenna. will be on 5 bands and jumping around. **N4GJV**: was on last weekend for the first time in many months.. would like to arrange skeds with the following stations: **RW1AW**, **AL7OB**, **K4AR**, **WB3FAA** (N3FA) looking for the updated version of the **VK3UM** thought condx last weekend were not too good during the JA window were poor. **SM2CEW**: reports that Doug, **VK3UM**, is in hospital recovering from a stroke.. He is doing well and expects to be back in full swing by the end of the year. Prediction is for full recovery, Peter is in constant contact with Doug and his wife, Bev. **DK3WG**: missing QSL from N2HLT (2 Jan 1999), K5GW (25 May 1996), N6OVP (27 Mar 1993) W0RRY/5 (22 Nov 1986) 31x? W7SZ was a new one. Jurgen does post info from the Russian boys on MOON NET. **UA3PTW** has 15 inits 9 during contest 250w and hopes to have 500w +. **RW1AW** lot of 70 cm QSO. **DL9NDD**: worked 79x30 first weekend of contest.. **DK0MM** a

club station will be QRV 500w and 4x 10 lambda yagis JN59. **K5WXN**: good to Europe condx to JA were not too good on Friday night and only fair on Saturday night.. could hear others working JAs but Dan not hearing the JAs well. **SM4IVE**: was on 70cm from club station, but it did not work to well. **DL9KR**: FN21bg for N3FA. did not work any JAs on Sunday moonrise still 86x32 worked VE1ZJ during JA window az at 118 for Jan, heard AL7OB. **DF3RU**: 73x31 on 70cm.

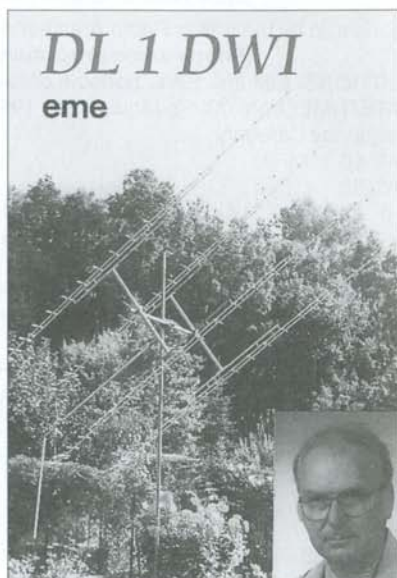
14 Nov My new e-mail address: **rw3bp@co.ru** Now I am finishing preparations for my first tests on 13cm EME. Hope will be ready to the second part of ARRL may be week-end before it. I can work only in split mode: TX on 2424 MHz, RX on 2304 (2320, 2424)MHz. I still use 1.65m dish. TX - 120W (GS9B), RX - NE324. 73, Sergei RW3BP. **WA8WZG**: have acquired a 10 meter dish will go look at it soon. **F5FLN**: F6KHM is a club station.. West of Fr.. 4xbv ant 800w had problems during the contest with HV. Xavier is operator F5TTU home call IN78. **F6KHM**: 42x25 for contest.. see above.

25 Nov VK3UM Hi Joe and All EME's Returned home from hospital yesterday. Won't be climbing any towers for a little while! Frustrating looking at the 10M dish outside basically awaiting the feed system but will get back to it as soon as possible... believe me. Totally retired now and Bev and the "Vet" has ordered me not to leave the shack etc.. This can't last for long! Thanks to all those that phoned called etc... I am extremely embarrassed by all the attention I have received. Thanks so much. Note home e-mail address now **likaluna@ycs.com.au** "I will return" (to EME) soon. Cheers Doug (**VK3UM**). **ON6JY** I am presently trying to come back on EME since a long time. At home, I now have a concrete base installed. I start building a small strong tower dedicated only to EME for a large dish and, after that, an aerial will follow! All the best to you and 73's QRO. Luc

28 Nov KB0VUK Hello, I worked OH3PO (559,559 first call) and DL9NDD (559,00) last night to bring my score to 6x5. I called (only called loud stations 559+) NC1I, N21QU, K5GW, DL4MEA, F5FLN, DF3RU (he faded,

but I thought he came back?), The only letters they seem to know are Q,R and Z :), I heard, N9AB, KD4LT, DL9KR, G3SEK, OZ4MM, DJ6MB, K2UYH, W7G(BI?), KA0RYT (on tropo too), I didn't hear any EU stations until after 0500z or so, is that due to, faraday and me having only horizontal polarization? I thought polarity, switching/rotation was more common on 432? I'll be on again tonight (28th) so LISTEN HARDER for my 150 watts. 73 Matt KB0VUK EN34pk, 4*27el FO, RYT preamp. **W6TE** That's the new call for WA6YDI. (8 xM2 99wl??) and LA-70B amp. Don't know if he's really on yet, is supposed to be QRV though. Steve **WW2R** friday night/saturday morning condx awful for first 3 hours from moonrise...n2iqu, dl9kr, k1fo, df3ru all huge signal but not even a qrz when i called with full legal output! then they got weaker and things started to happen, worked 0618 dl9kr, 0637 n2iqu, 0700 g3sek on a sked (dxcc#9), he was huge for 1st period then his sigs went down and became a struggle to complete, 0742, df3ru, 0900 f5fln for dxcc#10, 0942 OZ4MM. cwnr dl9nnd, dl4mea k1fo k0rz, w7sz heard wa4njp, w0kij, oh2po, w7gbi (loud sigs but not enough to overcome "sprog" on 432.005!) hope tonight is better! dave ww2r **F5HRY** report I spent a little while on 432 EME this week end. I was the first time since ARRL 1997. Nothing special but still my (...) local QRM from the radio localization system on Orly Airport. I am only 5 km away from it. It is nearly impossible to get through. I worked OH2PO, N9AB, K1FO, DL9KR and K5GW. Please note (and TX to Jan DL9KR) that F5KKD is a club station in JN18 (4x26 and 600W). F5PMB, F6GYH, and possibly F4BRC are the operators. Thus, even if they did TX with their own calls, it is definitely the same station! Vy 73's de Hervé F5HRY.

HP3XUG : Well, it's obviously time to get this system totally apart and re-furbished. When you can't raise DL9KR for over 2 hrs, it ain't working!! Did QSO N9AB yesterday, after the note to you. Last eve K1FO and OZ4MM, so only able to get to big guys would tell something too. Own echos weren't too bad tho!? Heard/called many time DL9NDD, DF3RU, DL4ZA, DL9KR, and a few others too. This poor showing of 5 QSOs is an all-time low!



DL1DWI 4x19el (DK7ZB) 432 MHz

'Nuff sed on the system's low performance! I'll hold off until after Dec to take array down, to try once more with AL7OB. Won't have a lot of time, as have to do a lot of study effort to pass the CG exams in Feb & hamming must take a back seat for a while. 73 de Louis HP3XUG/HO3A/KG6UH. **KD4LT**: relim count 70cm=36x21 .. 6 new inits.. #330, 23cm 30x23 and 7 new inits to #89. **W2UHI**: 52X? ON 23CM. 4 new initials.. WA6KBL, WA4OFS, W1QC, F6HYE for 129 inits on 23cm. **K3HZO**: 40x24 3 inits, JA8ERE, JA6CZD, DH9FAG nil from 9H1ES. **W7SZ**: 40x32 total. 16x13 on 23cm, 23x18 on 70cm .6 inits on 23cm and 14 inits on 70cm. **N2IQU**: about to pack it in. prelim.101x36 on 70cm, 59x27 on 23cm looking for W1QC ..Broke a million points.. EME was slow last night. **WW2R**: 12x?, K0RZ 5th station to work Dave from 3 different grids. **K2DH**: 50x28 for the contest most this weekend.. 5 inits .. IK2MMB, W1QC, WA6KBL, W7QX, W4AD, JF3HUC

WORLD WIDE EME MARATHON 1999

Sponsored by the Italian Radio Amateur Association - A. R. I. -

(I hope same procedure in 2000 APV)

SECTIONS: OM and SWL, portable or fixed station.

DATE/TIME: from 0000z January 1st, 1999 to 2400z December 31st, 1999.

Frequency Category

VHF 50 MHz

SWL 50 "

VHF 144 " 1A) QRO (erp pwr equal or more than 100 KW).

VHF 144 " 2A) QRP (erp pwr below 100 Kw or 1 to 4 antennas).

SWL 144 " 3A)

UHF 432 " 1B) QRO (>50 DBW ERP)

UHF 432 " 2B) QRP (<50 DBW ERP)

SWL 432 " 3B)

SHF 1296 " 1C) QRO (>60 DBW ERP)

SHF 1296 " 2C) QRP (<60 DBW ERP)

SWL 1296 " 3C)

SHF 2304 "

SWL 2304 "

SHF 5760 "

SWL 5760 "

SHF 10450 "

SWL 10450 "

(If you don't SPECIFY the category you will be assigned to the QRO category)

The same station cannot be worked more than once per day, but it can be worked in the following days.

VALID QSOs: 2way EME CW/SSB.

SWL: in this category are admitted also OM stations (licensed radio amateurs) but only SWL and not transmitting.

EXCHANGE: callsigns and RST or TMO.

SCORING: 100 points per QSO multiplied by the total number of DXCC countries PLUS 1 (your country is valid for the computation). EXAMPLE: 20 QSOs and 5 DXCC countries + 1 means 12000 points. $(20 * 100) * (5 + 1) = 12000$

PRIZE: the first 3 OM and SWL of each band and category.

ENTRIES: postmarked no later than January 31st, 2000 to:

IW0BET GIOVANNI ZANGARA

P.O. BOX 36

00100 ROMA CENTRO ITALIA

E-mail iw0bet@amsat.org

Packet iw0bet@ik0usa.ilaz.ita.eu

EME MARATHON A.R.I. MANAGER 73' de IW0BET John

web <http://web.tiscalinet.it/iw0bet> (iwoscarbet)

called for a long time no response. **VE6TA:** 38x20 on 70cm. about 20 inits 17x12 on 23cm. **K0RZ:** 77x29. called WW2R several times. **DF3RU:** 103x? on 70cm, 9x? on 23cm. **DK3WG:** 50x24 on 70cm, 39x24 on 2 meters. **DL9KR:** who is F6GWU, JH0WJF a new one..

DK0MM, DL1DWI, DM2AFN, DH5FS need info ON these a new one PA3DYS 123x35 at this time .. needs to check out smae station, different operators (callsigns), needs K4AR address. **UA4API:** nil VE6TA F5FLN PA3CSG. nil from DL4MEA. F5FEN &

G3SEK complete. **SM4IVE: K4AR:** Hubert Y Rollend Jr, 1620 Hidden Hills Drive, Clinton, TN 37716, EM76vc, worked 11x8 and heard many more.. working with small yagis is much different. **ON4ANT:** Looking for info on 70cm cavity amplifier preferably Russian tube like GS23b or GS35b. on4ant@hotmail.com. **DJ5MN:** worked some new ones 42x23 QSOs. **F5FLN:** will check on F6GWU Nil from UA4API & RV4AQ, 66X26 has a problem with antennas. **KA0RYT:** 28x18 ON 70cm

4/5 Dec Note that my new E-mail address is: peter.nagy@tvd.be

<http://home.tvd.be/cr26061>, some pictures from EME's at Mannheim (Weinheim) sept.199 are on:

<http://home.tvd.be/cr26061/weinheim99.html>

73's de peter - **on4kng**. Just to inform that I am available for skeds the 18/19 dec SW. I can be QRV both days after 22.00 UTC to moonset. rig: 8877 (0.9 - 1KW) 2 x 28 el M2 9w/ 73 ! Andrea **IK5QLO**. **DL9KR:** some duplicate callsigns are : F5KKD JN18 new club station.. these callsigns were used from the club station F5PMB, F6GPU, F6GYH, DL1DWI had multiple calls as well DH5FS & DM2AFN, DL4DTI, 118X35 with these corrections. **W7SZ:** 70cm 23x18 14 inits. 23cm 17x14 and 6 inits.. will have 6 tube amp running in about a week **K5WXN:** 44x21 during the contest.. worked 6 inits. **K0RZ:** contest 78x30.. 6 inits on second weekend.. Bill has converted Dubus dir to work with Realtrak ver 9 or so.. (Pre Nova version) 2 files are available. **VE6JW** My old email address with Compuserve will be shut down shortly. From now on please use the following address: ve6jw@compusmart.ab.ca found conditions on 2nd part very good, activity very low ! I ended with 108 X 34 and made following new initials RV4AQ, K4AR, PA3DZL, KB0VUK, DK0MM, OM1TL, JA8IAD, JR4IUH, DL1DWI, KJ7F, F5KKD, bring me to 316 # thanks all stations for all Qso in the last 10 Years, in Nov.1989 My 1st Qso with DF3RU. 73' gl Günther **DL9NDD**. First time out on 432 eme. Worked K5GW and N2IQU. I heard about five other station, but not well enough to call. That was Friday night, Sat. almost nothing. I am running 500w out, .22db nf, and 4x19elRIW's. I am interested in getting four 25el K1FO's if

anyone out there has a quad of them for sale. I will be on the next eme weekend and hope to work more stations. 73, Doug **K6JEY** DM03. **F5KKD** again, From: F5HRY Hello, I had a recent chat on 2m with F5PMB and he confirmed the following info : F5KKD is the "official" call. Operators and other transmitted calls were F5PMB, F6GYH, F4BRC and F6GPU. Thus the correct call for DL9KR was GPU instead of GWU ! I told them this was not a normal behaviour, especially during a contest Hope I have been understood. Vy 73's de Herve F5HRY

11/12 Dec OE5JFL Just for fun I made notes about the signal strength of stations I worked in the EME contest. My antenna is a 10m dish, RX bandwidth was 100Hz. I took the mean value of the three highest peaks during each QSO. In the case of mixed polarity on 70cm (same strength H/V), I added 3dB. There was no wind during my activity, so I could always position my antenna exactly to the moon. My apologize if somebody feels his call is not listed high enough in the dB scale. In that case be sure it was just conditions or misreading on MY side :-). Well, there is of course always an up and down of some dB, but I think there were no big changes in conditions during whole contest time on 70cm (I can switch polarity) and 23cm. On 2m it was much more different, so I did not make notes/list for that band. For comparisons: 20dB in my receiver needs around 500kW EIRP on 70cm, and 800kW EIRP on 23cm (my system is not so good on that band) 73s Hannes (OE5JFL) j.fasching@eduhi.at, <http://www.qsl.net/oe5jfl>

OE5JFL's signal strength measured in ARRL II

70cm

30dB: DL9KR
28dB: OH2PO
26dB: DF3RU, OE5EYM
24dB: DL9NDD*, JL1ZCG
23dB: OZ4MM
22dB: DJ6MB, K1FO
21dB: N9AB, W7GBI
20dB: G3LTF, DL4MEA
19dB: ON4KNG
18dB: JA6AHB, G3SEK, K0RZ
17dB: HA1YA, DL6WU, 7M2PDT, ON5OF

16dB: JH4JLV, K5WXN, JH0WJF, VE6TA
 15dB: JA5NNS, JA2TY, OZ6OL, K8ISK, OE3JPC,
 DL7APV, IK5WJB,
 14dB: DL1YMK, UT5EC, JS3SIM, W7SZ, G4ERG
 13dB: EA3DXU, S51ZO, RW1AW
 12dB: DL3EAG, DK3FB, VE1ZJ, G4ALH, IK5QLO
 11dB: F1CH, WB0GGM
 10dB: SK4BX, YO2IS, JJ1NNJ
 9dB: JA3SGR, W2WD, G4RGK
 7dB: UA3PTW, DK0MM

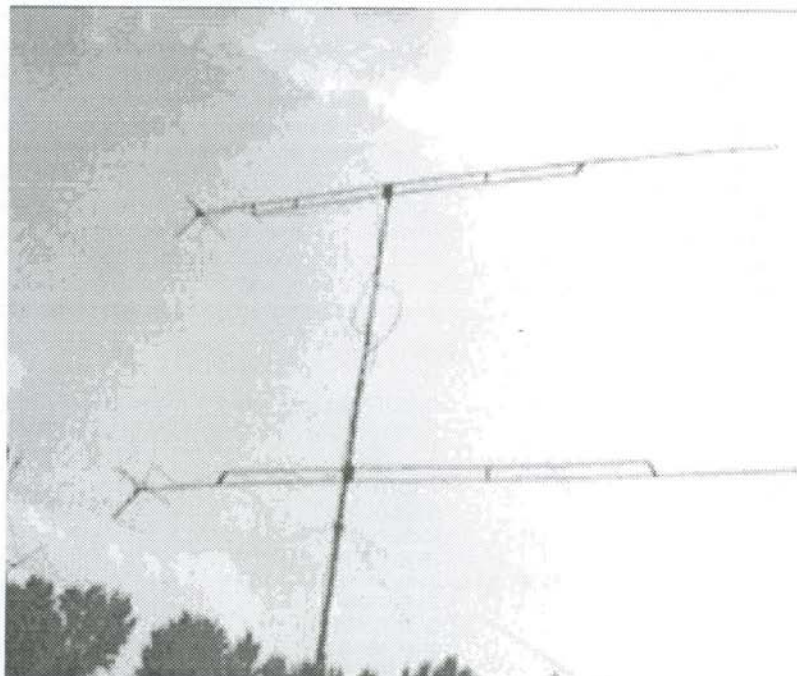
23cm

32dB: HB9BBD, HB9SV
 30dB: OE9ERC, K5JL
 28dB: F5PAU, OZ4MM
 27dB: OH2AXH, VE1ALQ, SM3AKW
 26dB: OE5EYM
 24dB: JA6CZD, EA3UM, K4QI, K2DH
 23dB: G3LTF, DD1XF, K2UYH
 22dB: ZS6AXT, WA9OUU, W5LUA
 21dB: JH5LUZ, DJ5MN**, SM2CEW, HB9BHU,
 F5AQC
 20dB: OK1DFC, VK5MC, W2UHI, CT1DMK, ON5RR
 19dB: OZ6OL, S59DCD, IK2MMB, W3XS
 18dB: F1ANH***, OH2DG, VE6TA
 17dB: VE1ZJ

16dB: JA8IAD, K3HZO, W7SZ
 15dB: JA8ERE
 14dB: WD5AGO, WA4OFS
 13dB: JA4BLC
 11dB: HA5SHF
 * 4 Yagis ** 3m dish *** 1.8m dish

RW1AW Had new on 70cm : YO2IS, N4GJV, K5WXN, NC1I, G4ERG, DJ6MB, HA1YA and IZ5EME. contest 25 QSO - 70cm **UA4API** On 70cm glad to work K0RZ, N9AB, F5FLN and DL7APV(?). -contest: 13 QSO. **UA9FAD** On 70cm he added EA3DXU, W6TE and VE6TA. 10 QSO x 8 Multi. **DK3WG** wkd RV4AQ, JH0WJF, F1CH and W8MQW #362. 50 QSO x 24 Multi.

VE6TA: will be on 70cm for the next couple months, **N2IQU**: survived gusting winds yesterday.. look on www.kb2ah.com/ for pictures of new tower. **CT1DMK**: not much going on still QRV 70cm wx is a bother right now and will not be changing feeds unless something very special comes up. **WB0GGM**: 18x13 on



OM9M 2x17el F9FT 2m (exp.)

70cm would have been higher, if John had not fallen asleep. worked about 5 new inits.. will take skeds on next 2 weekends. **KD5FZX** Please let everybody know that I will not be QRV on 23cm EME for a while. I am moving to a new QTH that happens to give me a MUCH bigger EME window. I will check in again after relocating my equipment which will take 6-8 weeks. 73, Merry Christmas, Happy New Y2K and good reflections to everybody. Mats - **KD5FZX** - (SM6IKY) **DJ9YW**: is back on EME now on 23cm. He has been in hospital. **VE4MA**: still playing with 24ghz LOs tried to update computer with disastrous results.

19 Dec This year see the first **full moon** to occur on the **winter solstice**, Dec. 22, commonly called the first day of winter, in many years. Since a full moon on the winter solstice occurred in **conjunction** with a lunar perigee (point in the moon's orbit that is closest to Earth) The moon will appear about 14% larger than it does at apogee (the point in it's elliptical orbit that is farthest from the Earth) since the Earth is also several million miles closer to the sun at this time of the year than in the summer, sunlight striking the moon is about 7% stronger making it brighter. Also, this will be the closest perigee of the Moon of the year since the moon's orbit is constantly deforming. If the weather is clear and there is a snow cover where you live, it is believed that even car headlights will be superfluous. Our ancestors 133 years ago saw this. Our descendants 100 or so years from now will see this again. **VE6NA** new on 23cm Bryan Rhyason 12' dish and 200 watts. AGO pre-amp and **VE4MA** feed Tel 403-281-5379, e-mail (rhyasonb@cadvision.com) (**VE6NA**)

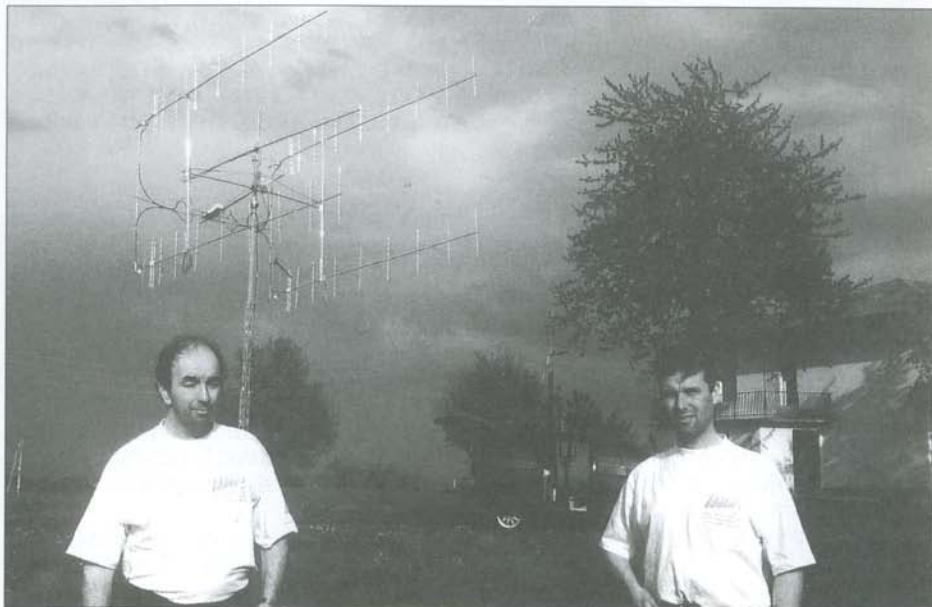
1296 MHz

F5PAU report for the arrl eme contest: F1ANH/P #112, JA6CZD, EA3UM, JH5LUZ, HB9BBD, OK1DFC, OE5EYM, OZ6OL, ON5RR, DJ5MN #113, S59DCD, DH9FAG, SM3AKW, G3LTF, DF4PV, VE1ALQ, CT1DMK, K3HZO, KD4LT, W3XS, WA9OUU #114, OE9ERC, W2UHL, DLOSHF, K5JL, K2UYH, PA3CSG, OH2AXH, N2IQU, DD1XF, OE5JFL, OH2DG, OZ4MM, K2DH, HB9SV,

K4QI, VE1ZJ, WA6KBL #115, HB9BHU, VE6TA, F6CGJ, SM2CEW, DF9QX, IK2MMB #116, SV1OE #117/DXCC, W0KJY #118, JA8IAD #119, JA8ERE #120, F5AQC, G3LQR, DL4YAO #121, WA0FWD, W5LUA, W4OFS. Total: 54 qso -31 multi .10 #. 1 dxcc. txn fer info Francis

HA5SHF reports wk: 11.07.99 EA6ADW 559/339, OZ4MM 559/429, G4DZU "M"/nil SKED, Aug. We was on holiday. 04.09. ZS6AXT "O"/"O", DD1XF "O"/"O", 05.09. HB9SV 579/559, 05.09. OZ4MM 569/429. Oct.2-3. We was not QRV (conflict with the IARU Region I UHF/SHF Contest). Oct.30-31 On the ARRL EME Contest we worked 9 QSO's. Unfortunately we was only few hours QRV. Oct 30.:HB9BBD, SM3AKW, OE9ERC, K5JL, Oct 31.:OH2AXH, HB9SV, VE1ALQ, K4QI, OE5JFL 73,Csaba HA5BGL

HB9BBD reports :The ARRL contest is over and quite a few initials could be added: F1ANH/P #131; W1ZX #132; WA6KBL #133; JA8IAD #134; HB9BCD #135; IK2MMB #136; K5GW #138; WA5OFS #139; DL4YAO #140; W4AD #141; W1QC #142. I found out after the contest, that I never counted W4RDI as #! That is why the #counter jumps from 136 to 138 in the listing above. My # count on 23cm is now at #142. All #initials and those stn who are not registered yet with a soundfile on my homepage may soon be able to playback their signal off the moon at: <http://www.hb9bbd.ch>. The conditions were difficult to judge - on the first contest weekend we got snow on the dish, the second weekend was very foggy at times. All equipment worked flawlessly and no technical action was needed. A few hours after the end of the contest the icy trees in the area caused power failure for several hours in a vast area here. Happily this was only after moonset! Participation seemed to me very poor though. On 23cm I guess that more than 150 stations could easily be worked. I have worked 66 only, missed a few who were there - but still - this is more than 20 less than last year. Some participants seemed to look in just to add some initials and left. CWNRR were: PA3CSG and the PA multiplier!, W7QX and nbr 7 multiplier, W0KJY and the 0 multiplier, DD1XF, OE9XXI, GM0ONN, 9H1ES. The



PA2CHR and PE1LWT at T98CHR/LWT

strongest stn on the band was probably HB9SV, peaking almost 40dB over noise. SV1OE was the most surprising qso – after many years of silence from Greece, hi. It is very disappointing that many countries where there is 23cm EME did not show up at all. It seems to me that staying up all night two full weekends long is not worth the result any more. I guess that I prefer the ordinary SW to hang around a bit and working some stations for fun without a hangover next day. I consider to change my contest concept for the future. My plan takes some time to get realized. Again, putting together an EME stn in a totally different way takes some efforts and primarily time. Bet, I will work far more than 100 stn in the ARRL contest 2001! I promise that I will wake-up you guys!

The log: Oct.3rd: 0002 JA6CZD 569/579, DJ5MN 56/57, SM3AKW 579/579, F1ANH/P # 549/549, OK1DFC 559/579, JH5LUZ 579/589, EA3UM 579/589, ON5RR 569/569,

F5PAU 579/579, DH9FAG 559/559, HA5SHF 549/579, OE5EYM 589/579, S59DCD 579/589, OZ6OL 559/579, DF4PV 579/589; 0317 VE1ALQ 589/579, CT1DMK 559/569, G3LTF 579/579, K3HZO 559/569, WA9OUU 569/599, N21QU 58/59, DL0SHF 58/59, W2UHI 579/579, KD4LT 58/58, W3XS 559/579, VE1ZJ 549/569, K9BCT 559/579, K5JL 599/599, WA1JOF 539/CWNR, K2UYH 569/579, HB9SV 599/599, W1ZX # 589/599, W5LUA 579/589, OH2AXH 589/589, WA6KBL # 569/589, OE9ERC 589/589, JA8IAD # 529/569, OE5JFL 589/589, VK5MC 569/559, on Oct 31st.: HB9BCD # 519/549, K2DH 559/589, VE6TA 559/579, WD5AGO 569/559, K4QI 579/579, F6CGJ 589/589, OZ4MM 579/579, OH2DG 569/579, on Nov 27th: DF9QX 559/579, IK2MMB # 559/579, SV1OE 559/559, W4RDI 579/579, W2UHI 589/599, K5GW # 529/O, WA5OFS # 539/559, G4DZU 559/579, DH9FAG 559/599, OE5JFL 589/589, JA8IAD 549/579, DL4YAO 559/559, ZS6AXT

579/599, HB9BHU 569/569, JA8ERE 549/559, Nov.28th: JA6CZD 569/579, JH5LUZ 589/599, DF3RU 569/579, JA4BLC 519/579, G3LQR 579/579, F1AQC 559/559, W4AD #140 549/559, W1QC #141 579/339, WA9FWD 559/569, WA4NJP 319/559, OO, W6HD 579/579. My scoring is 67x29 for the ARRL contest 1999. Finally I found out that my VK3UM program is not millenium proof, hi. Happily I found a new version to download at VE1ALQ's homepage, with some improvements to the old version. Thanks to Doug and Darrell for this fine service!! Happy new year and the very best wishes to all of you and your families!! HB9BBD tnx fer info Dominique

OK1KIR wkd:Aug 8: OK1DFC 449/449, DJ5MN O/O #163, ST9DCD 539/539, OZ6OL 439/449, OH2AXH 559/559 (QRV on 6 cm), W2UHI 559/539, KD5FZX 549/529 #164, WA9FWD O/M #165 + WI for WAS 25. Nil in skeds with JF3HVC, RW3BP, IK2RTI, 9U1ES, LU6DW, WA9FWD. Hrd: HB9BBD, OH2DG, PA3CSG, PY5ZBU, VE1ALQ, ZS6AXT. tnx fer info

PA0PLY (JO22) Jan reports: For 1296MHz I started a project for a small mobile EME station to be used in BV land. Due to severe company problems in the beginning of the year this project was stopped. Now after getting away from all the "shit" I try to recover this work and proceed to finalize this job. The station is horn with complete transverter and amplifier mounted behind the horn. IF is 144MHz. I'm now working on the trx of DB6NT, but would appreciate more support in parts to finish this job. Sofar JA4BLC did support preamp and amplifier modules. I think this station could be used quite easy for portable use anywhere. (rare grids?). Maybe I'll release it for this as well when it is finished. Please note we had to scrap the 6m dish last year and currently not active on EME at all. 432MHz will be the first try again soon. My locator: JO22.



T98CHR/LWT: 4x BVO2-3w1 Crossed Yagi

2304/2320 MHz

OK1KIR : On July 10: NU7Z O/O with no rr.

RW3BP reports : This week realized my first EME QSO's on 13cm. Many thanks to AI W5LUA. My first QSOs on 3cm, 6cm and 13cm with him! (Also first from RA and former UA). So we scanned four bands including 23cm in project "four bands EME with 1.65m dish" hi. In ARRL contest only one easy QSO with Erich QE9ERC. Heard but not complete with ZS6AXT - because of hard wind in Ivo place. Rig: 1.65m offset dish, IMU horn with CP, 140W from water cooled GS9B, NE324 preamp. Az limits from 207 to moonset, EI no more than 42. Be ready to the second part of ARRL...may be week-end before it. I can work

only in split mode: TX on 2424 MHz, RX on 2304 (2320, 2424)MHz. I still use 1.65m dish. TX - 120W (GS9B), RX - NE324. 73, Sergei RW3BP KO85ws

5760 MHz

OK1KIR : wkd On July 11: W7CNK O/O #10. On July 19: VE1ALQ O/O #11. On July 20: LX1DB M/M #12 and 1-st LX-OK on 6 cm.

ZS6AXT reports : After some problems on the receive side with my 6cm equipment (strong image noise) I constructed few interdigital filters and the last one was good, giving me over 60 dB suppression of the image frequency with 0,8 dB insertion loss. It seems that 30-40dB image suppression of cup filters was not quite good enough. After installing it and retuning the preamps Moon noise was 1,1 dB. So we tried it with OE9ERC on 25. 9. and result was excellent with 559/549 reports. My own echoes were 529. This was in ideal conditions, visible Moon (I use here CCTV camera for accurate Moon tracking) and no wind. SSB did not work, due to the high frequency spreading effect I could not clarify Erich's signals, which were really strong. So here was first Af - Eu on 6cm and first ever 6cm QSO from Africa. On 2. October we tried it with CT1DMK and after few misunderstandings (both transmitting in same period) we made it with O/M reports. That was without visible Moon here, running 1 minute intervals so that Moon noise can be used for tracking and with some wind which did not help. Thus this QSO took quite a while to complete. (Plus two telephone calls). Next one was sked with OK1KIR on 9. October. This was a difficult one. Never mind that it was close to Moon apogee, they ran only 9W ! But we made it with M/M reports. All of the above contacts were done with vertical polarization. In all of these frequency spreading was high and any attempt to narrow the AF bandwidth resulted in degradation of signal strength. Tests with VE1ALQ and W7CNK were negative since they were horizontal and spatial offset was just few degrees. Thus I decided to change my polarization to horizontal. This change lowered my Moon noise to 0,7 dB and antenna sidelobes increased ! I must mention here that when I was building my dish, it was intended just for 23cm I never even dreamt about higher bands ! Problem is also with ground noise for lower elevation angles, never mind the lower gain. Since I could not find anything wrong in the preamps or connecting

SMA jumpers, it was left like that for coming skeds. My own echoes dropped to 519. On 20. 11. I had three skeds which proved that my receive side is acceptable. First with VE1ALQ was successful (549 / 439) after Darrell found me. I was still bit confused with the Doppler and we did not agree in advance where to tune the TX. Otherwise easy QSO. Next VE4MA, again, as soon as Barry found me, we made it (M / M) this time only. I did not have visible Moon and we were running 2,5 minute intervals. Moon was visible until about 30 minutes before skeds ! In both skeds there was virtually no frequency spreading, thus I could use my AF filter with 400Hz bandwidth. Even with 200Hz BW signals did not drop. Sked with W7CNK was not successful. On 22. 11. I had two skeds, both successful. First W5LUA was just piece of cake, QSO took only some 10 minutes (549 / 439) to complete, including all 73s etc. Next again with W7CNK was bit worse, our Moon window is very short due to the obstructions on Lucky's side. But as soon as his dish was only 50% screened I heard him and we made it in about 15 minutes of the window with O / O reports. Reports exchanged afterwards are 539 / 529. At the end I was copying him just 419 due to the high ground noise, my elevation was just few degrees. Again frequency spreading was negligible so that I could use my 400Hz AF filter. And this is a new world record with a distance of 14760 km. It is quite clear that the linear polarization as used today for 6cm (and also probably for 3cm) is not very practical. From the small research I found that a great majority of 6cm stations is for change to circular polarization. That would give the best results without fiddling with changes from vertical to horizontal and eliminate losses in the relay used by some for switching between both polarizations. In my opinion everybody would gain from this change. For myself - as soon as I will get the correct size of brass tubing, I will build the W2IMU feedhorn and fit it in the feed of my dish. GL to all and see you soon on 6cm! tnx fr info lvo

10368 MHz

IK5WJD reports: Last sunday 5 September, realize one's dream, of 15PPE and IK5WJD, born many years ago and become ripening in 1998 Paris EME Convention and we have gotted the firsts three 10 GHz EME QSO !! With a parabolic dish (ex GTE) and mechanic stuff built by 15PPE, much time spent together for some tropo test to tune and align two identical prototypes of DB6NT

transverter. Very big work by Pietro I5PPE around the TWT power supply, focalisation of feeder, tune and re-tune, sleepless nights, etc.

Some trip with portable dish all around Florence hilltops, to align some types of LNA, we reached just near the moonbeam. At last, we checked complete stuff by hearing our own clear moon echoes, in some different sky position, from 150 K to 30 K - with different background sky noise. Pietro I5PPE, preferred to utilize my call IK5WJD and myself as CW operator to attend to receive and transmit, instead of him which attended to VK3UM for moon tracking manually, this due to my previous 432 EME activity. Last week we decided, by MOON-NET Reflector, to invite the possible 10 GHz stations for a sked, by announcing our availability for sunday 5 September. We received immediate reply from PA3CSG, DL2LAC and W5LUA. with which we have gotted the firsts three 10 GHz EME QSO !! Log and reports: PA3CSG # 1 M/O, DL2LAC # 2 O/O, W5LUA # 3 O/54 very good report !! and very good sigs.

Technical data: *Location of dish - I5PPE home - JN53NS. *Parabolic Dish - 3 mt - f/D = 0,28, *Home-built transverter DB6NT - Dubus, *Output 200 mW for driving a Siemens TWT 18-20 Wout, *LNA PHEMT 36077 - about 1,2 db NF, *Moon noise - about 1 db, *AZ-EL tracking system - manual, *Video-camera + monitor, *VK3UM software, *Transverter, LNA and TWT + power supply placed in dish focus. ARRL EME contest, I worked 30-10-99 F6KX #5 O/O. best 73, de Alessandro IK5WJD & Pietro I5PPE.

PA0PLY (JO22) reports : still building the azimuth mechanics for the 3m dish 200Watt TWT available / n.f 0.8dB This station is still as my garden but it cannot stay here permanently. I'll build the complete set-up initially to run the first tests with limited moon window. When all ok, then I intend to move this station to a nearby Scouting group location for much better moon window and also add 1296MHz capability. tnx fer info Jan

Last

- **W4HHK silent key.** It is with great sadness that I report that Paul, W4HHK died on 29 Nov. He was a true EME pioneer. He was at one end of the first 13cm qso years before microwave EME became popular. Paul provided the first 432 EME

signal I ever heard. He was active on 13cm EME and both a proponent and promoter of 2300 up to his end. He had celebrated his 75th birthday in sept. with his first 24GHZ QSO with his son Steve, N4HHK. We have lost a great one. (Source EME NL VOL28#13 from K2UYH)

- **More eme news: MOON NET**
<http://www.nlsa.com/moon-net/moon-net.html> Post address is moon-net@VM.stlawu.edu Moon-Net. Topics are: GENERAL: (please NOTE the Colon following each of the Topics) To post a message, address it to Moon-Net@VM.STLAWU.EDU, Instructions are at <http://www.nlsa.com/moon-net/moon-net.html>
- **RIO2000** Dear Friends, We have been informed that the Rio Atlantica Hotel has been indicating the standard high season prices, as we have agreed a special prices for this event and as this event still one year distant the hotel has not as yet informed their staff about these special tariffs: We request that you make your reservation directly through us at: eme2000@ineparnet.com.br
The special tariffs agreed for this Conference as follows:
Apto std - US\$ 135,00 + 15% - no sea view
Apto sup. - US\$ 150,00 + 15% - side view
Suite std - US\$ 160,00 + 15% - no sea view
Suite sup. - US\$ 180,00 + 15% - side view
Suite Océanica - US\$ 280,00 + 15% - beach front sea view
Breakfast - US\$ 20,00 + 10%
Best Regards, Don - PY5ZBU
See our web page www.eme2000.com.br
- **ARRL contest info**
<http://www.arrl.org/contests/.....>
- **deadline** every first of Feb./May/August/Nov.
- **my email** bernd_wilde@eac-com.de

73 Bernd DL7APV

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6m News

Editor: Joachim Kraft, DL8HCZ - Joachim@Kraft.net

Expeditions and Infos

Maritim Mobil: Vom 1.2.-21.2.2000 sind DL2NUD + QRV: Hamburg>Rotterdam> Madeira> Kanarische Inseln> Casablanca> Cadix> Felixstowe> Rotterdam>Hamburg. Dabei werden folgende Felder aktiviert: JO 34-33-23-22-12-11-01-00 IO 90 IN 99-89-88-78-77-67-66-65-55-54-53-43-42-41-40-30 IM 39-38-37-27-26-25-24-14-13-12 (Funchal/ Madeira) -11-10 IL 19-18 (Tenerife) -28 (Las Palmas) -38-39 IM 30-40-41-42-52-62-63 (Casablanca) 64-65-66 - (Cadix) - 56-57-58-59 IN 50-51-52-53 - und zurück. Rig 50MHz: 100W, HB9CV.

8QMAlediven: HB9QQ ist Anfang Februar wieder als 8Q7QQ auf 6m für EU qrv.

9GGhana: OK2PZW, Zdeno, ist für 2 Jahre als 9G5ZW auch auf 6m qrv.

9M0st-Malaysia: Eine Gruppe ist vom 15.-29.3. als 9M6AAC auf 6m qrv.

9USM5DIC ist ab Mitte Januar wieder für 3 Monate als 9U5D auf 6m qrv. QSL via SM0BFJ.

MMUU7JM/MM plant im Sommer 2000 einige Felder im schwarzen Meer auf 6m zu aktivieren!

C2Nauru: Im März 2000 plant VK2QF eine 6m-Expedition.

C3Andorra: C31HK, Fred, ist seit Juli mit 25W + 3 Ele. wieder auf 6m qrv. Er darf jetzt auch unterhalb von 50.200 arbeiten.

CNMarokko: HB9HLM plant im Juni als CN2DX auf 6m qrv zu werden.

DLIn January 2000 another 2000 6m special licences were issued from the German PTT. Licences were given now also to VHF calls like DB, DC, DD, DG and to DH. Still same

QRG-range and only 25W ERP. Altogether now 3000 licences in DL. A general release will probably not come this year.

FR/GGlorioso: Eine große Gruppe aus F plant im Sommer 2000 eine große Expedition.

J7J79AND (Op K5AND) ist im März 2000 auf 6m qrv.

J8St. Vincent: J87AB ist mit 100 Watt 5 Ele. jetzt auf 6m qrv.

JXJan Mayen: LA7DFA plant ab April 2000 wieder als JX7DFA auf 2m/6m qrv zu werden.

OXEine Gruppe aus OZ + OX plant im Juni 2000 eine Expedition auf 6m, 2m, 70cm und 23cm. Es soll u.a. mit einem 32m Spiegel gearbeitet werden. Info: OZ1DJJ/OX3LX.

UNKazachstan: UN6P ist auf 6m qrv. Locator ist MO60LC

VK9XVK3OT plant im März 2000 eine 6m-Expedition.

XEMexiko: XE1/SM0OGD ist bis mind. Mai 2000 auf 6m aus EK09 mit 100W + 5 Ele. QRV.

ZAAlbanien: ZA/N7BHC ist für 2 Jahre auf 2m, 6m + 70cm mit guten Rigs qrv. Loc.: JN91

ZL7Chatham: DJ4ZB plant im Februar 2000 eine Expedition auf KW + 6m.

ZXSt. Peter+Paul: Im April 2000 ist eine Expedition unter ZX0SK + SP auch auf 6m geplant.

Beacon-Infos

9M2TO/B50.005 MHz, OJ05, 25W, 5/8 GP. QRV

S55ZRSaktuelle QRG: 50.023 MHz

T99YVZ50.065, JN84UD seit 1.8.99 QRV

LY.....50.063, KO....., 5W, 1/4lambda Vertikal. Wird demnächst QRV.

FR5SIX50.022.5 LG78, 1.5 Watt, seit 29.9. wieder QRV. F5QT

HC8GR/B50.035, EI59, Galapagos, 35 Watt, Loop, QRV 10/99

PP2SIX50.073, GH53, 7Watt, GP, QRV 10/99 PP2AU

VK3SIX50.0535, QF02WH, 20 Watt, 9 Ele., 360 Grad, QRV 10/99 VK3OT

LA7SIX + LA7VHF (6m + 2m) sind seit Anfang September wieder QRT. Es muß wegen TVI wieder ein neues QTH gesucht werden. Man hofft zur Saison 2000 wieder QRV zu sein LA0BY.

6m-Reports

7.11.0830-1100F2: UN3G MN83 wkd: SP, OE, I, ganz DL, OZ, SM, YL etc. -

1020 OZ, SM, F, OH wkd 9M2JKL!

1030-1130 TEP von ganz DL: ZS6WB, BTE, Y, ZR6ZL, ZS4NS KG32, ZR5ADQ KG50
Giz: F2: TR8CA + TR8XX

2045-2100 Aurora-E von SM6: OH2BGN/8 KP46, + OH9SIX

2050Aurora-E von SM3: OX3SIX, OX3VHF + OY9JD

8.11.0900-0940F2-Scatter von ganz DL: JA3RQ, JE2TRG, JA4KFA, JH5FIS, JA4KLB, JA4DLP, JA4MBM gleichzeitig F2 zu VK6JQ PH12

0920: DJ5JK JN49 wkd 9M2JKL

1400Aurora von Nord-DL

1720 Aurora-E von SM3: JW7SIX

2230AE von Nord-DL: OH9SIX

9.11.1530F2 von Süd-DL: TR0A/B JJ40

10.11.1110-1300TEP von Mittel + Süd-DL: ZS6 von Italien: ZS3C KG21

11.11.0815F2 von Süd-DL: UN3G MN83, JA9IPF

11.11.0930F2 von ganz DL: VK6HK OG87 von Mittel-Italien: FK1TK RG37!!!

13.11.0835F2 von Nord-DL UN3G 0930 DL6AMI wkd DU1/GM4COK PK04

1000 DF9CY JO54 wkd 9M2TO 1220-1400 TEP von ganz DL: ZS6 + ZS4

1430Aurora von OZ+N-DL

von Italien wird J28FF aus LK11 gearbeitet!

14.11.0830F2 von Süd-DL: VK6JQ 0930-45: VK4FNQ QG39, VK4ABW QH30

0915 Es von Nord-DL: UR5

15.11.1320F2 von Süd-DL: 5N3CPR JJ25 (QSL via SP5CPR)

1330-1400 F2 von PA, OZ: VE1YX, VE1ZJ

16.11.0910F2 von Nord-DL: DL6BF JO32 wkd DU1/GM4COK PK04

18.11.1030-F2 von ganz DL: UN3G MN83

19.11.0815F2 von ganz DL: 5N3CPR JJ25 0945: DL9USA JO71 wkd: DU1/GM4COK PK04

20.11.0830-1000F2 von West-DL: 5N3CPR Von Ost+Süd-DL: 3C5I, 5N3CPR Es: CT/EH7

23.11.1310F2 von OZ: KP4AHQ

24.11.0900-1200F2 von ganz DL: 5N3CPR 1230 von PA, ON, OZ, G: HK3YH FJ24

1320 F2 von PA: PY0FF HI36

1500 F2 von Mittel-DL, PA, VE1YX

26.11.1000F2 von Mittel-DL: 5N3CPR 10-11 von 9H, SV, I, G: S92DX JJ39

1130F2 von ON+PA: ST2SA KK65

27.11.1130F2 von PA+ON+F+I: S92DX JJ39, 3C5I, TR8CA 1400 von Mittel-DL: 4X1IF KM72

5.12.0900Es von Nord/Mittel-DL: I

20.12.1530F2 von Mittel-/Süd-DL zu K1SIX (ex WA1OUB)

21.12.1315F2 von Süd-DL zu VE1YX

25.12. 1430 Aurora from OH8

26.12. 1650 Es von Nord+Mittel-DL: OH9SIX KP36

28.12. Aurora from OH1

31.12. 0030 Aurora from SM4

Tropo News

Editor: Joachim Kraft, DL8HCZ - Joachim@Kraft.net

MM-EXPEDITION

ATLANTIK Maritim Mobil: Vom 1.2.-21.2.2000 sind DL2NUD + DK5KK von einem Containerschiff auf folgender Route QRV: Hamburg Rotterdam Madeira Kanarische Inseln Casablanca Cadiz Felixstowe Rotterdam Hamburg. Dabei werden folgende Felder aktiviert: JO 34-33-23-22-12-11-01-00 IO 90 IN 99-89-88-78-77-67-66-65-55-54-53-43-42-41-40-30 IM 39-38-37-27-26-25-24-14-13-12 (Funchal/Madeira) -11-10 IL 19-18 (Tenerife) -28 (Las Palmas) -38-39 IM 30-40-41-42-52-62-63 (Casablanca) 64-65-66 - (Cadiz) - 56-57-58-59 IN 50-51-52-53 - und zurck. Rig : 50MHz: 100W, HB9CV; 144MHz: 1000W, 2x11ele, 432MHz: 170Watts, 22ele; 1296MHz 40W, 4x35ele; HF: 100Watts QRGs: Tropo: 144.333MHz; MS: 144.144MHz (skeds), 144.100MHz (random). Info/Skeds: Matti, DK5KK, dk5kk@yahoo.de oder Fax : 0381 4923441

JN32: TM5CRO ist vom 29.1.-5.2.2000 auf 2m und 70cm qrv. QSL via F5RMY.

2m reports QSOs >700km

DL8EBW/p, JO30gu, (MMC99 700W/2x17el M2) wkd: 6./7.11.99 9A3PA JN85 (957), 9A2L JN86 (902), IK4DCX JN64 (883), 9A1CMS JN86 (870), OK2KFM JN99 (859), OK2KJT JN99 (835), HA1YA JN87 (832), S52ZW JN86 (832), OM3KEE JN88 (830), OM1TF/p JN88 (820), OM3LQ JN88 (802), OL2R JN89TO (800), F5DE/p JN05 (778), IV3HWT JN65 (762), OE3XKW JN77 (752), OE3XXA JN88 (751), OK1FFD/p JN89 (727), OK2TT/p JO80 (725), F6DBB IN96 (708), OL1B JO80 (705), SM7WT JO65 (703), S53VV JN65 & S57C JN76. Gesamt 303

QSOs (87 500km!) in 68 Squares und 16 WAEs! tnx for info Guy

DH1TW, JN48QM wkd: 2. Jan 2000 2005-2400 UT G0RUZ IO93 955km, M1DNJ JO01 700km, G3KEQ JO01 731, G4LOH IO94 960, G7ULL JO01 744, 2E1HEB IO91 784 (10W), G8HGN JO01 722, DL6NF JO33 600, DG2LAB JO54 660, DG4ZX JO54 642, DL2LAX JO43 607. Rig: 100W + 11 Ele.

Aurora News

Editor: Norbert Götsche, DL8LAQ

Aurora Management

by

DL1SUN, Norbert Richter

In my QTH (JO53PN) we get Aurora several times a month around the maximum of sun activity, during the minimum only several times a year.

After 27 years of activity on VHF, later on UHF and SHF I'm still interested in Aurora. Because I worked via a lot of propagation modes (Tropo, Es, Aurora, AE, MS) on 2m 428 locators, on 70cm 140 loc., on 23cm 60 loc. and 13cm 10 loc. it's not easy to work a new one.

On 2m only some new squares are really workable for me via Tropo, the chance via MS, ES, and Aurora/AE is much better.

Here are some of my Aurora-experiences on 144 and 432 MHz from MY qth, with MY equipment:

2m: good RX, M2 5WL fixed elevation, good power

70cm: good RX, M2 9WL, good power.

But I've got also experience with a 2 lambda LY and 25W output.

Maybe it's helpful to someone to understand how to work via Aurora, what about spots in the dx-cluster and I hope the probability of QSOs will be higher for him.

I want to talk about 5 level of AURORA.

LEVEL 1: light Aurora

Aurora is started in OH/SM. OH's spots it in PR/OH2AQ-Cluster and later spots DK1KO and/or (excuse me) DL1SUN. The SK4MPI/B is audible 53A and no other stations are audible in cw-band. Maybe that's all for today. SK4MPI comes and goes for 1 or 2 hour, I'm not able to do a QSO.

LEVEL 2: usual Aurora

Starts as a light Aurora. The Aurora is a little bit stronger and 20 min after SK4MPI/B-spots of DK1KO at first it's possible to work some quiet stations. SK4MPI/B comes up to 55A, LA2VHF peak 53A, both are instabil. The "exceptional Aurora beacons" SM5BSZ, SM5EFP... peaks 57A. It's possible to work stations in GM (QTF 330...020), LA, SM4, SM5 (QTF 330...030), OH2, SM3 from JP*1 squares (QTF 350...010).

LEVEL 3: strong Aurora

Starts as a light and usual Aurora. Difference to an usual Aurora: SK4MPI/B peaks 57A stabil and I'm able to work ES, LY, YL, UA1 (QTF 340...020), maybe one from the northern RA3-area (QTF 030...045). SSB-QSOs around the 144.300 MHz are possible.

LEVEL 4: very strong Aurora

Starts as a light and usual Aurora and get stronger. Sometime it's impossible to hear SK4MPI/B, the audibility of the beacon deflate and so do the other scandinavians too. I think the reflection area is more south than SM4/5. Than it's possible to work some more RA3 (QTF 025...050), G, F, ON, PA, OZ, SP, north DL to JO52/62 (QTF 020...050). Only a short time (15 minutes) before the conditions brake down at first like a cut, it's possible to work SM3/LA in JP*2, JP*3 squares also in SSB around the 144.300.

During the whole evening (after the opening) I'm able to hear some signals in the cw-band, often strong qsb and peak 55A for minutes and it's possible to do QSO too (GM, SM4, SM5, LA). Maybe late in the evening or early morning of the next day Aurora comes back.

Please notice:

The doppler in most of Auroras is negativ. Somebody listen with RIT minus 500 Hz, but

it's everybodys experience, because the big difference between habit of pitching of BOTH operators. This is not so important for QRO-stations. Please listen to your neighbours who do QSO and tune on his tropo-signal as usual, so you will be successful too (the same play as hunting dx on hf...).

If one of the big guns peak 57A or 59A it's easy to work them on 432 MHz too (QTF 005...035), usual turn antenna more to east as on 144 MHz.

The northern or QRO-station should call around 432.050 MHz and the southern station should turn the antenna for optimum. Both station have to notice the bigger doppler on 70cm. My IC402 did not enough RIT because about 2 kHz negative doppler is usual.

First QSO's I did with QRP, more gain/power is easier, 100W and 7 lambda LYs good, more better. But more antenna gain means a hard job to beam, vertical stacked systems should to be elevated. All owners of high gain arrays (2m and 70cm) should change direction often to catch some new squares.

SSB is sometimes not easy because the audibility is most of the time like strong FM on modulation, but sometimes like normal tropo. If someone try to do SSB-QSO's notice the doppler and habit of pitch.

LEVEL 5: eventful Aurora

Starts as light and usual to get stronger and stronger. Most of these kind of Aurora start around early afternoon and good dx is possible to work after jobtime 15-16 UTC. It's possible to work like during very strong Aurora, but I'm also be able to work HB9, OE, HG, S5, 9A, YU, YO and also LZ (QTF 030...065). On 70cm it's possible to work to the south too (HG) at QTF 020...060. Folks with vertical stacked antennas for 70cm should elevate to work to the south.

Often we get Aurora all levels some days again and again. Watching it, a mix with AE is possible too.

Something to notice:

Maybe my remembering isn't ok but I think the possibilities of level 4 and 5 are higher NOT

during the maximum of sun activity, but I did no statistics. The QTF is a problem of geographic latitude and horizontal angle of your antenna array. QSO's to outside the so called oval are possible, so did and told about DK1KO (QTF around 320) to SM2 (QTF around 220).

Newcomer-QRO-station should beam and call to direction without signals, at first try 15deg more than you are able to hear signals to get a feeling, what direction is good for QSO's too. If possible try to elevate, Aurora isn't a homogene area like a mirror.

An old but important wisdom:

5dB more power/gain by tx are not always 5db more strength in RX. If you are more fare from reflexion area you need more power to overcome the attenuation of path (the same as on 10 GHz rainscatter). So it's possible to hear stations from Scandinavia (25W) 25db and you are not able to do a QSO with them with the same power. Outstanding signals via Aurora means outstanding power/gain (more than 20dB antenna and good power 1-2kW out)... that's in some european countries not unusual...

DX-Cluster, ww-convers channel 14345 and N1BUG AURORA MONITOR in the WWW are good tools.

All I wrote is not my own wisdom, I got a lot of help by other folks around, thanks to all. Maybe I could help someone too, that's the idea of my Aurora management. 73, Norbert - DL1SUN.

DF1IAZ JN49LD

1999-10-10
1600 GM4JJJ IO86B 53A 52A
Thanks for your report, Ralf.

DL8EBW (DL66a / JO31NF) wkd on 144 MHz:

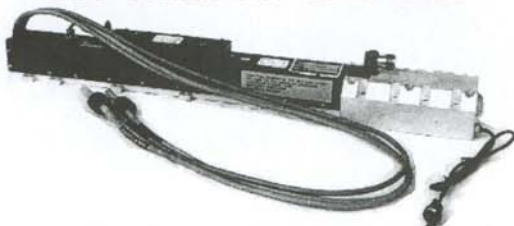
1999-10-10
1535 GM4JJJ IO86 55A hrd 10
1537 OZ1EEZ JO45 53A hrd 30
1542 DK1KO JO53 52A hrd 30
1547 SK7MW JO65 52A hrd 30
1632 GM4JJJ IO86 57A 52a 10
1705 SM4IVE JO79 41A hrd 0
1999-11-07

1341 GM4WLL/p IO85 55A 59a 20 *
1348 GM4CXM IO75 55A 53a 20 *

Equipment: FT726R (CF300), 11 ele DL6WU, MGF1302, 4CX250 (outside TV-Time) - DL8EBW/p

VARIAN VTR 6201 A 2 is a high Power Traveling Wave Tube (TWT) for linear use from 2 to 7 GHz with an output of 200 Watts with only 20 mWatts drive. Because of its wide frequency range this tube can be used in 13, 9 and 6 cm band (S-, C- and X-band). Only three different power supplies are needed: heating = 6.3 V / 2.1 A; collector = 2750 V / 400 mA and helix = 4400 V / 10 mA. Connectors: RF-input = SMA-female, RF-output = LC-female. One connector LC-male will be delivered free of charge. Because of 200 Watts output power this tube can be used for moonbounce communication (EME). The large bandwidth and the high amplification makes it suitable for FM-TV in the frequency range from 2 to 7 GHz. All tubes are second hand but hardly used, well checked in our lab and in excellent condition. The quantity of this TWT's is limited!

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during MMC99 from JO30GU 2x17ele M2, 700W.
 Thanks for your report, Guido.

LA0BY/p in JO59IX wkd on 144 MHz:

1999-10-05				
1655 ES2RJ	KO29JM	54A	55A	30
1700 LA4XGA	JO33VC	52A	55A	0
1706 OH2BNH	KP20LG	56A	59A	30
1707 OH1XT	KP01UK	57A	57A	30
1709 OH6MAZ	KP21IG	56A	55A	30
1712 SK4KO	JP70JX	56A	55A	30
1714 ES1DF/2	KO29GG	52A	55A	30
1716 SM5KNV	JO88MW	52A	57A	30
1717 OH6PA	KP02PL	53A	55A	30
1719 OH3BYZ	KP21TA	55A	55A	30
1720 SM5KQS/5	JO88MS	54A	55A	30
1723 OH0AZ	JP90XI	59A	59A	30
1726 OH6MSZ	KP21XU	57A	59A	30
1727 OZ1KLU	JO46PE	57A	55A	30
1732 SM1HOW	JO97GL	53A	55A	30
1734 YL3AG	KO26AW	55A	55A	30
1735 SK5CG	JP80UE	53A	55A	30
1739 OH6BKO	KP02OJ	55A	55A	30
1742 SM1MUT	JO97CJ	53A	55A	30
1747 SK3BP	JP81MH	53A	55A	30
1753 OH6QR	KP22BN	52A	55A	30
1756 SM3BEI	JP81NG	54A	57A	30

LA0BY in JO59FW wkd on 144 MHz:

1999-11-07				
1528 SP1MVG	JO73FJ	54A	51A	60
1545 GM4WLL/p	IO85NR	52A	55A	350

1999-11-13

1520 PA3CEE	JO33JI	57A	57A	10
1526 DL9GRE	JO64PA	54A	55A	40
1533 DL1UU	JO62SP	57A	57A	40
1534 DL8AKI/p	JO51CH	57A	55A	30
1536 DK5DQ	JO31PH	55A	53A	20
1538 G4DHF	IO92UU	53A	53A	10
1540 DF3OG	JO42OP	53A	55A	20
1543 DL4PM	JO64UI	53A	55A	30
1544 GM0CLN	IO85HV	55A	53A	10
1549 DL6YCY	JO41CU	55A	53A	30
1551 DL7ULM	JO62SN	55A	57A	30
1552 DF6VI/p	JO41PU	55A	55A	30
1554 DH5FS	JO61MA	52A	52A	30
1555 DL1RTL	JO62PH	53A	55A	30
1556 DL4LCA	JO44XF	55A	55A	30
1999-11-16				
1730 DF1RL	JO43MW	55A	55A	30

Thanks for your report, Stefan.

PA3BIY (JO22EB) wkd on 144 MHz:

1999-02-18				
2032 OZ1EEZ	JO45VJ	55A	55A	
980925				
1544 GM0CLN	IO85MX	55A	53A	
1999-09-22				
2228 GM0PWS	IO68UE	55A	55A	
2234 SK6HD	JO68SD	56A	59A	
2247 SM5BSZ		577	56A	*
2338 SM6CEN	JO57XO	56A	57A	
1999-09-23				
0009 LY2WR	KO24PQ	56A	58A	

Es News

Editor: Norbert Götsche, DL8LAQ

Dear Readers, please send your reports via email to dl8laq@gmx.de or packet radio to DL8LAQ @ DB0HB.#HH.DEU.EU. 73, Norbert.

1999-05-24

ON4PS (JO20KQ) wkd: EA5FKX IM98SQ, EB5BCF IM99TF, EA5CA IM99TL, EB5EE IM98RV, EA3DVJ JN01OV.

PA3BIY (JO22EB) wkd: 1308 EA6XQ JM19, 1310 EA5FHX IM98, 1312 EA5CA IM99IC, 1317 EA5EZJ IM98, 1333 EA6FB JM08PW, 1335 EA3ADW JN11, 1336 EA3DXU JN11, 1339 EA3CRI JN11CI, 1337 EA3GJO JN11BI, 1340 EB3FBA JN01TG, 1349 EB3DYS JN11, 1351 EA3TA JN11AM, 1353 EB3EHJ JN11, 1450 EA3BTD JN12FE.

1999-06-07

F6HTJ (JN12KQ) wkd: 1208 YO2LEA KN06WK.

1999-06-19

LZ1AG (KN22ID) wkd: 1146 DJ6OL JO52, 1147 DL3JIN JO60, 1148 OK1SI JO70.

LZ1ZP (KN22ID) wkd: 1149 DJ6OJ JO52, 1149 DL3JIN JO60, 1149 DL8CMM JO52, 1150 DJ9FG JO52, 1150 DL5ME JO52.

PA3BIY (JO22EB) wkd: 1703 RA3DQT KO95HI, 1712 RK3AF KO85QR, 1723 UA3DHC KO96CB cw, 1725 RV3AH KO85TO cw, 1726 RA3DRC KO95 cw (lost in QSB), 1730 RX3PX KO84SD cw/ssb.

1999-06-20

DF1IAZ (JN49LD) wkd: 1053 SV7GX KN20EW, 1057 LZ5QD KN12IG, 1102 SV8DTD KM39EA, 1110 Z31DX KN11GD, 1115 LZ1UH KN11SU, 1118 SV7DMK KN21LH, 1127 Z36HAN KN02QX (FM), 1130 TA3BW (FM), 1159 SV8ECK, 1329 YO3ACX

KN34BL, 1329 YO4NF KN44HE, 1330 YO3APJ KN34AL, 1650 9H5L JM75FV.

G4RGK (IO91ON) wkd: 1140 band open, 1141 YO9AZD KN35AA nc qrm, 1150 YO5QAQ KN16UG, 1158 YO9AZD KN35AA, 1214 YO4NF KN44HE, 1215 YO4FYQ KN44HE.

LZ1AG (KN22ID) wkd: 0935 IW5DAN JN53, 1017 S53VV JN65, 1018 IK1TPP JN65, 1019 I4YNO JN54, 1020 IW1BCV JN44, 1022 I4RHP JN54, 1024 IK2EAE JN45, 1025 I4PYR JN54, 1026 IW2BAI JN45, 1027 IW2DAL JN45, 1028 9A2RD JN65, 1029 IK2UMQ JN55, 1030 IN3ZTI/P3 JN55, 1031 IK2THU JN45, 1032 I2MCD JN55, 1033 IW1ESM JN45, 1033 IK2GSO JN45, 1034 IK2GSV JN55, 1035 IW3FQT JN55, 1035 IW1CAA JN45, 1036 IK3SSG JN55, 1037 IW1DMC JN45, 1038 IZ1BPN JN35, 1039 I1JTPQ JN35, 1048 DF2GN JN47, 1049 DL6GCK JN47, 1050 DL8GCL JN47, 1051 SM7 JO76, 1053 I3EHK JN55, 1054 DG3GAG JN48, 1054 F8OP JN26, 1055 F5BNF JN27, 1055 HB9Q JN47, 1056 S57 EZB JN65, 1058 F6EKJ JN27, 1100 S56HCE JN75, 1101 HB9AMH JN37, 1101 S53X JN65, 1102 HB9DKM JN37, 1103 HB9DFG JN37, 1104 S56ECR JN65, 1105 S56HCE JN75, 1105 IV3DNC JN65, 1106 S57LNX JN76, 1107 S57MSU JN76, 1108 DF9UX JN47, 1108 S57MTA JN76, 1109 S57RWZ JN76, 1110 IK2IQD JN45, 1110 IK3UNA JN55, 1117 HB9MIO JN37, 1118 HB9ONN JN37, 1119 HB9JAW JN47, 1121 HB9BQU JN37, 1121 DK8VS JN39, 1122 DJ7UD JN48, 1123 DF1SO JN48, 1124 HB9RDE JN37, 1125 F6FXU JN37, 1126 HB9KAB JN47, 1127 HB9DFP JN37, 1128 HB9CDJ JN47, 1129 F5SNY JN37, 1130 HB9PZQ JN47, 1131 HB9BNI JN37, 1132 I3LDI JN65, 1134 IW3HHN JN55, 1135 HB9EBM JN37, 1136 DG9BEM JO43, 1137 IV3BBR JN65, 1138 S53N JN65, 1139 PA9KT JO33, 1140 PA3EXB JO32, 1140 PE9DX JO33, 1140 DK3BU JO33, 1141 HB9TIA JN47, 1141 HB9FAP JN47, 1141 HB9AVI JN47, 1142 PA3CWN JO33, 1142 DH0GHU JN38, 1142 DL6GCA JN37, 1143 PA3EHH JO23, 1143 PA5TA JO33, 1144 HB9HLL JN36, 1145 PA3CEG JO33, 1145 PA5WX JO33, 1146 PE1RKQ JO33, 1147

DL1GI JN47, 1147 PA0PLE JO33, 1148 PA3CEE JO33, 1149 DL6NF JO33, 1150 PE1OPK JO23, 1150 PE1KLQ JO33, 1151 HB9DIK JN37, 1155 DL6AI JO43, 1155 DH9OY JO51, 1156 DL5YET JO41, 1156 DM3GH JN48, 1157 DL9EY JO41, 1157 HB9PHJ JN47, 1158 PA3BGM JO33, 1201 F6FLV JN18, 1202 HB9SJE JN47, 1203 HB9CDJ JN47, 1205 F1CYB JN17, 1206 DB8WJ JO33, 1207 HB9ABN JN47, 1208 F5HVY JN18, 1210 F1CYB JN17, 1211 F1HAR JN18, 1212 DB8TA/P JN48, 1213 PE1PWO JO33, 1214 PA0EPD JO33, 1214 DC8GT JN38, 1215 DH9GCD JN38, 1217 DF6GQ JN37, 1219 HB0/DK7YY JN37, 1220 HB9AGH JN47, 1227 DL5GAC JN47, 1229 DF1CF JN57.

LZ1ZP (KN22ID) wkd: 1411 DK2CF JO72.

ON4PS (JO20KQ) wkd: YO4RFV KN45AK, YO9AZD KN35AA, YO4FYQ KN44HE, YO4NF KN44HE, YO5QAQ KN16UG, YO4FRJ/P KN34AW, YO9GDJ KN25WA, YO4WZ/P KN44EW, YO9DAX/P KN44EW, UX0FF KN45KJ, YO5CFI KN16WJ, YO6DBA/P KN36DA, Z31DX KN11GD, UR5EUP KN78WN, UR0EY KN88AF, RV3ZR KO80CL, US5UES KO50PT.

PA3BIY (JO22EB) wkd: 1138 LZ2SQ KN33GN cw, 1142 HA8MV KN06UG, 1145 HA8CE KN06, 1150 YO7CGS KN15OA, 1155 YO2LFP KN06ND, 1157 YO7AQF KN24KN, 1158 YO2II KN06, 1159 YO2LMM KN06, 1206 YO9AZD KN35AA, 1215 YO7IV KN24KV, 1508 YO7VS KN14, 1510 YO2LHD KN05WQ, 1515 YO2II KN06, 1515 YO7IV KN24IV, 1527 YO3JW KN34.

SM1HOW (JO97GL) wkd: 1131 I8MPO JN70FP, 1134 I8QLS JN70CU, 1136 IK8FAX JN70CN, 1142 I8NHJ JN71HL, 1144 IK8HCG JN71EA, 1148 IT9KSS JM68QC 2184 km, 1205 IW0DBO JN61NQ, 1608 YU7EW KN05HP, 1609 YU7AR KN05BW, 1612 YU1EV KN04FR, 1617 9A4FW JN95JG, 1619 YZ7MON KN04AX, 1620 YZ1RA JN94VC, 1620 YZ1KU, 1621 HA3GR JN86VI, 1623 9A1CCY JN85OO, 1623 YZ4IZ JN84UU, 1624 9A4CW JN95AD, 1625 9A2KI/P JN95AG, 1634 IK7UXU JN81HE, 1636 9A3PA.

1999-06-22

LZ1AG (KN22ID) wkd: 1439 PA0LQA JO32, 1500 DH3YAK JO31, 1501 PE1RBG JO22.

LZ1ZP (KN22ID) wkd: 1504 PE1FEI JO22, 1510 PE1PKR JO23, 1510 DG1YBO JO31, 1511 DL6YCY JO41, 1511 DG9YIH JO32, 1515 SP9EWO JN99, 1516 DJ9EV JN49, 1517 DJ7AW JN68, 1518 PA9KT JO33, 1519 PA5TA JO33, 1519 PE9GG JO33, 1520 PA0PLA JO33, 1521 PE1ENG JO33, 1525 DL4ABJ, 1526 DL4AO JO42, 1534 DL9OBD JO42, 1547 DM2CKK JO50, 1547 DD8DX JO31, 1559

DK9OY JO42, 1559 DL1HTT JO61, 1600 DL9EY JO41, 1600 DL2ARD JO60, 1601 DJ7OF JO51, 1603 DL2NS JO43, 1603 DL9OBD JO42.

ON4PS (JO20KQ) wkd: YO6FNA KN36BA, YO5BWD KN27GD.

1999-06-24

F6HTJ (JN12KQ) wkd: 1755 SV1WE KM18VA, 1756 SV1DVX KM18VA.

1999-07-08

F6HTJ (JN12KQ) wkd: 1737 LZ1AG KN22ID.

LZ1AG (KN22ID) wkd: 1738 F6HTJ JN12, 1740 EA3ADW JN11.

LZ1ZP (KN22ID) wkd: 1738 EA3ADW JN11.

1999-07-12

PA3BIY (JO22EB) wkd: 1855 YU1MS KN04, 1856 YU1EV KN04, 1919 LZ1QI KN12.

1999-07-17

DF1IAZ (JN49LD) wkd: 1034 LZ1KJ KN31CS.

1999-07-18

LZ1AG (KN22ID) wkd: 1525 IM0/IK2AEQ JN41, 1554 EA6FB JM08, 1600 EA5ZF IM98.

LZ1ZP (KN22ID) wkd: 1524 IM0/IK2AEQ JN41, 1529 I1JTG JN35, 1530 F6FLV JN18, 1547 EA5ZF IM98, 1553 EA5YB JN01, 1554 EA6FB JM08, 1559 EA3 DUY JN12, 1602 EA3DXU.

1999-07-26

LZ1AG (KN22ID) wkd: 0657 UA4API LN20.

1999-07-31

LZ1ZP (KN22ID) wkd: 1755 G4DHF IO92.

1999-08-22

DF1IAZ (JN49LD) wkd: 1001 EB5EEO IM98PG, 1006 EA5FKX IM98SQ, 1007 EA9IB IM85NG, 1008 EA5HV IM98SJ.

Meteor Scatter

Editor: Norbert Götsche, DL8LAQ

Dear Readers, don't forget to send in all your reports, experiences and comments about the MS activity!

It happens sometimes that I can't recognize what column of your report includes the number of bursts or pings or the tx/rx report. Please don't forget to give me a short hint. In this column the order is bursts, pings and seconds. And here is again the meaning of the short cuts: c = complete, bs = backscatter, m = many, nc = not complete, nil = not in log (no reflections!), r = random, s = ssb, sc = sidescatter and t = tailend.

Send your reports to my email address dl8laq@gmx.de or via PR to DL8LAQ@DB0HB.#HH.DEU.EU. 73, Norbert.

CT1FAK (IM57) wkd:

1999-11-18
 0146 0146 EA3ADW 37 37 144.200
 0200 0206 DL5GAC 39 39 144.350
 0206 0206 IK1LGV 37 37 144.350
 0214 0214 DF8IK 38 38 144.350
 0214 0214 DK9OY 39 39 144.350
 0241 0241 G0KPW 37 37 144.350
 0241 0241 ON7UC 37 37 144.350
 0300 0308 PA2DWH 27 27 144.350
 0314 0314 IV3HWT 27 27 144.350
 0314 0314 HB9DFG 37 27 144.350
 0314 0314 IW2BNA 38 38 144.350
 0308 0329 DL1KDA 27 27 144.350
 0330 0331 DF9KX 38 38 144.350
 0331 0331 IK1PAG 59 59 144.350
 0331 0331 DL4NAA 59 59 144.350
 0335 0335 F6FHP 59 59 144.350
 0400 0409 DL8EBW 27 27 144.350
 0409 0409 DH3YAK 27 27 144.350
 0410 0421 DM1CG 27 27 144.350
 0436 0436 DK5YA 59 59 144.200

And a lot of stations heard but no QSO! Sorry. Operator: CT1FAK, CT1ETZ and CT2GKX. Thanks for your report, Rui.

DF1IAZ (JN49LD) wkd on 144 MHz (complete only):

1999-07-18
 0732 0752 EI/DH3FB IO54UI 27 26 2 8 1 ct
 1999-08-09
 0530 0600 LA5KO JO29OG 26 27 29 23 2 ct

1999-08-10
 0700 0727 LZ7Y KN41AX 26 27 19 37 1 c
 1140 1202 EA3BB/P IN73XA 38 26 16 20 12 c
 1999-08-11
 2025 2057 EA3BB/P IN72XX 27 26 8 14 1 cr
 1999-08-12
 0300 0335 LA8KV JP52QQ 37 36 16 10 20 c
 1830 1925 UT5ER KN78ER 27 26 5 0 2 c
 2000 2022 OM9M KN18AM 26 26 6 7 1 c
 2237 2247 EA3BB/P IN62TL 38 27 6 3 12 cr
 1999-08-13
 0257 LZ7Y KN41AX 27 39 1 0 15 crs
 0800 0823 G0RUZ IO93FR 47 27 6 9 25 c
 0900 0956 LZ1KJ KN31CS 47 27 14 16 30 c
 1100 1150 LA6QBA JP61BJ 28 27 7 13 5 c
 1200 1259 EI5FK JP51RT 27 26 16 15 6 c
 Thanks for your report, Ralf.

DL4MEA writes:

Hello friends, at the end of all and the next event just in front of the door (ARRL-EME-part-II) here is my report from the QSOs done during the 1999 Leonides shower. Let me mention one comment: It was nice to see how wide spreaded the signals were! Fine done, folks. Not as usual when 90% of europe is sitting on 144.200.

DL4MEA (JN58jd) wkd:

1999-11-17
 2320 EA/DF9OX IN63TS c*1*7
 0140 CT1FOH IM57 cs*1
 0157 EA3ADW cs
 0205 EA9MH IM85NG cs*2
 0206 EA4CTF IM89AT cs
 0207 IZ1AZA JN35SB cs
 0210 F5FLN IN94QV cs*3
 0304 YO3JW KN34CK cs
 0241 UT5EC KN78LM cs
 0227 RX1AS KO59 cs
 0238 LY2BAW KO25 cs
 0246 ES5AAM KO38 cs
 0305 YO8KOA cs*6
 0345 LZ1AG KN22ID cs
 0426 I8MPO JN70 cs
 0429 F1FIH JN23GS cs*4
 0437 EA7GTF cs
 0452 OH6KTL KP02OJ cs*5
 0455 OH8K KP43 cs*5

Remarks: *1 sked; *2 Country #61; *3 Maybe tropo; *4 Maybe tropo, but nevertheless a new square; *5 Called me when I was chatting in a local chat; *6 Does anybody know his locator? *7 Sorry, keying problems.

My OH5IY-equipped PC suddenly made only slow-speed-CW, don't know why. Total 7 new squares, 1 new country. Equipment: FT847, MRF141G driver, GS35b final, 2°15ele BV-OPT 4WL, MGF1302 in shack. Thanks for your report, Günter.

DL8EBW (DL66a/J031NF) wkd on 144 MHz:

1999-09-24	0400 0445 LA4XGA	JP33VC	26 76 2	3	0.5nc*1
1999-10-01	0357 0441 LA4XGA	JP33VC	27 26 5	10	0.5c*1
1999-10-08	0357 0412 LA4XGA	JP33VC	27 28 4	4	1 c*1
1999-10-22	0357 0436 LA4XGA	JP33VC	26 26 4	12	0.8c*1
1999-11-12	0457 0525 LA4XGA	JP33VC	26 27 6	9	1 c*1
1999-11-17	0400 0500 CT1FAK/p	IM57	26 2	5	2 nc
08..	IC8FAX	JN70FP	hrd cq	1	40
1999-11-18	0110 ES2RJ	KO29JM	38 38 1	20	crs
0153	RA3DQ	KO85QU	27 57 1	40	crs
0216	OH7MA	KP52EL	38 59 1	30	crs
0217	OH8UV	KP34VG	38 38 1	40	crs
0218	OH8HDL	KP34VG	38 38 1	40	crs
0224	OH8K	KP43	39 59 1	30	crs
0230	RW1AW	KP50EB	49 59 1	45	crs
0237	OH6MAZ	KP21IG	26 38 1	15	crs
0256	UT5ER	KN78ER	38 59 1	30	crs
0317	UT5EC	KN78MN	39 29 1	30	crs
0330	RW3PF	KO93CD	29 59 1	30	c?rs
0337	RK3AF	KO85QR	27 27 1	20	crs
0352	RX1AS	KO59FX	37 59 1	20	crs
0400 0412	CT1FAK/p	IM57	27 27 3	5	5 c
0436	UT5VD	KN68	29 59 1	15	c?rs

Remarks: *1 Regular sked to Geir (1320 km), to test MS-condx. Rig: FT726r modified (CF300), 4CX250R, 11ele Flexa, preamp MGF1302, DTR (made by DF7KF) ETM9C, RX/TX max 3500lpw, OH5IY Compact-MS-Soft Version 5.0. Every sked for MS also with stations worked before is very welcome!

EA3BB PERSEIDS 1999 - LA VIDA LOCA

(Part II - The Story)

Enrico, I5WBE and Pau, EA3BB (brother of EA3DXU), following the excellent activity of the previous year from JN00, 01, 02 and 12, carefully planned also this expedition to north western Spain. As for myself the decision to join the crew was taken only 3 days before departure. I5WBE incidentally asked me by email if I wanted to join them and after one and an half days of thinking I accepted, since I already started my hard earned summer holidays (I was very close to a nervous breakdown...hi) and I still had no fixed target for them (yes, I'm still single...). On 5th August I loaded my undersized BMW Compact in an incredible way, picked up I5WBE near Florence and we headed to sunny (at least

we thought) Spain. First stop was at EA3BB's QTH, the lovely village of Santpedor, about 50 Km north of Barcelona for the weekend. EA3BB was busy with a local contest and we had the chance to visit his excellent contest QTH on the Pyrenees in JN12SC about 2200 m asl. A truly contesting paradise, although sparsely populated (from a contesting point of view). On this occasion I could get my first extremely good impression of Pau's van dedicated entirely to DX and contest activity. The way he built the antenna system was extremely effective and a single guy could erect and dismount the aerial in 1,5 hours or so.

On Monday 9th August we left EA3-land and headed west to the accurately chosen QTH in the point where the 4 different squares are meeting: IN72, IN73, IN82 and IN83. On spot we had an eyeball sked with EA1DPP who very kindly helped us to find the spot (oh well, Enrico's GPS did the rest...). This location is called Embalse del Ebro and is the lake from which the river Ebro is originated. If you have a map of Spain just look about 60 Km. south of the coastal city of Santander in the region called Cantabria. To be honest the place looked very romantic but we were surrounded by higher hills except to east-north-east, where we were facing the lake. Nevertheless we managed to work quite a good number of QSOs including a few G stations which were in the less favourable direction. South and south east were completely closed, but there's not much to work in that direction. Even in this case we managed to work EA6VQ for a short path (about 850 Km) on MS managing to hear him also on tropo from time to time. IV3HWT had devastating reflections and together with Mr. DTR (ie. Dietmar, DF7KF) were the loudest from this area.

The Guardia Civil came twice, but they just limited to look at us from a certain distance, probably because Pau previously and wisely informed them by letter. All the equipment of EA3BB, including the generator performed flawlessly making the burden of equipment I took along with me from Italy totally useless (but you know Murphy...). Changing antenna site was easy and cosy and made us waste no time.

In spite of the excellent activity of DL8EBW & C. from IN82 and 72 there was considerable interest and we managed to work several random QSOs too. I apologise with those asking for more SSB activity, but we really don't like it on MS. Please also consider that SSB-MS is quite tiresome, especially when you are on expedition and you are supposed to resist the whole night...

WX was cloudy and cold, about 14- 15 C during the day and 8 - 9 C at night. But we had been told that weather can be rough so close to the Atlantic, although you are pretty much south. Anyway the biggest problem here were some big bursts dropped by local cows who were free to go out pasturing and other.

At noon on 12th August we took the antenna down once again and moved west to the region of Castilla y Leon. The QTH this time was on a 1500m high mountain near the small town of Astorga, in IN62XL. This QTH is located on the so called Camino de Santiago, that is the path that pilgrims are used to go through to the third city of the Christianity, Santiago de Compostela, in the north-western corner of Spain. We reached the place in the evening but although it was already 2100 local time there was still plenty of light to put up the antenna, connect the wires and start the fireworks. Both QTH and reflections were superb and the whole night between 12th and 13th August was spent on random. I collapsed at around 0700 local time after 22 complete random MS CW QSOs. Pile up on random made 2 meter sound like 20 meter at times. Quite a number of burst, eh shooting starts I mean, was quite visible in the sky, since weather was much better here. Enrico and Pau took my place and I left it to them with enormous pleasure, both because I was tired to death and also because I could sleep inside the mobile home alone while they were operating inside the van. You can't imagine what it means sleeping in a restricted area with I5WBE and EA3BB. The way they snore does not sound human at all.

During our staying in IN62 we were pleased by the visit of EB1DNA and EA1DPB, two novices from La Corua. They drove some 250

km back and forth and slept in a small tent next to our mobile home just to learn something new. This is also HAM spirit. Oh, by the way, they also took along a vast quantity of alcoholics with them. This is spirit...

During the night of 12th August at around 2230 local time an old chap with a long beard and a mountain bike appeared at our operating site. He was a pilgrim and when he saw our lights from the road thought this was an hotel or something. We just explained him we were radioamateurs operating our equipment etc., etc. He stared at us and sentenced "Spas sovieticas". He got some food and drinks from us, put his bike down, opened his sleeping bag, laid it on the grass in the open air and started to sleep. He disappeared very early the following morning.

The afternoon of 13th August was much quieter, although some QSOs took place. ODX was OK1KT in JO70: 1900 km. Reflections got poorer and poorer. EA3BB listening to the white noise next to me commented "No hai piedras!", which means there are no stones!. That was the reality. We packed our stuff and started the long trip back through a landscape which reminded me of Arizona and New Mexico. No Navajos nor Apaches were on sight though, only some enormous black bull advertising some national brandy.

See you from the next location. 73 de Alex, I4YNO, Enrico, I5WBE and Pau, EA3BB. Thanks for your report, Alex.

F/DD0VF JN04FT (qth F/G8MBI) wkd:

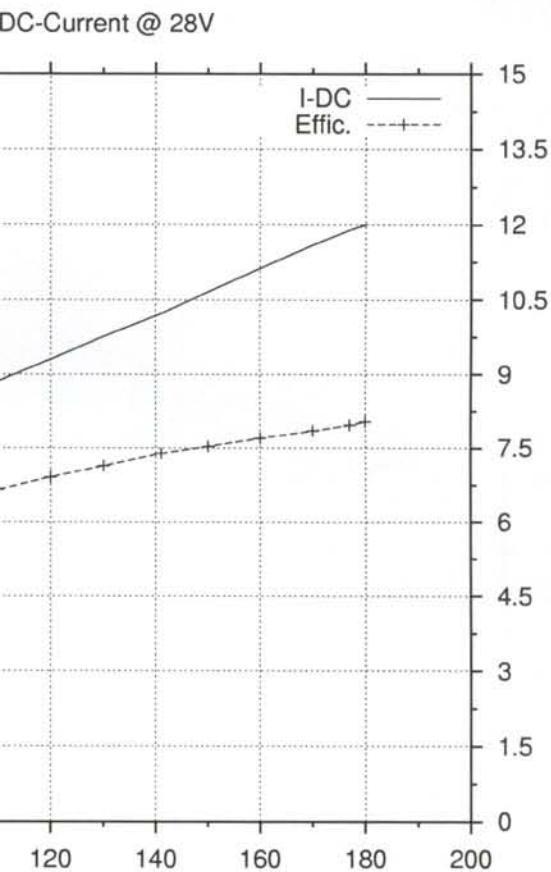
1999-08-16									
0400	0420	DK5KK	JO63						nil
0422	0442	DF8AA	JO60	27	27	11	7	0.5c	

F/DD0VF (JN25BC) wkd:

1999-08-22									
0500	0518	S51ATJ	JN75	28	26	14	5	2	c
0600	0655	DL9MS	JO54	27	26	13	6	1	c
0657	0719	DF8AA	JO60	27	27	6	2	2	c
1999-08-23									
0300	0339	YU7KB	JN94	26	26	21	6	77	c*3
0400	0420	I8TWW	JN70	27	26	16	2	3	c
0500	0517	OE6IWG	JN77	27	27	12	1	1	c
0600	0630	OE3MWS	JN88						nil
1999-08-24									
0200	0300	LY2BIL	KO24						nil*1
0300		EU6BMS	KO45						*2
0303	0405	LY2BIL	KO24	26	26	8	8	0.5nc*2	
0405	0445	DF8IK	JO30	26	27	13	5	0.5nc*4	
0500	0522	DL2ARD	JO60	27	26	12	7	1	c
0600	0620	DK5KK	JO63	27	27	14	22	2	c

LV1300-150: Efficiency

[V] A82 @ QD-1



1999-08-27

0400 0430 LA5KO	JO59				nil
0600 0649 9A3PA	JN85	27 26 9	21 1	c	

F/DD0VF (JN15XE) wktd:

1999-08-25

0750 0814 DL9MS	JO54	27 26 20 3	2	c
0820 0847 DK5KK	JO63	27 26 24	1	c

F/DD0VF (JN24CW, 1562m asl) wktd:

1999-08-26

0437 0450 DH3YAK	JO31	27 26 4	1	c
0455 0515 DL2ARD	JO60	27 26 11 2	2	c

Remarks: *1 1836km sri good take off 350-020 deg. only. *2 hrd 03:03 a single "Y", so I continue with LY2BIL-sri no RRR hrd powerline noise S1. *3 3 periods like leonids. *4 Completed via tropo at 0445 utc. Equipment: JN25BC IC275H, 100W, 8el 3.5m boom 1070m asl 8m agl; JN15XE and JN24CW 9ele F9FT (tnx DL4DTU), 1562m asl 2m agl; JN04FT 18ele M + PA.

We had very nice two weeks in F again - I've spend less time for the radio. I had much more fun with other things... Trips to JN15 and JN24 where limited by the family. There was no gsm-net or a digi available for me in jn25bc (valley). I was qrv frm JN24CW for tropo twice (appr 2 hours) - wktd some F.ON, HB9 and DL up to JO30 (DG6PY/P - 59+10) and JN58. ON4VHF/B was 529 stable - but not so much

HB0/PI4TUE Results

After a long night driving without sleeping we arrived in Malbun (+1600m ASL) Liechtenstein around 06 local time in the morning. At 0830 the ski-lift opened and we could take up all our gear. Yes we had to take everything up by ski-lift to the restaurant (+2020m ASL) where we stayed the next 14 days. This took us about 2 hours continuous work to get everything up including antenna towers. Than we had to carry everything to the restaurant 100m Away from the lift. Some of us were still not tired after that and started to build up some antennas. We were lucky we did build up the EME H-frame including the rotators because it was raining the next day.... We build up the antennas in the restaurant and late in the afternoon we could mount them. After checking the SWR we were happy because only 120W reflected from 1.8 kW out. The year before we had nearly 500W reflected power... The antennas couldn't be raised enough to look over a small hill in front of the hotel towards ON/PA/G for tropo and meteor-scatter so only weak signals were heard. Never

0425 0500 TK5JJ	6 16 1 c
2135 2215 HA6NQ	1 16 1 c
1999-08-05	
0600 0632 EA4FQP	4 4 1 c
0632 0700 EA7AJ	tailend, no copy
0700 0714 EA3TI	4 3 cs
2200 2300 GM0HUO	26 1 9 3 nc
2300 0000 IW0GPN	27 2 4 nc
1999-08-06	
0500 0533 GM4AFF	4 11 75 cs
0533 0534 GM4JJJ	1 30 crs

Friday Aug 06 around 21 local time a 'Föhn' wind started. This wind is like the Mistral in France, giving warm air from the south. As we are on a mountain top we had winds from 100 to 120 km/h! We had to take down several antennas else they had been damaged or fallen down on the roof of the restaurant. This was very risky. We almost had to secure ourselves because of the strong wind. This is a continuous wind not like a storm here in western Europe with lots of QSB on it. The break of the EME antenna rotor broke during the storm so it was not possible to put them up again. We found out the morning after the storm. We decided to put up a single yagi for our next days MS and trop skeds. But again in the night the Föhn came up and we had to take down the antenna again. So unfortunately for all the stations who had skeds with us we couldn't be QRV due to the fact that our antennas were down. And if we did put them up they wouldn't have stayed in direction because the brake was broken. In this strong wind it certainly was not possible to keep the antennas in the right direction. Thanks for your report, John (pe1ogf@IAEHV.NL).

18TWK (JN70GR) worked during Leonids 1999:

1999-11-10			
2240 2310 DK5YA	JN49BC	27 27 7 1 c	
1999-11-18			
0107 G4XBF/p	JO00EW	39 38	crs
0114 LA0BY/p	JO59IX	39 37	crs*
0120 G0KPBW	JO02	37	ncrs
0123 DL4ABJ		37 37	ncrs
0126 SM7THS	JO76	59 59	crs
0129 LA0BY/p	JO59IX	37 37	crs
0133 SP2HLF		59	ncrs
0140 DL4ABJ		39 39	crs
0141 DL3JAN	JO60KT	59 59	crs
0141 DL2RWH		59 59	crs
0142 DF8XR		59 59	crs
0142 ON1AEN	JO10UV	59 59	crs
0157 HA0HO	KN07SU	59	ncrs
0157 PA2???		59	ncrs
0214 HA0HO	KN07SU	59 59	crs
0215 SP3KEY		59 59	crs
0217 SP9EWO		59 59	crs

0220 DL9YEE		59 59	crs
0237 PA3DOL		59 59	crs
0243 SP4MPB		59	ncrs
0247 SP2NJE		39	ncrs
0251 SP1JVG	JO84LL	59 59	crs
0310 OZ1BEF	JO46OD	59 59	crs
0311 DL1HTT		59	ncrs
0316 ON4CGP	JO20IV	59 59	crs
0326 DL5XU		59 59	crs
0329 DH8BQU	JO74AA	59 59	crs
0329 DL7AA		59 59	crs
0329 DD0VF	JO61VA	59 59	crs
0343 LZ3BD	KN12	59 59	ncrs
0343 YU7KB	JN94XX	59 59	ncrs
0349 HA8CE	KN08	39	ncrs

Until 0415 no more reflections, so slept a little...

0930 G4XBF/p	JO00	59 59	crs
0931 PA3DOL		59 59	crs
0932 F1AKK	JN39	59 59	crs
0935 DJ3VI		39	ncrs

Remark: * DXCC #41 Thanks, Stefan! Notes:

1) Between 0157-0214, 0220-0237 and 0251-0310 had atmospheric noise over S9, so was not able to listening the band.

2) Maybe a lot of people (QRM)... but this time I chose to stay more far from .200 calling frequency. I think very useful that DX stations fix their QRG some ten of kHz from .200.

This time was indeed possible to listen two good bursts from LA0BY/p and easily complete with him, my actual ODX! Equipment: IC271 + Front end MuTek, 4CX250R (400W), 4218CC, DTR DF7KF, OH5IY rev.4.3. 73, Carlo. Thanks for your report, Carlo.

IT9VDQ writes:

Hello Friends, as usual, this year too, it was impossible for me to reach my VHF qth...of course! So only qrv from my noisy home qth, with a 9 element Tonna at 3 m agl and about 300 W (very big station!). The peak was accordingly with OH5IY info - Thank you Ilkka for your job) - and I was able to listen a lot of friends call signs, but only very few QSO's. Worked from 0152 to 0238: OK1KRY, HA5OV, HA8CE, SP3SFN, HA0OH (need locator), DL3YEL and DL5WG (need locator), all 1 burst QSO's. Heard: I8MPO, IK3UNA, I1JTQ, I8TWK, HA9MDP, F1AKK, 9A1CAL, TK5EP, YO4FYQ, DL1EAP, 9A2RD, PA3BIY, DL4MEA, HA1YA, HB9Q, PE1OGF, UY7KB, 9A3PA? and many, many others. At last I got a new square form SP3SFN: JO82(!) over 1636 km. Also interesting qso with Ulrich DL3YEL, about 1580 km. Ciao, Gius. Thanks for your report, Gius.

IW0GPN (JN62FB) wkd during Leonids:

1999-11-18			
0125 SP2OFW	JO93AC	59 37 1	crs
0143 OZ8ZS	JO55RT	37 37 1	crs
0143 DK5DQ	JO31PH	39 39 1	crs

0220 DH8BQA/P JO74AA 59 59 1 nc
 0221 LY2SA KO14LL 39 39 1 crs
 0236 ON4KHG JO10WK 59 59 1 crs
 0250 DH8BQA/P JO74AA 59 59 1 crs
 0310 SP3SFN JO82TM 59 59 1 crs
 0310 DK2CF JO42WQ 59 59 1 crs
 0402 EA5HV IM98 59 59 1 crs

Heard: EA3ADW, G0KPW, YU1WP, EA7GTF, OZ1LPR, SV1OE, SP9MRQ, G8XVJ, PE1RBG, LY2MW, LZ1ZP, PD0PQS, G4XBF/P, HA8UG, HA0HO, PA0GUS, HA8CE, LA4LN, DL9USA, EA6FB, EA2AMA, S59AL, I8MPO, SM5BSZ, IW5DAN, IK5OEA, IK0BZY, IK0OKY, IC8FAX, I8TWK, I4XCC.
 Equipment: FT-736R, 16ele ly (4.8wl), 150 watt.

Notes: This was my first experience on random, and my second shower of all my life. I have heard long bursts (max length 2 min) starting around 00 until 0430 (when I went QRT). I think that the peak was been around 0145 - 0200. Heavy QRM in all band from .150 to .35 due to the crowd of stations that appeared on my trx on every burst, it was very difficult to pick up only one station to do QSO cause I was very confused about which station call. Thanks for your report, Alex.

IW2DVK (JN45MR) wkd on 144 MHz:

1999-11-18
 0100 0109 DH2OAA JO42TU 27 27 3 4 10 cs
 0115 DJ5BV JO30KI 38 27 crs
 0137 0143 G1WPF IO91RP 37 37 crs
 0157 EA3TI JN11DO 59 39 crs
 0207 OZ6GBA 37 27 crs
 0211 DD3DX JO31TN 39 59 crs
 0223 SM5BSZ JO89J 59 55 ncrs
 0224 PA1AT JO32HK 39 59 crs
 0229 PD1PIV 27 ncrs

Heard: DL3GAC, DK5TE, OK2ZZ, SP2OFW, SM6DWF, EA4AMX, 9A2PT, SP9EWO, SM7BOU, PA5DD, SM0EPX, PE1PKR, SV1BTR and many other NC calls. Thanks for your report, Roberto.

LA0BY/p in JO59IX wkd via MS on 144 MHz:

1999-11-17
 2200 2230 IK1SPR JN34TQ 27 1 1 1 ncs
 1999-11-18
 0000 0020 IW0GPN JN62FB nils*4
 0020 HB9SUL JN46LA 38 37 1 crs
 0020 HA0HO KN07SU 37 1 ncrs
 0030 0041 IK0BZY JN61GW nils*5
 0041 0100 IK1EGC JN35UF 37 39 1 ncrs
 0110 F6HVK JN27LH 37 37 1 crs
 0110 F8OP JN26MM 38 38 1 crs
 0114 S58J JN76EG 37 27 1 crs
 0114 I8TWK JN70GR 38 39 1 crs
 0119 DD1WKS JN39PN 38 38 1 crs
 0130 S51FB 37 36 1 crs
 0130 I8TWK JN70GR 37 37 1 crs*7
 0130 S53X JN65WS 37 37 1 crs
 0141 IK0BZY JN61GW 37 59 1 crs
 0145 DG5HV JN43XQ 59 59 1 ncrs
 0156 S57JA JN76GB 37 37 1 crs
 0156 DL5GAC JN47SS 38 39 1 crs
 0201 0205 DL5ROB JN68HG 39 37 3 crs
 0205 S51DX 37 1 ncrs
 0210 T94KU JN94JF 48 59 1 crs
 0210 S51TE JN76BI 37 27 1 crs
 0210 S53T JN75DW 59 59 1 crs
 0210 OE6IWG JN77PK 37 37 1 crs

0210 S52EZ JN86DT 59 27 1 crs
 0210 S57A JN65TW 37 59 1 crs
 0210 DK0OG JN68GI 37 37 1 crs
 0214 OK1DOZ 37 37 1 ncrs
 0225 S51AT JN75GW 38 37 1 crs
 0229 SQ9HYM JN99MT 37 39 1 ncrs
 0230 0240 EA3DUY JN12LD nils*8
 0240 F6GGF JN18 49 59 1 ncrs*1
 0240 F5HRY JN18EQ 59 59 1 crs
 0259 OH6LRL 39 59 1 crs
 0306 OH8HDL KP34VJ 39 39 1 ncrs
 0312 GW4VEQ IO73 37 37 1 crs*2
 0313 GW4VEQ IO73 59 59 1 crs*2
 0319 F6CGJ IN78 59 53 1 crs
 0319 G0PES IO83 59 59 1 crs
 0324 G8TIC IO82VF 37 37 1 crs
 0330 0340 EA1EBJ IN73FL nils*9
 0342 F6DRO JN03SM 37 37 1 crs
 0347 F/G8MBI JN04FT 39 27 1 crs
 0349 F1DUZ JN97NJ 39 39 1 crs
 0354 G4AEP IO91NJ 39 39 1 crs
 0354 G1SWH IO83QO 39 39 1 crs
 0355 G8XVJ IO83RJ 59 1 ncrs
 0355 G4DOL IO80SP 37 57 1 crs
 0356 F1DUZ JN97NJ 59 59 1 crs
 0400 0420 EI4DQ IO51WU nil s
 0441 UA3MBJ KO88SA 59 59 1 crs
 0600 0630 UT5ER KN78ER 39 26 3 3 5 ncs*3
 0630 0700 UA4AQL LO20QB nils*10

Remarks: *1 He did not repeat the callsign of the stations he worked; *2 The first QSO was made when my antenna was pointing to OH. Worked him again in the same burst after I had turned my antenna around; *3 After the sked I realised the wind had turned my antenna off by 30 degrees (1963km). *4 1998km; *5 2012km; *6 2158km; *7 2156km; *8 2054km; *9 2138km; *10 2435km.
 Heard random: I4XCC, IK0BZY, 9A4FW, OH8UV, HA1BC, OK2MWR, SP4MPB, F4ARU, DG9NCX, GM4YXI, TK5EP, IV3BBR.

The Leonids did not quite live up to my expectations this year. The maximum occurred exactly as predicted, but was much shorter than last year. There were lots of long reflections, albeit with much fading and usually not so strong. Had difficulties copying the other stations at times. Worked 35 complete contacts, with I8TWK being the ODX. Again I had no success with my few skeds, although the scheduling was mostly OK. Went QRT at 0700 UTC.
 I was surprised to hear so few reflections from stations at shorter distances. Not a single PA or ON came through, and only few DL. This was also commented on by others. Thanks for your report, Stefan.

Perseids'99 by LZ7Y

LZ7Y (KN41AX) wkd on 144 MHz:

1999-08-07
 0000 0100 ES2RJ/8 KO28KL nil*1
 0100 0200 ES2WX/8 KO28KL nil*1
 0200 0220 IK1PAG JN35SB 27 37 12 m 5 c
 0300 0322 UA4AQL LO20QB 27 27 m m 2 c
 0325 0340 UA4API LO20QC 28 29 m m 12 c
 0500 0510 IV3HWT JN65ST 28 27 m m 2 c
 0600 0630 EU6MS KO45IN 28 28 m m 2 c
 0700 0800 IK2DDR JN55GN nil*2

Meteor Scatter

0800 0900 UT5ER	KN78ER 59 59	c tr	1850 1900 S54AA	27 27 4 8 2	cr
0900 0950 RV3ZR	KO80CL 28 39 4	17 2 c	1900 1935 OK1DQA	JO60TC 28 27 4	10 1 c
1000 1055 I1JQT	JN35UB 28 26 8	4 6 c	2000 2025 S55AW	JN75DS 28 27 m	m 2 c
2000 2040 S57TW	JN75EX 27 28 5	15 3 c	2050 2105 DL5ROB	28 27 5	m 1 cr
2040 2100 DH7FB	28 27 5	18 2 cr	2105 DH0GHU	JN38VN 27 27 5	m 1 c
2100 2200 F9HS	JN23AT 27 26 1	4 1 nc*3	2200 2255 DL8EBW	JO31NF 37 26 4	6 6 c qrm
2200 2240 DL3YEL	JO41EV 28 27 3	5 1 c	2300 2400 PA2DWH	JO22GD 27 26 4	10 1 c*12
2240 2255 IC8FAX	JN80 28 27 3	12 2 cr*4	1999-08-12		
2350 0010 DJ7OF	JO51HQ 28 27 4	10 3 cr	0000 0100 PA0JMV	JO21PM 27 38 5	m 2 c*19
1999-08-08			0030 0045 IBTWK	JN70GR 27 27 m	m 3 cr
0135 0155 DL9AN	JO62SN 28 29 m	m 28 cr*5	0045 0100 9A1CCY	39 38 m	m 10 cr
0240 0250 S51AT	JN75GW 29 27 m	m 2 cr	0100 0110 HA5CW	37 27 m	m 7 cr
0300 0315 DL8CMM	JO52VM 27 27 8	m 2 c*6	0110 0130 PA0RDY	JO22KJ	nil*19
0400 0415 DL5WG	JO52VK 28 38 6	m 3 c	0130 0150 OE6IWG	28 38 m	m 3 cr
0500 0550 DF2ZC	JO30RN 27 27 3	6 1 c	0200 0242 DK8EL	JO31LJ	nil
0600 0625 DL1UU	JO62SP 37 37 7	m 10 c	0242 0252 DL4MDQ	28 39 m	m 4 cr
1300 1400 ON4AMX	JO20KV 26 26 1	3 nc*7	0300 0400 PE1LCH	JO23WF	nil*19
2035 2045 DK9OY	JO52CK 28 27 m	m 3 cr	0500 0600 EA6VC	JM19MP	26 26 6 13 1 c*13
2100 2130 DL5DTA	JO61SD 28 28 m	m 6 c	0525 0535 HA8CE	38 27 m	m 10 cr
2200 2225 OK2SBL	JN99HQ 27 38 m	m 5 c	0600 0700 F/G8MBI	JN04FT	nil
2225 2245 OK2MWR	JN99HQ 28 27 m	m 10 c	0700 0715 LY2SA	KO14LL 27 38 m	m 3 c
2250 2300 S57EA	28 27 m	m 1 cr	0800 0900 F6FHP	IN94TR	nil*19
1999-08-09			09000950 HA6NG	JN98WA 27 27 5	m 3 c
0000 0055 DL5XV	JO53AP 26 28 4	m 5 c*8	1000 1100 DL8BDU	JO43AA	nil
0200 0220 DL4ABJ	JO42XP 27 26 5	12 4 c	1100 1137 HB0/HB9QQ	JN47TC 27 26	c
0400 0500 IW1AZJ	JN35UB	nil	1155 1205 DL9YEE	JO41GV 37 37 m	m 5 c
0500 0510 I3LGP	JN55WJ 38 27 m	m 4 c	1200 1300 DH2OAA	JO42TU	nil*14
0520 0540 OK1KT	JO70WE 27 27 4	m 1 cr	1300 1400 DL8GP	JN39LL 27 38	nc
0600 0625 DL1EJA	JO31DS 38 27 m	m 17 c	1400 1500 I8MPO	JN70FP	nils
0655 0710 DK5TE	JN58BG 28 37 5	m 1 cr	1500 1600 9A2RD	JN65TF	nils*15
0735 0745 LY2WR	KO24OQ 28 27 m	m 1 c	1600 1700 ON1ALJ	JO10UU	nils*16
0745 0755 LY2BIL	KO24OQ 28 28 m	m 2 c	1800 1900 PA3BZL	JO22	nil*16
0850 0905 UT8AL	KO61WP 27 38 4	7 2 c	1900 1920 DK5KK	JO63EX 27 26 m	m 3 c
0905 0920 IK2DDR	JN55GN 27 27 6	m 3 c	1935 1945 OK1FID	JO80CH 27 37 m	m 2 cr
2100 2200 DL1SUN	JO53PN 26 26 2	3 nc*8	1947 2000 DF7KF	JO30GU 38 37 m	m 10 cr
2200 2250 F6HVK	JN27LH 28 27 m	m 3 c	2010 2030 DF8LC	JO53GT 28 38 m	m 3 cr*16
2300 2320 OK1MAC	JN79IO 28 26 m	m 8 c	2100 2200 PA3BIY	JO22EB	nil*16
2320 2335 OK1KJB	28 38 m	m 3 cr	2145 9A2RD	JN65TF	39 39 crs
1999-08-10			2148 DF8LC	JO53GT 39 27	crs
0000 0040 IW1AZJ	JN35UB 26 27 1	3 c*8	2149 IK1LGV	JN44JK 27 37	crs
0100 0200 F6DRO	JN03SM	nil	2200 2300 DL8EBW	JO31NF	qso b4
0200 0300 ON4FI	JO20IV	nil	2201 IK1MTZ	JN35TB 39 27	crs
0300 0330 OH2BNH	KP20LG 27 37 4	10 1 c*19	2202 SP2IQW	27 27	crs
0400 0440 DL3IAE	JN49DE	nil	2229 IK1EGC	JN35SD 39 39	crs
0440 0505 DL4NAA	JN49NX 28 27 5	m 2 cr	2235 DL9OBD	JO42UJ 39 27	crs
0700 0722 DF1IAZ	JN49LD 27 37 5	8 2 c	2238 9A4FW	JN95JG 39 27	crs
0750 0810 DJ3MY	JN58QD 27 48 3	m 5 cr	2243 DK2PE?	37 27	crs
0815 OK2PTC	27 27 3	6 1 nc qrt?	2250 DK5YA	JN49NX 27 39	crs
0900 0925 ON4AVJ	JO11UB	nil	2257 DF6NA	JN49XS 39 27	nc
0925 0935 DK3WG	JO72GT 27 28 m	m 3 c	2300 2350 DL1EAP	JO31	28 27 6 3 3 c
1140 1150 DL1DUR	28 28 m	m cr	1999-08-13		
2100 2117 DL4MEA	JN58JD 28 27 m	m 2 c	0000 0025 PA3FOC	JO21FW 26 27	c
2120 2132 SP2OFW	JO93AC 28 37 m	m 3 cr	0036 DJ9EV	JN48 37 37	crs
2145 2155 DL7VXD	27 27 5	m 1 cr	0037 HB9BQU	JN37VD 37 37	crs
2200 2230 DF8IK	JO30JT	nil	0044 DL9USA	JO71 37 37	crs
2230 2245 DJ5RE	27 37 6	m 10 cr	0050 PA4?HF	59 59	nc
2300 2320 OK1YA	JN78 27 39 m	m 5 c*6	0100 0140 DF1BN	JO31GD 38 28	c
2330 2340 OK1FFD	37 37 m	m 3 cr*9	0158 DK5YA	JN49NX 39 39	crs
2340 2350 IZ5EME	JN52NS 28 37 m	m 4 cr	0200 0300 DJ2QV	JO31OM	nil
1999-08-11			0258 DF1IAZ	JO49LD 39 39	crs
0000 0017 LY2MW	KO24PQ 27 27 m	m 6 c*10	0300 0310 DD0VF	JO61WB 48 49 m	m 150c
0020 0035 DH8BQA	JO73CF 27 27 4	m 1 cr	0339 IZFAK	JN450B 28 28	crs
0200 0220 I4XCC	JN63GV 28 39 m	m c	0400 0500 PB1TT	JO22HA	nil*17
0400 0415 DL2FDX	JO40LG 28 28 5	13 1 c	0530 S57S	JN76JB 27 27 m	m cr
0500 0550 ES2RJ	KO28KL 26 27 4	6 1 c	0540 0610 HA3UU	27 39	cr
1600 1610 RX3QFM	KO91FM 27 27 6	m 1 c*11	0600 0700 I8MPO		nil

0700 0800 DH2OAA nil
 0800 0842 UA3TCF LO26IU 27 26 m 60 cr
 1000 1045 OH3AWW KP21QF 26 26 4 8 2 c*19
 1100 1117 ES2WX KO28KL 37 38 6 4 5 c
 1200 1230 DL8BDU JO43AA 37 37 4 5 7 c
 2200 2300 PA3BIY JO22EB nil*18
 2300 2400 PA2TAB JO32GF nil*18
 1999-08-14
 0255 0305 HB9FAP JN46EW 26 27 6 m 2 cr
 0305 0335 PA2DWH JO22GD 37 26 cr
 0350 0405 HA3UU 37 49 5 m 5 cr
 0557 0615 S51AT JN75GW 37 28 m 5 cr
 0620 DG3GAG 38 38 5 m 10 ncr
 0645 0712 OK1UAK JO70MB 27 27 m 2 cr
 2110 2355 PA3BIY JO22EB 1 1 nc

Remarks: *1 They had some problems with their equipment. *2 He had forgotten about this sked, but we completed another one with no problem. *3 I had big QRN, sorry! *4 I heard you via FAI some hours ago. *5 More bursts then silence! *6 Very strong signal! *7 Bad reflections; *8 Weak signal! *9 Bad modulation. *10 DH8BQA was calling me all the time. I had a sked with him, but one hour later?! *11 After the sked we completed a Tropo QSO - 1324km! *12 Big QRM from PA9KT and I8TWK. It was good that Dick's transmission was 500Hz up; *13 HA8CE was calling me over you, so I had to complete a QSO with him to make the frequency clear...! (2117km); *14 I received your page message but with a wrong frequency. Sorry! *15 We completed later on random; *16 We had a thunder storm and switched off the equipment. Sorry! *17 Big QRN! *18 No power! Sorry! *19 DX >2000km. Thanks for your report.

OE6IWG (JN77PK) wkd on 144 MHz:

1999-11-18
 0210 LA0BY/p JO59IX 37 37 1 crs
 0220 F/G8MBI JN04 37 37 1 crs
 0222 F1DUZ IN97 37 37 1 crs
 0235 IK3UNA JN55 37 59 1 crs
 0255 YU7KB JN94XX 37 37 1 ncrs*1
 0301 EW1RZ KO33 37 27 1 crs
 0312 0331 OH6MAZ KP21IG 26 26 2 6 cs*2
 0338 RX1AS KO59FX 37 37 1 crs
 0359 PE1OGF JO21QJ 59 59 1 crs*3
 0412 G0PES IO83LS 59 39 1 crs
 0422 HA0HO KN07SU 59 59 1 crs*4
 0444 0456 F1AKK JN39CC 26 4 nc

1999-12-14
 1700 1740 GW7SMV IO81LN 27 3 4 1 nc
 2000 2035 RW1AW KP50EB 27 27 6 4 6 c
 2100 2145 Z30B KN01PA 27 27 3 6 14 c
 2339 0010 LZ2FO KN13KX 27 27 3 3 cr
 0032 0200 UR5BAE KN29SM 27 36 m 8 nc*5

Remarks: *1 Sri, no rr; *2 Hello Hannu, nice to work you after so many skeds, tx fr KP21! *3 Hrd John over 150 seconds with S2 to S9+! *4 Sidescatter with booming signal; *5 Sri, NO chance to work him during 90 mins. Thanks for your report, Walter.

OM3KKF (JN98UI) wkd on 144 MHz during Leonids:

1999-11-16
 1750 1759 F1AKK JN39CC 27 26 3 11 cs
 DG6JF/p nil
 2300 F1NSR nil
 1999-11-17

0100 PE1OGF 38 ncr
 1999-11-18
 0048 G7LXK 27 27 ncr
 0130 DK2ZC 59 59 cr
 0130 DK4TG 59 59 cr
 0134 GM4OGI 59 ncr
 0147 DH4KJM 38 ncr qrm
 0144 F6HVK 59 59 cr qrm
 0145 TM1E 59 59 cr
 0146 F6HTJ 59 59 cr
 0148 F5FLN 59 59 cr
 0158 TK5EP 59 59 cr
 0201 G4XBF/p 59 ncr
 0205 DL2IAN 59 59 cr qrm
 0207 G0CUZ 59 59 cr
 0211 EA3DXU 59 59 cr
 0218 F5FLN 59 59 cr
 0220 PA0JMV 59 59 cr
 0220 F5HGO 59 59 cr
 0221 F1DUZ 59 ncr
 0226 F6CGJ 59 59 cr
 0225 DL5WG 59 59 cr
 0243 EA4AMX 59 ncr
 0255 HB9FAP 59 ncr
 0355 ES1II 59 59 cr

Equipment: Icom IC-275H, GS35, preamp MGF 1302 and 16le F9FT. Operators: OM3WBC, OM7IC, OM7IR, OM7JG, OM7PY and OM7AQ. Thanks for your report, Zoli (OM7AQ).

ON4KHG (JO10WK) wkd on 144 MHz:

1999-11-18
 0113 I1JTQ JN35UB 59 59 1 crs
 0152 I21BPN JN35VG 59 59 1 crs
 0221 IV3HWT JN65ST 59 59 1 crs
 0235 YU7MS KN05EF 59 59 1 crs
 0236 IW0GPN JN62FB 59 59 1 crs
 0240 OH1XT KP01UK 59 59 1 crs
 0318 CT1FOH IN50RA 59 59 1 crs
 0647 I8MPO JN70FP 37 27 1 crs
 1999-12-13
 0020 0037 YU7MS KN05EF 27 27 5 6 2.5cr*1*2
 0120 0155 UR5BAE KN29SM 27 28 6 2 3 cr*1
 0135 0147 9A4FW JN95JG 28 28 m 10 cr*1*2
 0155 0212 S51MQ JN75NT 27 27 m 1 cr*1*2
 0232 0247 S51AT JN75GW 27 27 m 2.5cr*1*2
 0320 0335 HA6NY JN98WC 28 28 m 4 cr*1*2
 0345 0402 HA5OV JN97NJ 28 28 m 3 cr*1*2
 0420 0435 LA0BY JO59FW 29 28 m 13 cr*1*2
 2202 2227 EU6MS KO45IN 27 27 12 8 10 cr*1

Remarks: *1 BCC Contest; *2 Sidescatter (beam +/- 60). Equipment: 130 W & 9 ele Yagi. Thanks for your report, Gaetan.

PA0ZM writes:

The Leonids 1999 were disappointing. Also frustrating was the bad behavior of many stations breaking-in on ongoing QSO's and calling during the periods that one should have to listen.

PA0ZM (JO32GK) wkd during Leonids:

1999-11-18
 0130 YO3JW KN34CK 37 39 cr
 0203 TK5EP JN41IW 59 38 cr
 0211 HA8MW 37 ncr qrm
 0241 OH1XT KP01UK 59 37 cr
 0251 9A2AE JN86HF 59 59 cr

0309 OK2PIN		39 39	cr	1400 1500 RK3AF	KO75WO 3726 1	5	c*5
0313 SM2CKR	KP03DQ	27 59	cr	1999-09-03			
0330 HA1BC	JN97		ncr qrm	0500 0530 ER/DK5KK	KN47	26 26 5	nc

At this moment I was fed-up with the unorganised manner of a lot of hams so I went to bed. By the way I heard the following calls: HA6ZB; IK8FAX; OH6KSR; YU1IO; OH8K; LA8KV; SP9QMP; RX1AS very strong in a long burst of 2 min.; SM2EMX; LA7DFA; OM3RO; 9A3SF; UT5EC; OK1AX; 9A1CAL; HA7UL and LA6MV. Furthermore it was compared to last year very seldom to have long burst. Most of the time it seems that there were a big amount of short pings instead. The forecast of the time of maximum was quite accurate this year. Thanks for your report, Geert.

PA3BIY (JO22EB) wkd on 144 MHz:

1999-01-15							
2200 2235 EU6MS	KO45	28 27 10 41 3	c*1				
1999-01-22							
2200 2225 EU6MS	KO45	28 28 10 15 2	c*1				
1999-01-29							
2200 2240 EU6MS	KO45	27 27 21 21 3	c*1				
1999-02-12							
2200 2220 EU6MS	KO45	28 28 15 15 2.5c	*1				
1999-02-19							
2200 2220 EU6MS	KO45	27 27 8 16 3	c*1				
1999-02-26							
2200 2232 EU6MS	KO45	29 28 13 20 3	c*1				
1999-03-05							
2200 2240 EU6MS	KO45	27 27 14 21 10	c*1				
1999-04-25							
1930 2045 G0KZG/mm IN18		27 26 8 10 1	cr				
1999-05-02							
1400 1435 G0KZG/mm IN28		27 26 10 12 2	cr				
1999-05-02							
1955 2040 G0KZG/mm IN29		26 27 8 13	cr				
1999-05-03							
2035 2120 G0KZG/mm IN19		27 26 5 10 1	cr				
1999-05-04							
0515 0615 G0KZG/mm IO10		27 26 8 12	c				
1999-05-09							
0330 0400 G0KZG/mm IO30		27 27 21 36 1	c				
1999-06-06							
1240 1345 OH5A	KP53NE	26 26 7 6 1	cr				
1999-07-09							
2100 2112 LY2WR	KO24PQ	28 26 10 20 2	c*2				
1999-07-29							
0000 0100 SM6CMU/2	KP17QE	26 26? 3 4	<1 nc				
1999-07-31							
2343 2357 9A0DX	JN82	28 38 m m 3	cr				
1999-08-07							
1830 1905 SM/DL9MS	JP72	27 26 10 5 1	cr				
1999-08-11							
0800 0830 LY2WR	KO24PQ	28 48 m m 10	cr				
1500 1532 IW7DEC	JN81	27 27 6 5 4	c				
1999-08-12							
0116 0139 HA6NY		28 37 11 10 30	c				
1150 1200 OH3AWW	KP12	27 27 13 5 1	cr				
1750 1800 RZ1AWT		39 39 m m 8	cr				
2200 2300 LZ7Y	KN41	26 6 1 1	nc*3				
1999-08-13							
0000 0020 OM9N	KN18	27 37 m m 10	c				
0440 0545 TA1ZK/O	KM29	37	10 ncr*4				
0600 0613 ES2QH	KO29LL	27 27 3 2	15 cs				
0640 0652 EA3BB	IN62XL	38 37 m m 10	cr				
0111 S52EZ		39 27 1	20 crs				

1999-09-05							
1745 1808 G0KZG/mm IN59		28 27 6 16	cr				
1999-11-07							
0630 0640 IK0BZY	JN61	26 27 10 12 17	c*6				
1999-11-15							
2245 2306 EA/DF9OX	IN63	27 27 6 14	1.5cr				
1999-11-18							
0047 OH6MAZ	KP22	38 38 1	30 crs				
0210 OK2VYG		39 59 1	30 crs				
0220 OM5KM		59 39 1	30 crs				
0223 RW1AW	KP50EB	59 59 1	60 crs				
0329 HA7UL	JN97	39 39 1	30 crs				
0403 IV3HWT		39 39 1	30 crs				
0454 UA1WER	KO47EU	37 59 1	40 crs*7				

Remarks: *1 Regular weekly sked; *2 Just for fun. Always nice signals from LY2WR on MS! *3 It turned out later that they had a lot of QRN at that time, so they QSY'd after 30 minutes to random; *4 I copied some (weak) reflections from Andrea on 144.167, were he was running random operation. Unfortunately a birdy made life difficult, and it turned out that Andrea had not copied much from me. Earlier that night on SSB I got some good reflections from him, but it is hard to crack a German pile-up when you are at 2150 km! *5 QRB is 2064km. I got 1 nice burst after 15 minutes with calls + 26. No more reflections after that. QRT? *6 CW, 1 minute periods.
Heard twice on random: UT5EC (2200km) in 60 sec bursts! Equipment: Home made, 400W, 2x9ele.

Leonids 1999 performed much like predicted. However, much of the fun was lost in terrible static rain which started around 23 UTC and continued (with some very short breaks) till 0400. At times it would cease, and I could here signals on 144.200. But by the time I'd push the Microphone the tickling would already start again. A most annoying experience!! I worked RW1AW at full S9 Static. Although my noise blander reduced the static a bit, RW1AW came in chopped in pieces, hi! At 0100 UTC I had a sked with UA1WER (no static for 30 min!!), but I did not copy anything. Much to my surprise I was called by UA1WER when I was calling OH8K, who resided on 144.228. After releasing the microphone, I got a "Again?", so I gave calls + report (to OH8K!). Then "Please again your call, the UA1WER!" Then I corrected the calls and we finished it properly. So after a nerve breaking night, still a reward!

This maximum was predicted quite accurately by McNaught and Asher. The model that McNaught and Asher have developed predict some interesting events for the next few years as well! Mind you, these will not be Bolides, like we experienced in 1998, but the same kind as in 1999. These are the forecasted dates and times:

2000: 18 Nov. 0344 UTC and 0751 UTC (No prediction on ZHR)
2001: 18 Nov. 1000 UTC (ZHR 1500), 1731 UTC, 1819 UTC (Radiant below horizon for EU)
2002: 19 (!) Nov. 0400 UTC (ZHR 15000!!), 1036 UTC (ZHR 25000!!).
More info can be found on <http://science.nasa.gov/newhome/headlines>. Good dx and hope to catch you

on MS, Peter. Email: pa3biy@dds.nl - PR: PA3BIY@PI8HGL.#ZH1.NL.EU. Thanks for your report, Peter.

PE1HWO (JO21GV) wkd via MS on 144MHz:

1999-08-21					
0600 0645 EA3KU	JN00JV	27 36	c		
1999-08-22					
2200 2230 IK0BZY	JN61GW	27 26	c*1		
1999-08-29					
2300 0000 YP0T	KN45	27 27	cr		
1999-09-04					
0100 0140 YP0A	KN27OD	26 27	cr		
1999-09-09					
1230 1315 IK1/DK5DQ	JN43BV	26 26 8 9 3	c		
1999-10-02					
2305 0005 F1JRD	JN13WO	27 27	c		
1999-10-21					
2300 2325 OH6MAZ	KP21IG	37 26 m m	c		
1999-11-11					
0030 0110 EA/DF9OX	IN83TH	26 26	c		
1999-11-15					
2020 2045 EA/DF9OX	IN63SN	27 27	cr		
1999-11-17					
0440 0529 3A/PA2CHR	JN33	26 26	c		
0700 0710 T94KU	JN94JF	37 37 1	cs		
0800 0900 CT1FAK	IM57		1 nc		
2130 2200 CT1FOH	IM59		nil		
1999-11-18					
0000 0100 EB4FQP	IM68TV	sri not qrv			
0226 IV3HWT	JN65ST	59 59	crs		
0248 9A2KK	JN85KV	59 59	crs		
0250 HA8CE	KN06EN	59 59	crs		
0252 LZ2FO	KN13KX	59 59	crs		
0338 9H1CG	JM75	59 59	crs*2		
0404 HA1BC	JN87PU	59 59	crs		
0413 IBMPO	JN70FP	59 59	crs		
0436 EA3ADW	JN11CQ	59 59	crs		
1999-12-14					
0707 LZ6T	KN22IS	27 28	c?r*3		
0728 IB7WK	JN70GR	38 38	cr*3		
0809 HA6NQ	JN98WA	27 27	cr*3		
0840 S51AT	JN75GW	38 27	cr*3		
1804 EU6MS	KO45IN	38 28	cr		
2153 YU7MS	KN05EF	38 37	cr		
1999-12-15					
0019 LY2SA	KO14LL	27 27	cr		
04-01-2000					
0045 0106 UR5BAE	KN29SM	38 38 6	cr		
0411 YU7AR	KN05CW	37 37 1	crs		
0532 9A1CAL	JN86EL	37 37 1	crs		
0610 0638 S53VV	JN65UM	27 27	c*4		

Remarks: *1 1min periods 2500lpm; *2 Leonids ODX; *3 Reply to my CQ E; *4 2500lpm. Equipment: FT-101ZD & TRV, MGF1032, 4CX250B, 17 ele Yagi, MSDSP 070b.

PE1HWO (JO21GV) wkd on 50 MHz:

1999-09-07					
1430 1525 IK1/DK5DQ	JN43BV	26 26 m m	c*		
1999-11-18					
0004 IK1MTZ	JN35UB	59 59	crs		
0006 IK0OKY	JN61GT	59 59	crs		
0038 SP3VSC	JO92DF	59 59	crs		
0147 IZ2AAJ	JN45	59 51	crs		
0158 LA4LN	JP50JA	59 59	crs		
0205 9A3FT	JN83FM	59 55	crs		
0209 S57AC	JN67TN	59 59	crs		

0215 S51UF	JN76UP	59 57	crs
0216 I2AE	JN55BN	59 55	crs
0315 9A4VV	JN82IW	59 59	crs

1999-12-03			
2157 OY9JD	IP62OA	26 26	crs
2235 OK1DDO	JO60JD	37 37	crs
2345 IZ2AAJ	JN45	26 27	crs

2000-01-04			
0440 S53J	?	27 27 1	crs
0522 S56RJ	?	27 27 1	crs

Remarks: * 1500lpm. Equipment: FT-101ZD & TRV, QOE06/40, 5 ele Yagi, MSDSP 070b. Skeds always welcome via email pe1hwo@amsat.org or WWC ch. 14345. Thanks for your report, Andre.

RK3AF (KO75WO) wkd during Perseids:

OH2BNH KP20LG 27/?, DC7OH JO62OK 27/28, DH8BQA JO73CF 37/28, SM7JUQ JO65PO 27/27, HA6NQ JN98WA 27/36, DJ7OF JO51HQ 26/37 *1, DK9OY JO52CK 37/38, DL9AN JO62SN 37/27, DL2ARD JO60AR 27/27, DL5ME JO52SD 38/26, DK0OG JN86GI 38/27, HA5CW JN97 59/59 ssb, DK3WG JO72GI 38/27 *2, DL5DTA JO61CD 38/26, DK3BU JO33NO 38/28, OK1UAK JO70MB 27/26, LA8KV JP52QQ 27/26, LA8KV JP52QQ 59/? ssb, DF1BN JO31GD 27/26, YU7EW KN05HP 26/27, YU7MS KN05FJ 26/27, YU7BK JN94XX 26/26, DH0GHU JN38VN 26/?, LA0BY/p JP61 27/37, HA8CE KN06EN 27/27 *1, OE3MWS JN88DC 27/26, DL5MAE JN58VF 27/26, S57TW JN75EX 27/26 *3, ES2RJ KO28KL 27/37, 9A2TE JN85KK 27/26, OK2MWR JN99HQ 37/27 *3, S51AT JN75GW 27/26, OE6IWG JN6627/36 *3, OK2SBL JN9927/27, LY2FE KO05OQ, 27/27, UA1OLJ LP03DC 27/26.

Remarks: *1 15 min QSO; *2 10 min QSO; *3 20 min QSO. Many thanks to all MS-partners and special thanks to Ed (RV3AH) for his kindly help. 73, Dmitriy.

RK3AF (KO85QR) wkd during Leonids:

1999-11-17
DH7FB 26/37 4sec, DG5OAF nil.
1999-11-18
DJ9YE 38/26 max. 30sec burst! DH1NSP 26/37 5sec, IW2BNA nil, DJ9YE 27/27 ssb, HA1DLZ 59/59 ssb, DL1HTT 59/59 ssb, HA5OV 59/59 ssb, SP3KEY 59/59 ssb, DL1EJA nil, 9A2KK 59/59 ssb, YU1IO 59/59 ssb, DL3JIN 59/59 ssb, OM1TF 59/59 ssb, SP9EWU 59/59 ssb, DK1KO 59/59 ssb, DG0DG 59/59 ssb, SM6CMU 59/59 ssb, DL8EBW 27/27, ssb, DH3YAK 59/59 ssb, OZ8ZS 59/59 ssb, OE3MWS 59/59 ssb, DL3IAE 59/59 ssb, DL2HWA 59/59 ssb, DL1SUZ nil, DK0OG 59/59 ssb, DL4MDQ 59/59 ssb, DK9OY 59/59 ssb, DL5MAE 59/37 ssb, DL8LAQ 59/59 ssb, PA3FOC nil, PA3CEE nil, HA6NQ 26/? only 2 pings.

Total: 27 complete QSOs (3 hscw + 24 ssb random). Equipment: IC746 + 2xGi7B, 16ele F9FT, 9A4GL's MS-DSP. email: rk3af@qsl.net. 73, Dmitriy (Dima). Pse QSL via bureau or direct to: Dmitriy Poutsev, Bozhenko st., 7-3-12, Moscow 121351 Russia. Thanks for your report, Dima.

UR5BAE (KN29SM) wkd on 144 MHz:

1999-12-12			
2340 2355 RU1AA		38 27	ncr
1999-12-13			
0125 0145 ON4KHG		28 27	cr
0220 0235 PA2TAB		27 37	cr

Meteor Scatter

2345 0010 DL3IAE	27 27	cr	0520 0550 G0CUZ	26 37	cr
1999-12-14			0610 0632 DD0VF	27 27	cr
0055 0105 DL4NAA	27 27	cr	0802 0822 F6CRP	37 27	cr
0105 0115 DL1EJA	27 27	ncr	1220 1237 PA2DWH	27 26	cr
0140 0145 DL8EBW	27 27	cr	1315 1337 DF1BN	26 27	cr
0150 0210 DH9OY	28 38	cr	1610 1630 RU1AA	26 28	cr
0210 0215 HB9FAP	27? 28	ncr	1735 1822 RK3AF	27 27	cr
0220 0230 DB8YL	27 27	cr	1852 1917 DL1EJA	37 26	cr
0255 0310 DL1EAP	27 27	cr	1917 1942 DL1SUZ	37 28	cr
2040 2055 OH8UV	37 37	cr	2045 2110 PA3DZL	28 27	cr
2320 2335 DH1NSP	27 38	cr	2150 2205 DL1SUN	37 37	cr
1999-12-15			2235 2302 IZ1BPN	37 27	cr
0050 0105 DF8IK	27 28	cr	2345 2357 F8DO	37 28	cr
0140 0200 DH3YAK	27 27	cr	1999-12-13		
0215 0237 DJ7OF	27 27	cr	0002 0012 DL4NAA	37 26	cr
0255 0310 DK3FW	27 27	cr	0025 0037 ON4KHG	27 27	cr
0315 0335 DK5DQ	27 27	cr	0040 0052 PA3BIY	28 28	cr
Heard: DK0TU, UT8AL, SP4MPB, DL3MY, PE1HWO, SP2OFW, EU6MS, DH5HV, LZ2FO, ON4AVJ, OK1FFD and many others.			0110 0122 DL1MAJ	38 27	cr
2000-01-04			0145 0157 PA2TAB	37 37	cr
0050 0107 PE1HWO	38 38	cr	0157 0207 DF8IK	38 38	cr
0115 0132 PA2DWH	27 27	cr	0220 0237 DL7USD/p	37 27	cr
0132 0152 DL0UL	27 27	cr	0340 0402 DL4IB	26 27	cr
0152 0222 PA3BIY	37 37	cr	0435 0452 DL4ABJ	38 27	cr
0220 0257 DL5WG	27 27	ncr*	0525 0537 DJ2QV	37 27	cr
Remarks: * Very hard QRM from pirate's radiotelephones, hi! Peak of the shower 0300-0500 UTC? Very sorry had to go QRT for , have breakfast and quickly go to work. Equipment: All home made, AP602A, Gi7b, 4x13ele F9FT, MSDSP-070. 73 and good luck in 2000, Anatoly. Thanks for your report, Anatoly.			0755 0857 DF1CF	27 28	cr
UT5ER (KN79GA) wkd on 144 MHz:			0900 1007 DL1EAP	26 26	cr
1999-12-12			1737 1835 DL0UL	26 27	cr
0045 0100 YU7MS	27 27 4 m 2.5cr		1912 1930 LZ5Z	27 27	cr
0130 0145 DL5MAE	38 38 m m 30 cr		1950 2007 IBTWK	27 27	cr
1920 1950 RK1NA	27 27 25 40 1.5cr		2010 2017 DH0GHU	38 29	cr
2000 2025 UA1OLJ	27 26 4 7 3 cr		2037 2047 DJ9FG	38 27	cr
2120 2145 OH8UV	27 27 4 19 1.5cr		2105 2127 DH9GCD	37 27	cr
2250 2315 LZ6T	28 28 5 8 2 cr		2127 2137 DL3HRT	28 28	cr
1999-12-13			2145 2157 DH2OAA	37 37	cr
0009 RZ6BU KN84PV 59 59		tropo	2220 2235 DL0LSW	37 27	cr
1838 UA3DJG KO95CN 559 559		tropo	2240 2252 IC8FAX	28 28	cr
1844 RN6LU LN06UR 55 58		tropo	2257 2307 DL3IAE	37 38	cr
1910 1930 RW1AW	28 27 m m 10 cr		2325 2352 DL2NFX	27 27	cr
2138 2150 UA4API	38 38 5 11 15 cr*1		2350 0002 DL8EBW	37 38	cr
2155 2215 UA4AQL	28 27	ncr	1999-12-14		
2300 2330 IK1PAG		nil	0005 0017 DK5DQ	27 27	cr
1999-12-14			0022 0037 DB8YL	38 28	cr
0000 0045 DL8EBW	26 19 1.5ncr		0042 0122 G4RGK	37 27	cr
0100 0130 DH3YAK		nil	0142 0157 I5WBE	37 27	cr
Remark: *1 QTF 350 degrees. Equipment: FT-847 without preamp, PA 500W, DJ9BV-3,6L (7,5m boom, 7m agl), DTR. Thanks for your report, Arkady.			0157 0207 G0RUZ	27 27	cr
YU7MS (KN05EF) wkd in BCC MS contest:			0212 0230 DH5HV	28 28	cr
1999-12-11			0307 0330 G4AEP	27 27	cr
2030 2047 SP4MPB	27 26	cr	0332 0347 DK0TU	37 27	cr
2305 2322 S51AT	27 27	cr	0425 0452 RW1AW	27 27	cr
2322 2352 DL5MAE	27 27	cr	0517 0537 HB9FAP	27 27	cr
1999-12-12			0537 0550 DF2ZC	27 27	cr
0047 0100 UT5ER	27 27	cr	0805 0820 IW1CHX	27 27	cr
0250 0305 DL5WG	27 27	cr	0850 0905 F6FHP	27 27	cr
0322 0337 DJ9YE	27 27	cr	0910 0935 PA0WWW	38 38	cr
0355 0407 SP2OFW	27 27	cr	0950 1002 DK5TE	27 27	cr
0420 0440 LA0BY	27 27	cr	1815 1830 PE1LWT	36 38	cr
			1850 1915 PA3CWN	27 27	cr
			1917 1930 ON4FI	38 27	cr
			1935 2200 DH5FS	37 27	cr
			2007 2020 DL1RTL	28 27	cr
			2055 2112 S51MQ	28 29	cr
			2110 2125 DL9MS	38 37	cr
			2127 2140 PA3FOC	37 38	cr
			2140 2152 PE1HVO	28 38	cr
			2225 2237 DF7KF	37 38	cr
			2240 2247 OT4AVJ	27 27	cr

2300 2330 F1NSR 27 37 cr
 2327 2340 LZ1ZX 27 27 cr
 2355 0010 DH1NSP 38 38 cr
 1999-12-15
 0110 0122 LZ2FO 27 27 cr
 0135 0147 DF0BV 37 37 cr
 Equipment: C5400E, MGF1302, GS35b, 4x4 loop, 11
 el DL6WU. Special thanks to everyone who called us!
 Thanks for your report, Miska.

24 GHz Toplist continued from page 86

22	OK1KIR/P	JO60	5	2	227
23	I3ZVN	JN55	5	2	210
24	OK1OKL	JO60	5	0	185
25	DF2CA/P	JN58	5	0	142
26	DL6NCI	JO50	4	3	280
27	OK1UWA/PJO70		4	0	188
28	OK1DFC/P	JO60	4	2	185
29	DK8ZP	JO40	4	0	178
30	DK0PX	JN48	4	0	168
31	F1GHB/P	IN88	4	0	158
32	G3GNN	IP70	4	0	154
33	DL3YEE/P	JO42	4	0	151
34	DL2DR	JO31	4	1	98
35	F5HRY	JN18	4	1	96
36	OK1AIY-P	JO60	3	0	227
37	G4KNZ/P	JO02	3	0	173
38	IW3HTU	JN55	3	1	160
39	DG1VL	JO61	3	2	113
40	DL0GTH	JO50	3	1	108
41	SM7ECM	JO65	2	1	168
42	DF1EQ	JO31	2	0	133
43	DB1BX	JO32	2	1	90
44	DK2DB	JN48	2	0	48
45	ON7YK	JO20	2	0	34
46	G4KGC	IO92	1	0	392
47	DC0DA/P	JO32	1	0	104
48	G8BKE/P	IO80	1	0	100
49	F5OIH/P	JN08	1	1	90
50	CT1FP	IN50	1	1	82
51	CT1DMK	IN50	1	1	82
52	F1HDF/P	JN18	1	1	77
53	DJ6XV	JO31	1	1	75
54	F6CGB/P	JN37	1	0	74
55	OK1OGS/PJN69		1	0	60
56	GW4LXO	IO81	1	0	58
57	OZ1IPU	JO57	1	1	55
58	DL7QY	JN59	1	0	13
59	DL4VCG	JN39	1	0	9
60	SP6MLK/6	JO70	1	1	1
61	SP6MLK/P	JO80	1	1	1
62	SP6GWB/PJO80		1	1	1

DUBUS 47 GHz Top List

NR	CALL	WW	WKDCODX
1	HB9MIN/P	JN37	8 0 182
2	HB9MIO/P	JN37	8 0 166
3	HB9AMH/P	JN37	5 0 166
4	IW3FZQ/4	JN54	5 1 163
5	DK4GD/P	JN47	5 0 123
6	DF2CA/P	JN58	4 0 15
7	OE5VRL/5	JN78	3 2 203
8	I3ZVN	JN55	3 1 179
9	IW3EHQ/P	JN65	3 1 111
10	DL2DR	JO31	3 1 95
11	OK1OKL	JO60	2 0 96
12	OK1UWA/PJO70		2 0 96
13	OK1AIY-P	JO60	2 0 96
14	DB6NT	JO50	2 2 95
15	DL6NCI	JO50	2 2 83
16	DC0DA/P	JO31	2 0 69
17	DK0PX	JN48	2 0 62
18	DF2CA/P	JO60	2 0 59
19	DL3YEE/P	JO42	2 0 45
20	DL/HB9AMH/P	JN48	0 184
21	G8BKE/P	IO90	1 1 54
22	IW3HTU	JN55	1 1 49
23	DC8EC/A	JN57	1 0 14
24	OK1AIY/P	JO70	1 0 12
25	OK1KIR/P	JO60	1 1 5
26	PA0BAT	JO31	1 1 1
27	CT1FP	IN50	1 1 1
28	CT1DMK	IN50	1 1 1
29	SP6MLK/6	JO70	1 1 1

DUBUS 76 GHz Top List

NR	CALL	WW	WKDCODX
1	DK4GD/P	JN47	4 0 114
2	DF2CA/P	JO50	4 0 4
3	HB9MIO/P	JN37	2 0 114
4	DB6NT	JO50	2 1 77
5	DC0DA/P	JO50	2 0 48
6	OK1AIY/P	JO70	1 0 12
7	OE9FKI	JN47	1 0 2
8	HB9AMH/P	JN37	1 0 1
9	HB9MIN/P	JN37	1 0 1

DUBUS 145 GHz Top List

NR	CALL	WW	WKDCODX
1	DB6NT/OZ	JO57	1 0 3
2	DB6NT	JO50	1 1 3
3	IW3EHQ/P	JN65	1 1 2

DUBUS 241 GHz Top List

NR	CALL	WW	WKDCODX
1	DB6NT	JO50	1 1 2

News & Comments

Editor: Klaus Tiedemann, DL4EBY

VHF Database V1.6 fertig

Hallo liebe VHF Freunde,

Es ist nun wieder soweit! Die VHF-DX-Gruppe DL-West hat die erstellte VHF-Datenbank (nun ca. 38500 Calls samt Lokator!) zum Versand fertig!

Aus Datenschutzgründen werden wir wieder keine gesammelten Adressen mit weitergeben.

Wir haben uns entschieden, die Datenbank wieder als gepackten D-Base III File (28,2MB entpackt) zusammen mit Auskopplungen der MS-Datenbank gegen Einsendung eines SASE (self addressed and stamped Envelope, z.Zt. 2,20DM) und zusätzlich 5 DM, bzw. 3\$ (Aufwandsentschädigung) an jeden interessierten HAM weiterzugeben. (Kosten natürlich incl. 3 1/2" Diskette, bitte keine Disketten an uns mit einschicken!!!) Zudem ist auch der Versand der Files über E-Mail möglich (bitte einfach Brief mit 5 DM oder 3\$ schicken und die EMail Adresse angeben!).

Zudem gibt es inzwischen auf unserer Gruppen-Homepage einen Service, wo wir die Datenbankabfrage auch **online** anbieten: <http://www.rue.net/vhfdx/>. Dort können auch Updates hinterlegt werden! Jeder User unserer VHF-Datenbank wird registriert! Weiterhin sind wir um jede Änderung, Neueinträge und auch um Informationen von Calls/Locator von DX-Stationen, die gearbeitet wurden, sehr verlegen! Zudem können natürlich weiterhin Info-Anfragen an unsere Gruppe direkt gestellt werden! (PR, E-Mail und via Post bei DL8EBW) Wir warten auf Eure Update, bzw Infos - es fehlen noch viele Infos aus dem osteuropäischen Raum!!

73, Guy, DL8EBW, VHF-DX-Gruppe DL-West

VHF Database V1.6 finished

Hallo VHF-Friends,

now the new edition of the VHF-database is ready to spread around! The VHF-DX-Group DL-West have set up a VHF-Database for checking calls, locators etc. including about 38500 call / locators! The personal details (address and phone/fax no. will not be spread due to data privacy protection problems).

After a lot of requests we decided to spread these database around to all user! We will make it available if you will send an SASE (self addressed and stamped envelope, 2,20DM and 5 DM or 3\$). Do not send us any disks! For this, you will receive a 3 1/2" 1,44MB disk with ZIP packed Database version in D-base III format (28,2MB unpacked) and the updated MS-Database. It will be also available via EMail - send 5 DM (or 3\$) and your E-Mail address to us! Every user will be registered!

Also, we have set up a server where you are able to check these database details also online (<http://www.rue.net/vhfdx/>) and where you will be able to update it! (future plan...)

Please send your personal infos as well as wellknown stn-calls and locators from DX-Stationen you have worked! (especially from Eastern Europe is still missing a lot!!!). We await your update!! Many regards, DL8EBW

MWS 2000 / DXCC 2000

Hallo liebe UKW-Freunde,

in den letzten Jahren wurde von der VHF-DX-Gruppe DL-West in Zusammenarbeit mit dem "Funktelegramm" die M(ost) W(anted) S(quare) Liste und DXCC Liste für den UKW-Bereich ausgearbeitet.

Auch dieses Jahr haben wir uns entschlossen, diese Liste wieder aufleben zu lassen. Hier die Spielregeln für die "Liste 2000": Die Erhebung findet ab dem 1. Dezember 99 bis Mitte Februar 2000 statt. Am 12.02.2000 ist dann Einsendeschluss!!! Somit wird die MWS2000 schon im März veröffentlicht werden können und jeder kann sich ein Bild bis zur Sommeraktivität machen, was besonders aktivierend ist!

Einzusenden sind die jeweiligen meist gesuchtesten Großfelder und DXCC-Länder (ohne jegliche Anzahl-Begrenzung) über deren Aktivierung man sich besonders freuen würde. Jede Station darf nur einmal einreichen! Die eingeschickten Großfelder / DXCCs sollten natürlich im Rahmen der Erreichbarkeit des jeweiligen Absenders liegen (Tropo- stn. max 1000km, MS Stationen max. 2200km.) Auch Wasserfelder sind aktivierbar, wie uns mehrere Expeditionen vorgemacht haben - sinnvoll wäre allerdings hier sicher der Eintrag als gesuchtes Feld nur in Tropereichweite....

Eine prima Idee hatte inzwischen übrigens EA6VQ, Gabriel, der eine automatische Auswertung zur MWS-Liste in sein VHF-Logbuchprogramm (s. <http://www.qsl.net/ea6vq/vqlog.html>) eingebaut hat!!!

Infos bitte an : VHF-DX-Gruppe DL-West c/o DL8EBW G.Juenkersfeld, Gustav-Freytag-Str.1, D-42327 Wuppertal

per AX25 BBS : DB0NDK.#NRW.DEU.EU

per AX25 Cluster: DB0MDX oder DB0NOR-9

per E-Mail : dl8ebw@qsl.net oder
dl8ebw@t-online.de

Die Auswertung wird via Funktelegramm, Funkamateure, CQ-DL, PR und Internet ab März 2000 verbreitet! Besten Dank an alle für die Mitarbeit, die ausschließlich einer Aktivitätssteigerung des 144MHz Bereiches dienen soll!!!

MWS 2000 / DXCC 2000

Hallo dear VHF friends, in last years the VHF-DX-Gruppe DL-West, together with the German magazine "Funktelegramm" have

created the M(ost) W(anted) S(quare) list and WAE/DXCC list for the 144MHz area.

Also this year we decided to run this collection of most wanted squares and WAEs/DXCCs list 2000 again! Please check the following rules and send your infos as soon as possible. We will collect the dates from 1.st December 99 to mid February 2000. Latest at 12-02-00 your details have to be here! From end of march 2000, we will be able to spread the results on Funktelegramm, Funkamateure, CQ-DL, PR and Internet pages, that everybody have a good chance to find a recommend square to activate in summertime.

Everybody can once send in as many most wanted squares and DXCC countries as he wants. Of course it will be necessary that the wanted squares / country have to be in a reachable area from the QTH of the sender. (eg tropo stations send in max. 1000km area - MS stations up to 2200km...) Also "wet" squares are possible to activate, as we have seen from several good expeditions in the last years! So if you need them it can be nice to give an initial about these ones also - of course they shall be within your tropo range...

A very nice idea was born by EA6VQ, Gabriel. He built up an automatic search in his logbook program for our MWS lists! Look at <http://www.qsl.net/ea6vq/vqlog.html>

The results will be published in Funktelegramm, Funkamateure, CQDL, PR and Internet from the end of March 2000. Thanks very much to all for the input because it will cause again a piece of activity for the 144MHz area!

EA6VQ Logbuch Programm VQ log 2.0

Hallo liebe VHF Freunde,

der bekannte VHF DXer Gabriel, EA6VQ betätigt sich seit geraumer Zeit auch als Logbuchautor und hat der VHF Gemeinde inzwischen ein Tool zur Verfügung gestellt, welches nicht nur den reinen Datenbestand verwalten kann, sondern zudem diverse Auswertungsmöglichkeiten kennt.

Sicher ist es für einen VHF Freak nicht verwunderlich, dass hier in erster Linie die Auswertekriterien wie Squares und Länder zu

erwähnen sind und das natürlich Band- und Betriebsarten selektierbar! Zudem hat Gabriel aber auch den Aufwand nicht gescheut, für unsere VHF-DX-Gruppe DL-West sowohl Auswerteroutinen für die jährlich stattfindenden 144MHz und 432MHz Aktivitätskonteste zu implementieren, als auch für die jährliche (M)ost (W)anted (S)quare Liste ein Programm einzufügen. Bei der letzteren Liste ist, genau wie bei allen anderen Auswertungen, die Darstellung als Bildschirmausgabe, auf EU-Karte, auf WW-Karte und natürlich auch die Verarbeitung zu einem File bzw. zur Druckerdirektausgabe möglich!

Weitere Features wie z.B. QSL-Label Druck, Adressenbuch sowie Übernahme von Daten aus anderen Logbuchprogrammen und Contestprogrammen runden dieses gelungene Werk, welches ständig in Überarbeitung ist, ab. Als Leckerbissen ist es möglich die VHF-Datenbank der VHF-DX-Gruppe DL-West zu nutzen (nur nach Registrierung des Programmes bei EA6VQ!) was unter anderem eine Direkteinblendung des Lokators bei der QSO-Eingabe ermöglicht, aber auch den kompletten Datenbestand dieser Datenbank darstellen kann....

Mehr zu diesem unter Windows lauffähigen Programm kann man auf der extra eingerichteten Homepage des Autors im Internet-Net unter: <http://www.qsl.net/ea6vq/vqlog.html> erfahren - dort läßt sich auch das Programm herunterladen bzw. man erhält Informationen zur Registrierung.

Jeder, der Spaß an der Verarbeitung seiner QSO Daten mit dem elektr. Medium "PC" hat, möge sich diese sehr interessante Version von VHF-Logbuch einmal ansehen!

73 von einem begeisterten User des, in DL noch etwas unbekannten, VHF-Logbuchprogrammes.... Guido, DL8EBW

EA6VQ logbook program VQ log 2.0

Hallo dear VHF friends,

Gabriel, EA6VQ, one of the famous VHF-DXer our days, is the editor of the new logbook VQ log 2.0, which will be a very nice tool for all users who want to have a good overview about their work which has been done on the different bands and modes.

Of course as an VHF enthusiast Gabriel implemented all necessary tools for VHF sortings: calls, locators and countries can be sorted by different frequencies as well as different modes (eg. RTTY, MS, SATs ...).

Also he includes several nice facilities for our VHF-DX-Group DL-West: there are routines for our yearly 144MHz and 432MHz activity contest (a click and you have the result of the hole year!) as well as an routine for the (M)ost (W)anted (S)quare list! For such listings you are able to produce result lists direct onto your screen, or produce files or you are able to publish it as maps for EU or WW!

Many more features are included - for eg. qsl-label print tools, adress book as well as converters for several other logbooks and contest programs.

As a special tool it is possible to use our VHF database (tool only available after registration at 6VQ!) which will automatically fill your locator fields when input your QSO-datas as well as you have an actual overview of about 38500 calls and locators!

If you want to receive more information about this windows program and its registration, please check at the homepage: <http://www.qsl.net/ea6vq/vqlog.html>

So I believe you will enjoy this new tool after your first touch! Kind regards from a real fan of this program! 73 Guido, DL8EBW

You are invited to submit your reports and articles via EMail / disk / FAX / letter...

• EMail (Internet): tklaus@snauf.de

24h FAX: +49-30-795 98 14

Thanks, Klaus.

Kitchens Corner

by DJ9BV



La soupe de champagne

Philippe, F6ETI

Recevoir vos amis: "La soupe de champagne"

Pour une bouteille de vin mousseux (Charles Volner demi-sec): Melanger dans une soupière:

- 2 louches de Cointreau,
- 2 louches de sucre en poudre,
- le jus et la pulpe de trois citrons verts pressés.

Mettre 3 ou 4 heures au réfrigérateur. Juste avant de servir: Verser doucement dans la soupière le vin mousseux (très frais) et bien melanger le tout. Servir aussitôt t' ce breuvage très frais.

L'aide d'une louche dans des verres de bonne contenance. Bon apéro!

Attention: l'abus d'alcool peut donner mal aux cheveux....

Champaign Soup

Philippe, F6ETI

To welcome your friends: "Champaign soup!"

For one bottle of champaign (in case of emergency sparkling wine will do the job too, for example Charles Volner half dry) you have to mix in a pot:

- 100ml of Cointreau
- 100g of powder sugar
- Juice and pulp of three green lemons.

Put three to four hours in the fridge. Just before serving pour delicately into the pot and mix everything well .

Serve this immediately in large glasses.

Attention: Be careful, abuse of alcohol can give pain to your hair...

DUBUS Toplist

Editor: Norbert Goettsche, DL8LAQ

DUBUS 50 MHz Top List

NR	CALL	WW	WK	DC	TR	AU	MS	ES	F2
1	ON4KST	JO20	784	155	801	1415	1509	7920	16498
2	PA0RDY	JO22	753	0	725	1617	1597	****	16320
3	DL7QY	JN59	713	138	741	1665	2186	6900	16353
4	ON4PS	JO20	638	125	752	1740	1902	6520	16358
5	G4IGO	IO80	627	0	578	1308	2528	7301	16188
6	G4UPS	IO80	603	0	0	0	0	0	0
7	ON4GG	JO20	595	0	741	1757	1695	7243	16547
8	ON4ANT	JO20	576	0	710	1757	1695	7243	16547
9	PA2TAB	JO32	559	132	762	1370	1809	5797	15339
10	G6HKM	JO01	552	0	347	1883	780	5674	16112
11	DL8HCZ	JO53	539	115	365	1250	1356	3350	0
12	F8OP	JN26	523	0	631	1023	1369	5508	13547
13	IXCC	JN63	511	0	707	0	1427	3349	18627
14	GW4LXO	IO81	500	0	300	650	1200	7500	10000
15	I2SEME	JN52	498	104	583	0	1712	5216	15152
16	DL3AMA	JO51	487	91	519	1431	1600	4001	12180
17	OK1DDO	JO60	454	93	620	1423	1340	6100	13300
18	SP4MPB	KO03	451	0	520	1836	1507	8290	0
19	DL6NCI	JO50	427	106	514	1294	505	7815	14239
20	F1GTU	JN05	418	0	699	815	1421	3268	16400
21	SP6GWB/P	JO80	411	74	696	629	1880	7908	10594
22	SP6GZZ	JO81	407	0	515	0	1826	8103	0
23	DL4ALI	JO50	403	82	464	628	1024	3969	10313
24	DL9GU	JN49	402	0	721	450	0	8500	15625
25	OK1IBL	JO60	377	77	530	1320	1717	6941	11816
26	PA3FYM	JO22	375	0	1238	2019	0	****	16373
27	ES1CW	KO29	372	71	530	1968	2116	5253	9263
28	SP2IQW	JO94	367	68	631	1537	1470	4034	10964
29	DL6BF	JO32	365	71	1193	1326	0	4955	11582
30	OK1FFD	JO60	354	79	580	1231	1067	6250	13300
31	HB9AOF	JN36	350	82	500	0	0	5400	10663
32	HB9SJV	JN26	348	84	526	768	1474	5784	14658
33	DF7RG	JN68	345	80	652	1576	824	4864	14802
34	OK1FAV	JO60	343	75	0	579	1093	6250	10366
35	F5DE	JN05	341	82	860	0	1368	3638	12539
36	OK1VBN	JN78	338	60	455	0	897	5793	0
37	SM3BIU	JP73	336	77	907	1704	1982	4414	0
38	OK1MAC	JN79	336	0	0	0	0	0	0
39	SP6MLK/P	JO80	333	59	437	0	1322	8557	0
40	PE1OGF	JO21	332	76	0	0	0	0	0
41	SM7JUQ	JO65	331	84	372	1349	1062	3900	14070
42	YO2IS	KN05	325	0	270	1155	1404	6942	14292
43	DL7ARM	JO62	315	0	909	1189	1245	8324	15817
44	ES2RJ	KO29	313	59	345	1726	2052	4642	0
45	F8CS	JN27	313	68	336	0	0	7454	9753
46	ES6QB	KO37	310	74	450	625	0	5145	13410
47	F5PAU	IN88	306	75	0	0	0	0	0
48	DL2DR	JO31	299	34	1003	0	0	4769	12047
49	OZ7IS	JO65	296	81	410	1294	850	3100	0
50	DL1SUZ	JO53	294	63	546	1434	865	5921	8020
51	YL3AG	KO26	287	53	397	1817	0	6420	0
52	DJ6XV	JO31	286	55	401	0	1130	4805	10165
53	OK2ZW	JN89	286	85	0	0	0	0	15580
54	HB9STY	JN36	280	65	367	0	1431	4448	7810
55	F1FIH	JN23	273	98	796	0	1637	2492	15613
56	IK5OIY	JN52	262	0	332	0	1444	2826	8305
57	DL3YEE	JO42	261	0	540	1056	1300	2700	13053
58	ES1AJ	KO29	261	51	415	1710	1850	3340	0
59	ES1II	KO29	259	52	335	1569	0	3325	0
60	PA4VHF	JO32	257	58	559	902	755	4832	11534
61	ES2WX	KO29	257	53	336	1063	1847	4651	0
62	ON5SE	JN29	257	78	0	0	0	0	0
63	PE1HWO	JO21	256	59	835	908	1610	3289	11443
64	I3ZVN	JN55	254	65	532	0	0	5742	8422
65	ES2NA	KO29	252	52	415	352	1843	3340	9276
66	OK1VQ	JO60	245	46	245	539	0	2002	2755
67	OE3OKS	JN87	243	45	467	0	0	7985	0
68	DL7YS	JO62	240	60	342	461	1086	3547	8767
69	DL7HG	JO63	240	53	0	0	0	0	0
70	ES5DE	KO38	239	56	228	606	0	5299	8249
71	DL5BBL	JO42	237	0	414	1008	0	3975	5863
72	ES1MW	KO29	232	52	315	650	0	2855	0
73	IW2DVK	JN45	230	51	534	0	1649	7332	9837
74	CT1BGE	IM58	215	0	0	0	0	0	0
75	LY2SA	KO14	213	0	374	726	904	3877	2491
76	SP5HEJ	KO02	206	0	568	0	1838	4699	0
77	ES5MC	KO38	205	58	432	1786	0	5143	13142
78	YU1VG	JN94	201	50	1766	0	1450	3666	1650
79	OK2PPP	JN99	201	40	0	0	0	3200	0
80	OK1UDX	JN79	198	47	333	1054	0	3513	0
81	SP2JXN	JO94	198	0	0	0	0	0	0
82	OK1DKS	JO70	192	42	934	0	0	1973	8514
83	ES4NG	KO39	191	47	412	725	0	3105	0
84	PA2CHR	JO22	187	72	1334	909	0	5215	13966
85	DL8EBW	JO31	186	50	247	1050	1150	5800	0
86	ES5RY	KO38	177	36	317	0	0	3640	0
87	CT1DIN	IN60	174	37	1581	0	0	3169	0
88	SP6AZT	JO81	169	0	612	0	1168	4327	0
89	HB9RUZ	JN47	168	54	406	0	960	3585	0
90	DJ2XS	JO53	164	0	440	419	0	4155	0
91	G7LRQ	IO91	154	41	0	0	0	3574	0
92	OH2BNH	KP20	147	37	391	948	0	3246	0
93	DL5GAC	JN47	147	0	129	690	0	5100	11900
94	DF1EQ	JO31	138	0	279	0	0	2769	0
95	OK2XTE	JN79	138	42	162	0	0	2419	0
96	DL5IO	JN49	134	0	113	340	900	3100	12995
97	ES1RF	KO29	129	32	340	650	0	2800	0
98	DL5UH	JN48	129	35	103	0	0	5943	0
99	DK2BJ	JO30	127	43	275	0	0	1799	0

100	ES3RM	KO28	127	31	210	692	0	3111	0	37	PA4VHF	JO32	416	0	1536	1337	2085	2086
101	ES5QA	KO38	115	28	0	0	0	2852	0	38	ES2WX	KO29	415	40	1370	1950	2270	2071
102	CT1DDW	IN60	110	50	2100	0	0	4699	0	39	YO2IS	KN05	407	0	1360	1916	2130	2556
103	CT1FAK	IN50	108	1	0	0	0	5395	0	40	OK1FM	JN69	403	56	1843	1438	2200	2150
104	I2FUM/2	JN45	107	0	137	0	0	2023	0	41	ON4ANT	JO20	399	0	1420	1965	2124	2725
105	S53J	JN75	105	33	0	0	0	0	0	42	DL7AKA	JO62	396	0	1747	1916	2065	3620
106	IN3TWX	JN56	95	0	396	0	0	1890	8100	43	DH3YAK	JO31	395	57	1424	1162	2038	2650
107	PAQJUS	JO22	87	0	325	1706	0	9650	0	44	OK1MAC	JN79	392	0	1536	1681	2005	2511
108	F1JKY	JN25	85	24	0	0	0	1584	0	45	ES6RQ	KO37	391	37	1500	1840	2172	1725
109	DJ6MB	JO30	64	0	0	661	0	5968	0	46	OK1JKT/P	JO60	389	51	1701	1764	2121	2269
110	DJ8ES	JO43	58	20	1306	0	0	2100	0	47	F8CS	JN27	387	54	1161	1468	2124	3231
111	S51WI	JN75	53	12	0	0	0	2486	0	48	IW1AZJ	JN35	386	60	1115	1188	1971	2780
112	OK2QI	JO80	51	0	0	0	0	2149	0	49	UA3MBJ	KO88	374	0	1560	2006	2573	2392
113	LA8AK	JO28	37	0	250	607	1145	1189	0	50	HB9CRQ	JN47	374	64	1404	1288	2060	2959
114	ON4LCV	JN29	9	9	267	0	0	1211	0	51	DL1SUN	JO53	367	0	1824	1724	1845	2333
115	HB9MIO/P	JN37	8	0	805	0	0	0	0	52	DL1KDA	JO30	366	59	1388	1924	2101	2339
116	OK1HRR	JO70	1	1	0	0	0	1277	0	53	I4YNO	JN54	366	63	1374	1374	2122	2276

DUBUS 144 MHz Top List

NR	CALL	WW	WKDC	TR	AU	MS	ES
1	DK1KO	JO53	669	0	2124	2057	2210 3285
2	DK3WG	JO72	660	1	2243	2034	2295 2782
3	PA3BIY	JO22	618	64	1550	2026	2205 3143
4	DF8LC	JO53	600	70	2105	2045	2226 3291
5	DL8EBW	JO31	565	63	1454	1918	2059 2214
6	DL8HCZ	JO53	561	0	1615	1976	2096 3527
7	PA0RDY	JO22	561	0	1582	1979	2272 2819
8	OH5LK	KP30	517	0	1962	2041	2235 2891
9	DK6AS	JO52	516	0	1460	1885	2510 2260
10	I2FAK	JN45	512	0	1797	1508	2405 2995
11	SP6GZZ	JO81	512	0	1670	1794	2017 2717
12	SP9EWU	JO90	509	62	1710	1927	2154 2531
13	HA1YA	JN87	509	71	1548	1876	2183 2885
14	PA3FOC	JO21	509	59	1373	2010	2209 2326
15	OE3JPC	JN88	504	0	1584	1821	2128 2769
16	DJ7OF	JO51	489	63	1512	1518	2152 2156
17	I4XCC	JN63	486	0	1177	1803	2275 3257
18	DL5DTA	JO61	481	58	1344	1578	2045 2057
19	LY2WR	KO24	480	57	2051	2075	2347 3007
20	OZ1DOQ	JO65	467	58	1885	1940	1981 2888
21	DL8LAQ	JO43	461	0	1376	1806	1934 3302
22	ON4GG	JO20	459	0	1420	1965	2150 2124
23	I2SEME	JN52	455	65	1590	0	2040 2893
24	DK0OG	JN68	453	0	1708	1722	2172 3320
25	PA2CHR	JO22	453	0	1432	1683	2240 3201
26	OH7PI	KP32	451	0	1902	1926	2151 2489
27	DD0VF	JO61	445	61	1736	1275	2017 2328
28	OK2ZW	JN89	445	56	1417	1775	2113 2471
29	SP4MPB	KO03	440	0	1886	1764	2038 2697
30	DL3AMA	JO51	438	56	1785	1803	1925 2083
31	YU7EW	KN05	437	67	1404	1755	2179 2430
32	DL7FF	JO62	430	0	1516	1379	2057 2312
33	OK2VMD	JN89	428	58	1662	1765	2031 3605
34	RX1AS	KN59	427	0	1709	1905	2271 2547
35	F8OP	JN26	425	0	1228	1196	2028 2720
36	YU7MS	KN05	419	62	1319	1856	2160 2438
37	PA4VHF	JO32	416	0	1536	1337	2085 2086
38	ES2WX	KO29	415	40	1370	1950	2270 2071
39	YO2IS	KN05	407	0	1360	1916	2130 2556
40	OK1FM	JN69	403	56	1843	1438	2200 2150
41	ON4ANT	JO20	399	0	1420	1965	2124 2725
42	DL7AKA	JO62	396	0	1747	1916	2065 3620
43	DH3YAK	JO31	395	57	1424	1162	2038 2650
44	OK1MAC	JN79	392	0	1536	1681	2005 2511
45	ES6RQ	KO37	391	37	1500	1840	2172 1725
46	OK1JKT/P	JO60	389	51	1701	1764	2121 2269
47	F8CS	JN27	387	54	1161	1468	2124 3231
48	IW1AZJ	JN35	386	60	1115	1188	1971 2780
49	UA3MBJ	KO88	374	0	1560	2006	2573 2392
50	HB9CRQ	JN47	374	64	1404	1288	2060 2959
51	DL1SUN	JO53	367	0	1824	1724	1845 2333
52	DL1KDA	JO30	366	59	1388	1924	2101 2339
53	I4YNO	JN54	366	63	1374	1374	2122 2276
54	SM7JUQ	JO65	365	41	1902	1646	1921 2332
55	DL6BF	JO32	363	50	1542	1932	1814 2332
56	ES2RJ	KO29	358	40	1190	1861	2000 2127
57	YL3AG	KO26	356	33	1552	1912	0 2448
58	OE3OKS	JN87	356	59	1441	1273	1867 2788
59	SM3BIU	JP73	353	32	1460	1844	2260 2242
60	S50C	JN76	351	61	1463	1530	2233 3356
61	DL7YS	JO62	348	53	1512	1528	1826 2136
62	IK1PAG	JN35	346	0	1186	0	2254 2725
63	PA2DWH	JO22	345	59	1230	1950	2150 2250
64	OH2BNH	KP20	344	37	1334	1787	2003 2003
65	UR5BAE	KN29	341	52	1994	1924	1866 2492
66	YU1WP	JN94	341	53	1422	1850	2236 2825
67	UT1PA	KO21	340	0	1901	1934	1806 2425
68	YU7EF	KN05	340	58	1135	987	2248 2440
69	PE1OGF	JO21	338	58	1391	1602	1959 2259
70	SP6AZT	JO81	335	0	2080	1463	1710 2566
71	OK1DKS	JO70	334	56	1230	1308	0 3530
72	G3LQR	JO02	333	0	1776	2031	0 2406
73	F6DKW	JN18	331	52	1519	1602	2051 2755
74	DJ1LP	JO64	331	46	1347	1071	2158 2301
75	DL5GAC	JN47	330	0	1264	1876	2135 3079
76	DK1KR	JO53	324	0	1481	2103	0 2026
77	DB6BX	JO32	321	55	1534	1541	1921 2126
78	ON4KHG	JO10	321	50	1185	1592	2094 2312
79	OK1MG	JO70	319	49	1526	1590	0 2632
80	F1FIH	JN23	317	52	1305	999	1829 2934
81	F5HRY	JN18	309	54	1276	1695	2038 2758
82	ES2XM	KO29	308	37	1389	2198	0 2222
83	OE6IWG	JN77	308	54	1221	1110	2220 2126
84	SP3MFI	JO91	307	0	1697	1632	1802 2617
85	PA2TAB	JO32	304	53	1302	1239	2103 2183
86	G4YTL	IO91	303	0	1450	1774	2143 2172
87	ES4EQ	KO39	302	39	1541	1840	2240 2245
88	I1JTG	JN35	301	0	1106	1269	1825 2742
89	OK1AXH	JO70	300	0	2142	1486	1366 1768
90	SP6GWB/P	JO80	299	47	1780	1581	1875 2437
91	ON4KST	JO20	299	54	1435	1612	1940 2383

92	SM5BSZ	JO89	293	0	1764	1824	1938	0	147	DG3XA	JO43	211	39	1371	1061	1839	2331
93	OK1DFC/P	JO60	291	51	1775	2099	2024	2016	148	OK1DDO	JO60	210	46	1329	1500	1720	2418
94	PA0WWMM	JO22	291	49	1303	1839	1997	2212	149	UR7GN	KN66	208	0	1830	0	2010	1940
95	OK1FFD	JO60	289	53	1388	1720	1964	2154	150	ES0NW	KO19	207	30	1060	1720	1797	1965
96	SP2JXN	JO94	286	0	1650	1690	0	2634	151	IK1LGV	JN44	204	0	1466	0	1613	1890
97	IN3TWW	JN56	283	0	1100	0	1609	1750	152	SP5HEJ	KO02	201	0	1830	1705	1312	2313
98	ES3GZ	KO28	281	35	1495	1720	2134	2101	153	UY5HF	KN66	201	0	1750	0	1820	2032
99	LA8AK	JO38	280	0	1496	1804	1804	2413	154	ES8RO	KO28	199	27	1802	1800	0	1780
100	ES5WE	KO38	278	32	1466	1695	1934	2530	155	DL2DR	JO31	199	39	1158	980	0	2057
101	DF1IAZ	JN49	278	56	1038	1143	2069	1873	156	OK1SC	JO70	198	0	1490	1673	0	1729
102	G4IGO	IO80	274	0	2761	1917	1903	2833	157	DL8AAV	JO52	198	44	1236	1127	0	2144
103	DL1BKK	JO43	273	0	1513	928	0	2712	158	DL9BDM	JO33	197	0	1538	1248	1659	2321
104	ON4PS	JO20	273	47	1449	1435	1822	2259	159	G6RAF	IO92	197	0	1507	1722	2078	2400
105	DK2BJ	JO30	272	46	1476	1924	0	2205	160	DF9QX	JO42	197	0	1446	1070	1455	3320
106	RZ6BU	KN84	272	0	1172	960	2017	2953	161	ES0SM	KO08	196	31	1578	1767	1991	0
107	UA4NM	LO48	270	0	1215	1850	2510	2290	162	IT9VDQ	JM68	195	45	1676	0	2135	2491
108	G6HKM	JO01	269	0	1304	1555	1660	2269	163	DK2DB	JN48	195	0	1239	1136	0	3106
109	OK1IBL	JO60	266	50	1438	1462	2003	3398	164	F1HDF/P	JN18	194	0	1452	0	0	2425
110	IK5OIY	JN52	265	0	1048	0	2095	2253	165	ES1OX	KO29	194	18	1016	1449	1158	2121
111	OZ1IPU	JO57	262	40	1387	1187	1566	2452	166	OE5VRL/5	JN78	192	0	1665	1573	1990	2157
112	PE1HWO	JO21	262	53	1315	1250	2184	2257	167	PA0JUS	JO22	192	38	1409	1050	0	2167
113	GW4LXO	IO81	261	0	2750	1550	2000	2200	168	ES7RDR	KO27	189	31	1200	1750	1000	2101
114	DH8GV	JO33	261	42	1565	1018	1102	2450	169	ES0HD	KO18	187	23	1550	1918	0	0
115	RK2FWA	KO04	261	0	912	1759	2125	2010	170	UA3MHJ	KO87	186	0	1227	1943	2405	1948
116	LY2SA	KO14	260	42	1569	1742	2163	2088	171	DH0GHU	JN38	186	41	1170	0	2117	1937
117	OK1HAG	JN79	260	0	1441	1749	1909	3463	172	HB9MIO/P	JN37	185	0	1316	975	0	2183
118	F6CKZ	JN09	258	0	1552	1330	1721	3408	173	S59AM	JN65	184	0	1377	0	1945	1788
119	DK8EL	JO31	256	0	1199	1051	1870	1996	174	ES5RY	KO38	183	32	1198	1695	2002	1409
120	OM7AQ	JN98	253	49	1484	1294	1907	2483	175	UA3T	LO16	183	0	1163	1941	2145	0
121	ES1RF	KO29	252	30	1184	1820	1978	2084	176	HB9RUZ	JN47	183	48	1060	1050	0	3014
122	DH9NBB	JN49	249	54	1363	1228	1846	2039	177	OK1IAS	JO60	179	34	1392	1444	0	2138
123	YU1VG	JN94	248	47	1407	826	1727	2294	178	DL3YEE	JO42	178	0	1574	1450	1480	2106
124	DG1BA	JO43	245	0	1674	1280	1588	2239	179	DK5WO	JO30	177	35	1474	1219	0	1993
125	DG1VL	JO61	245	44	1373	1223	1817	2325	180	DK9RL	JN69	177	0	1311	1513	1286	3316
126	DL1SUZ	JO53	244	45	1238	1661	1811	2006	181	SP2IQW	JO94	174	28	1611	1611	997	1877
127	LZ1ZX	KN32	243	0	1162	0	1945	2729	182	DG3HS	JO53	174	0	1152	1091	0	2306
128	DK1VI	JN49	241	0	1148	1107	1604	3131	183	HB9AOF	JN36	173	45	1201	670	1675	2166
129	OK2QI	JO80	238	47	1475	1686	1380	2050	184	OK1VEI	JO70	170	0	1677	1197	1398	0
130	OK1KEI	JO70	235	0	1861	1259	983	2067	185	ES1AO	KO29	169	25	1162	1176	1792	2136
131	UT7GA	KN66	234	0	1877	1446	2131	2617	186	OK1KRY	JN69	166	40	1437	977	0	1830
132	OK2PNN	JN89	234	0	149	1216	0	3771	187	UY7ON	KN04	164	36	914	0	1897	2273
133	HB9DFG	JN37	232	49	1367	1299	1784	2302	188	ON4ZN	JO21	163	32	1390	980	0	2149
134	OK1PG	JO70	229	49	1773	0	0	3488	189	ES1JL	KO29	163	17	1379	1596	0	0
135	F5PAU	IN88	229	43	1630	0	0	2425	190	DL0UL/P	JN48	163	0	1026	0	1342	2019
136	PA0ZM	JO32	227	42	1028	1771	2061	2246	191	DG0CAL	JO52	161	0	1160	0	1543	2105
137	G3XDY	JO02	226	38	1355	2049	1835	2124	192	UA4AQL	LO20	161	0	1124	1841	2158	2195
138	F5DE	JN05	225	40	1891	1671	1892	2399	193	ES1AW	KO29	158	25	1230	1680	0	1924
139	OK1VMS	JO70	225	44	1692	1232	0	2225	194	SP9FG	JN99	156	30	1647	1283	0	1698
140	F1GTU	JN05	225	0	1650	967	1934	2400	195	OK1CA	JO70	156	0	1540	1065	950	2096
141	OK1VBN	JN78	223	45	1578	1682	1915	2209	196	YZ7MON	JN95	156	31	1004	0	1653	2279
142	ES5EJ	KO38	218	30	1422	1804	0	2070	197	HA8MV	KN06	156	34	895	1384	1736	2080
143	ES0IW	KO19	216	32	1545	1687	0	1861	198	ES0BI	KO18	154	21	1439	1823	1528	0
144	9A4EW	JN95	216	0	1075	0	1956	2293	199	RW3PF	KO93	153	0	1015	1840	0	2162
145	DL5BBL	JO42	215	0	1416	1290	0	2028	200	DJ6XV	JO31	152	34	1337	992	0	2007
146	DC6DY	JO31	212	0	1416	1045	1914	2292	201	ES2QN	KO29	152	22	1175	1460	0	2116

202	OZ7IS	JO65	151	32	1128	1294	1901	1845	
203	ES6PZ	KO38	151	20	1101		0	0	2532
204	YU7KB	JN94	150	35	853		0	1874	2256
205	UT5JCW	KN64	150	0	0	0	0	0	0
206	CT1FAK	IN50	149	25	2129		0	2250	2488
207	DK0PX	JN48	147	0	1161		0	1815	1649
208	ES1CW	KO29	142	21	1192	1570		0	2143
209	OK2PMN	JN88	141	0	871	1547	887	2101	
210	DL0GTH	JO50	139	23	1124		0	0	0
211	OK2UFB	JN99	136	27	1526		0	0	1983
212	RW4AK	LO20	136	0	1126	1480	2158	2301	
213	ES5QA	KO38	135	35	1665	1788	1555	2236	
214	OK2KDS	JN99	134	0	1568		0	0	1983
215	DG5NEX	JN49	133	0	1234		0	1333	1941
216	DL3IAS	JN49	130	36	988	1123	1830	1866	
217	OK1DTG/P	JO70	127	27	1351	1352		0	0
218	RU3ZD	KO81	126	0	1713	2126	1755	2363	
219	DL5IO	JN49	126	0	1073	925	1450	1899	
220	LA7DFA	JP33	125	0	630	1816	1803	0	
221	F1PYW	JN38	124	30	936	888	1522	1958	
222	HB9S/P	JN36	123	24	1135		0	0	0
223	SS5J	JN75	123	27	1123	1036	983	1984	
224	DL3NAW	JN59	120	0	1019		0	1961	1237
225	F6FGO	JN25	118	31	1390		0	0	2218
226	OK2KJU	JN89	115	32	1318	1766		0	1494
227	YU7AZX	KN04	113	29	914		0	1389	2173
228	OK2XTE	JN79	111	33	1362		0	0	2267
229	DL0SP/P	JO62	111	0	1315	785		0	1608
230	DJ8ES	JO43	106	19	1306		0	0	1856
231	DL5NEN	JN59	106	30	748		0	1767	1640
232	ON7WR	JO20	106	24		0	0	0	1834
233	I3ZVN	JN55	98	32	1212		0	0	2237
234	OK2PHM	JN89	97	20	829	1265		0	2262
235	ES1II	KO29	95	13	979	1570		0	0
236	LA/DL7YS/P	JO37	93	22	1207		0	1673	0
237	DK0FLT	JN59	93	18	975		0	0	0
238	CT1DIN	IN60	91	18	1218		0	0	2338
239	OK1UDX	JN79	91	19	537		0	0	0
240	CT1DDW	IN60	90	17	2100		0	0	2500
241	OL5Z	JN89	90	21	928	1527		0	0
242	ES2QH	KO29	86	15	1072	1108	1517		0
243	CT1CAD	IM67	85	18	1304		0	0	2249
244	ES1DF	KO29	77	0	961	1080		0	0
245	DL3AZI	JO51	76	0	969		0	1543	0
246	SM4SJY	JP70	73	11	1262	870		0	1160
247	F6OBT/P	JN19	73	11	0	0	0	0	0
248	OK1HRR	JO70	66	16	762		0	0	1890
249	CT1BGE	IM58	65	0	0	0	0	0	0
250	G7LRQ	IO91	60	16	1088		0	0	0
251	SP6MLK/P	JO80	58	16	853	756		0	1446
252	DG7SFL	JN49	57	11	759		0	0	1750
253	ES3BM	KO29	54	11	1128		0	0	0
254	ON4LCV	JN29	50	10	857		0	0	0
255	F50IH/P	JN08	49	8	666		0	0	0
256	JX7DFA	IQ50	45	0	1	1120	2211		0

257	IW3HTU	JN55	43	13	1180		0	0	0
258	F1JKY	JN25	40	10	798		0	0	991
259	IW1QD	JN44	37	10	1000		0	0	1358

DUBUS 432 MHz Top List

NR	CALL	WW	WKDC	TR	AU	MS	ES	
1	DJ9BV	JO43	219	0	2154	1863	1440	0
2	PA0RDY	JO22	207	0	1979	1807	1376	0
3	DK3WG	JO72	207	74	1547	1494	0	0
4	G3LQR	JO02	203	0	2031	1613	0	0
5	PA0EZ	JO22	199	35	1787	1445	0	0
6	PA0WWM	JO22	195	36	1547	1836	0	0
7	OZ7IS	JO65	188	32	1499	1048	1294	0
8	DL8QS	JO43	182	33	1513	1513	0	0
9	OK1AXH	JO70	181	0	1861	1239	0	0
10	DB6BX	JO32	174	34	1550	662	0	0
11	DL7QY	JN59	173	0	1640	1848	1292	0
12	DJ6MB	JO30	171	0	1278	1733	0	0
13	G3XDY	JO02	169	27	1350	1619	0	0
14	LY2WR	KO24	167	26	1995	1593	1935	0
15	F6DKW	JN18	163	23	1519	0	0	0
16	HA1YA	JN87	163	40	1438	1221	0	0
17	DF8LC	JO53	161	0	1615	1361	0	0
18	DK6AS	JO52	161	0	1569	775	0	0
19	SP6MLK/P	JO80	160	31	1780	0	0	0
20	DK1KO	JO53	160	0	1643	694	0	0
21	DB6NT	JO50	158	31	1823	0	0	0
22	SP6AZT	JO81	154	0	1538	1087	0	0
23	DK1KR	JO53	154	0	1400	1827	0	0
24	PA4FP	JO33	152	0	2116	1010	0	0
25	SP6GWB/P	JO80	151	30	1780	759	0	0
26	SM7ECM	JO65	151	24	1389	1073	0	0
27	OZ2OE	JO45	150	0	2216	1020	0	0
28	YL3AG	KO26	149	19	1571	1041	0	0
29	SM6ESG	JO67	148	26	1436	712	0	0
30	DH3NAN	JO50	147	0	1437	1008	0	0
31	OK1CA	JO70	146	0	1670	0	0	0
32	DL3YEE	JO42	140	0	1574	1728	0	0
33	ES2WX	KO29	140	17	1232	1415	0	0
34	OK1KEI	JO70	138	0	1682	1185	0	0
35	OK1VEI	JO70	136	0	1532	811	0	0
36	DL1SUN	JO53	136	0	1157	1071	0	0
37	SP9FG	JN99	135	25	1660	0	0	0
38	OK1KIR/P	JO60	133	28	1773	0	0	0
39	SP9EWU	JO90	133	30	1589	1558	1664	0
40	PA0JUS	JO22	130	26	1340	0	0	0
41	OH5LK	KP30	129	0	1386	1196	0	0
42	DL1BKK	JO43	128	0	1513	565	0	0
43	LA8AK	JO38	124	0	1373	981	0	0
44	G6HKM	JO01	124	0	1289	281	0	0
45	PA0ZM	JO32	123	24	1184	1693	0	0
46	G6RAF	IO92	122	0	1730	0	0	0
47	PA2CHR	JO22	122	31	1357	323	0	0
48	OE5VRL/5	JN78	121	0	1524	1031	0	0

49	DL4VCG	JN39	119	0	1335	0	0	0	104	IZ5EME	JN52	86	20	1458	0	1670	0
50	OZ1IPU	JO57	118	18	1387	0	0	0	105	DG1VL	JO61	86	16	1245	0	0	0
51	F5PAU	IN88	117	24	1630	0	0	0	106	DG0CAL	JO52	86	0	1160	0	0	0
52	OK1VMS	JO70	116	23	1434	972	0	0	107	UY5HF	KN66	84	0	1670	0	0	0
53	OK2QI	JO80	114	25	1410	0	0	0	108	OE3JPC	JN88	84	0	1132	1450	1469	0
54	PA0BAT	JO31	114	21	1301	0	0	0	109	HB9MIO/P	JN37	84	0	1096	0	0	0
55	DL0UL/P	JN48	113	0	1238	0	0	0	110	S50C	JN76	84	18	977	0	0	0
56	DJ6XV	JO31	113	19	1128	976	0	0	111	HB9AOF	JN36	84	15	926	0	0	0
57	PE1OGF	JO21	112	18	1288	0	0	0	112	ES0HD	KO18	83	19	1565	614	0	0
58	DL6BCT	JO43	112	0	1152	0	0	0	113	DC6DY	JO31	83	0	1190	0	0	0
59	ON4PS	JO20	111	21	1335	0	0	0	114	DG3XA	JO43	83	13	905	0	0	0
60	ON4ZN	JO21	111	21	1132	0	0	0	115	OH2BNH	KP20	82	12	1235	1046	0	0
61	SP6GZZ	JO81	110	0	1549	870	0	0	116	DL1SUZ	JO53	82	18	1218	0	0	0
62	DK0OG	JN68	110	0	1459	745	0	0	117	F6CKZ	JN09	80	0	1302	0	0	0
63	UA3MBJ	KO88	110	0	1306	1541	0	0	118	DF1EQ	JO31	80	0	1249	0	0	0
64	ON7WR	JO20	110	23	1163	0	0	0	119	ES4EQ	KO39	80	16	1160	907	0	0
65	GW4LXO	IO81	109	0	1550	0	0	0	120	ES0IW	KO19	79	17	1342	906	0	0
66	DL7FF	JO62	109	0	1507	772	0	0	121	OK2KDS	JN99	79	0	1212	0	0	0
67	DH9NBB	JN49	109	24	1363	0	0	0	122	I4YNO/4	JN54	77	15	886	0	0	0
68	HB9MIN/P	JN37	109	0	1300	0	0	0	123	DL5NEN/P	JN59	76	16	964	0	0	0
69	DL3AMA	JO51	109	21	1015	1219	0	0	124	DH3YAK	JO31	75	13	1165	0	0	0
70	F1HDF/P	JN18	108	0	1204	0	0	0	125	F1GTU	JN05	75	0	1114	0	0	0
71	DL0GTH	JO50	106	20	1113	0	0	0	126	OK1FFD	JO60	74	23	1339	0	0	0
72	DL4KG	JO31	105	21	1273	0	0	0	127	DL7YS	JO62	74	17	1100	0	0	0
73	UT1PA	KO21	105	0	1238	1761	0	0	128	OK1MG	JO70	74	18	1045	0	0	0
74	DF9QX	JO42	105	0	1136	721	0	0	129	DG6GP	JN48	74	13	1024	0	0	0
75	DL2DR	JO31	104	21	1158	0	0	0	130	OK1KRQ/P	JN69	73	16	1091	0	0	0
76	DK5WO	JO30	104	20	1150	0	0	0	131	UR7GN	KN66	70	0	1790	0	0	0
77	DC4XH	JO43	104	20	1133	808	0	0	132	OK1SC	JO70	70	0	1310	758	0	0
78	ES6RQ	KO37	103	19	1452	1148	0	0	133	OK2PWY	JN89	70	17	1135	0	0	0
79	DL1KDA	JO30	102	22	1286	999	1334	0	134	OK2PNN	JN89	69	0	918	0	0	0
80	OK1DKS/P	JO60	102	23	1118	0	0	0	135	OK1DTG/P	JO70	68	14	1436	0	0	0
81	UT7GA	KN66	101	0	1877	0	0	0	136	DL0SP/P	JO62	67	0	1018	0	0	0
82	HB9CRQ	JN47	101	0	1010	0	0	0	137	SM7JUQ	JO65	65	15	1232	0	0	0
83	ON4GG	JO20	98	0	1407	0	0	0	138	LY2SA	KO14	65	15	1164	638	0	0
84	F5HRY	JN18	98	18	1222	583	0	0	139	UR5BAE	KN29	64	18	1517	0	0	0
85	ON4ANT	JO20	96	0	1406	0	0	0	140	DL9MCC	JN58	64	18	875	0	0	0
86	DH8GV	JO33	94	19	1259	0	0	0	141	ES5WE	KO38	62	11	1406	0	0	0
87	DL6BF	JO32	94	15	882	894	0	0	142	DD0VF	JO60	62	17	1106	0	0	0
88	OK1KRY	JN69	93	23	1350	0	0	0	143	DL8AAV	JO52	62	15	914	0	0	0
89	RX1AS	KN59	93	0	0	0	0	0	144	DG7SFL	JN49	61	10	947	0	0	0
90	DK2DB	JN48	92	0	1331	0	0	0	145	DL3IAS	JN49	61	12	886	0	0	0
91	ES2XM	KO29	92	11	1271	1259	0	0	146	F6FGO	JN25	60	11	1016	0	0	0
92	DJ1LP	JO64	91	9	1414	0	0	0	147	ES0NW	KO29	59	17	1213	675	0	0
93	DG5NEX	JN49	91	0	1187	0	0	0	148	ES0SM	KO08	59	20	1202	925	0	0
94	G4LRT	IO92	90	0	1394	410	0	0	149	UA4NM	LO48	58	0	1230	1310	0	0
95	PE1HWO	JO21	90	18	1290	0	0	0	150	OM7AQ	JN98	57	13	922	0	0	0
96	OK1KPA	JN79	89	0	1176	0	0	0	151	OK2UFB	JN99	56	20	1232	0	0	0
97	DK0PX	JN48	89	0	1168	0	0	0	152	LA/DB1DI/P	JO37	55	12	1013	0	0	0
98	OK1OKL	JO60	88	0	1199	0	0	0	153	OK1PG	JO70	54	0	1773	0	0	0
99	DJ8ES	JO43	88	12	1087	0	0	0	154	YO2IS	KN05	54	0	1020	1741	0	0
100	ES2RJ	KO29	87	17	1261	1123	0	0	155	DH0GHU	JN38	53	12	852	0	0	0
101	DK9RL	JN69	87	0	1185	0	0	0	156	OK1VBN	JN78	53	11	753	723	0	0
102	OK1DFC/P	JO60	87	20	1179	0	0	0	157	ES3GZ	KO28	52	10	1035	0	0	0
103	DK1VI	JN49	87	0	1125	870	0	0	158	DL5BBL	JO42	51	0	841	722	0	0

159	OL5Z	JN89	51	12	761	0	0	0
160	DL9BDM	JO33	50	0	1278	0	0	0
161	SP2JXN	JO94	49	0	1149	0	0	0
162	S53J	JN75	49	9	688	0	0	0
163	ES1JL	KO29	48	11	1324	0	0	0
164	DK0FLT	JN49	48	14	695	0	0	0
165	ES1RF	KO29	47	10	875	682	0	0
166	I2FUM/2	JN44	47	0	875	0	0	0
167	HA8MV	KN06	47	15	619	1500	0	0
168	F5OIH/P	JN08	46	5	651	0	0	0
169	DL5NEN	JN59	46	13	630	0	0	0
170	SM3BIU	JP73	45	3	917	763	0	0
171	F5DE	JN05	45	6	740	0	0	0
172	I3ZVN	JN55	43	13	1197	0	0	0
173	DK2BJ	JO30	43	9	720	0	0	0
174	OK2KJU	JN89	42	13	731	0	0	0
175	OE1LPW	JN88	41	12	1114	0	0	0
176	OK1HRR	JO70	40	13	765	0	0	0
177	OK2PHM	JN89	39	9	746	0	0	0
178	G7LRQ	IO91	36	12	1208	0	0	0
179	SM4SJY	JP70	36	6	691	554	0	0
180	ES1AO	KO29	35	12	1131	0	0	0
181	DF0RU	JO62	35	0	682	0	0	0
182	ES0ZA	KO19	33	8	1077	0	0	0
183	OK2XTE	JN79	32	11	658	0	0	0
184	ES1DF	KO29	32	7	511	0	0	0
185	ES1CW	KO19	32	7	500	688	0	0
186	SP5HEJ	KO02	31	0	1347	850	0	0
187	F1FIH	JN23	30	7	796	0	0	0
188	ES0IC	KO18	30	7	673	0	0	0
189	ES5MG	KO38	28	9	626	0	0	0
190	ER5MG	KO38	28	9	626	0	0	0
191	ES0BI	KO18	28	7	378	0	0	0
192	ES1CR	KO29	27	12	930	0	0	0
193	OK2VMU	JN99	27	9	880	0	0	0
194	ES5QA	KO38	26	8	803	0	0	0
195	ES0QY	KO18	25	8	650	0	0	0
196	ES1AW	KO29	24	7	512	0	0	0
197	CT1DDW	IN60	23	3	2100	0	0	0
198	ES1II	KO29	22	4	506	0	0	0
199	IW3HTU	JN55	21	6	1110	0	0	0
200	CT1FAK	IN50	20	4	1588	0	0	0
201	OK1HAG	JN79	20	0	650	753	0	0
202	OK2PMN	JN88	13	0	362	0	0	0
203	CT1DIN	IN60	7	2	334	0	0	0
204	RW4AK	LO20	6	0	679	0	0	0
205	UA4AQL	LO20	5	0	676	0	0	0

(Kann ein Portabel Standort sein). Gültig sind alle Felder weltweit. Nur terrestrische Verbindungen zählen. EME-Verbindungen werden in einer eigenen TOP-Liste erfaßt, die der Redakteur für die EME-News verwaltet. Verbindungen über Satelliten und Relais zählen nicht. Die Liste wird in regelmäßigen Abständen veröffentlicht. Verwenden Sie den Vor- und Nachnamen und berichten Sie Ihren Felder-Stand entweder an DL8LAQ oder für Nur-EME an DL7APV. Um die Zahl der Einträge immer aktuell zu halten, wird jeder Eintrag pro Band nur dann weiter veröffentlicht, wenn er mindestens einmal pro Jahr vom Rufzeichen-Inhaber durch Einsenden des untenstehenden Formblatts auf den neuesten Stand gebracht wurde. Nach Ablauf der Frist wird jeder Eintrag automatisch gelöscht.

DUBUS TOP-List publishes unconfirmed claims of squares worked by VHF/UHF-operators. Only one call sign or one QTH (may be portable) can be used for these claims. Only QSO's via terrestrial propagation are valid for this TOP-List. EME-Standings (EME-QSO's only) should be reported to the EME-News editor. QSO's via satellites and relais are not valid. The TOP-List will be published regularly. Please report your standings to DL8LAQ or for EME-ONLY to DL7APV. To have a clear picture of competition and activity each claim one each single band has to be updated at least once a year. Otherwise this entry will be deleted automatically.

Regeln/Rules

Die **DUBUS TOP-List** veröffentlicht regelmäßig Eigenangaben von UKW-Amateuren über die Zahl der von Ihnen gearbeiteten Felder auf den UKW-Bändern. Für die Topliste zählt nur ein QTH und ein Rufzeichen

DUBUS 1296 MHz Top List

DUBUS 1296 MHz Top List															
NR	CALL	WW	WKDCODX												
1	PA0EZ	JO22	133 23 1302	57	OK1OKL	JO60	63 0 1177	117	UT7GA	KN66	28 0 680				
2	PA0VWM	JO22	127 23 1298	58	ON4PS	JO20	63 14 1098	118	DK9RL	JN69	27 0 891				
3	PA0RDY	JO22	124 0 1286	59	OK1DKS/P	JO60	62 13 1207	119	I4YNO/4	JN54	27 8 769				
4	DL4VCG	JN39	119 0 1335	60	G4LRT	IO92	62 0 1152	120	IW3FZQ/4	JN54	27 7 732				
5	F6DKW	JN18	119 21 1273	61	SP9FG	JN99	61 16 1492	121	ES0SM	KO08	26 8 873				
6	OK1AXH	JO70	118 0 1444	62	DG5NEX	JN49	61 0 1060	122	F6FGO	JN25	26 4 839				
7	G3XDY	JO02	118 22 1341	63	ON7WR	JO20	60 14 1046	123	ON4KHG	JO10	26 6 642				
8	HB9AMH/P	JN37	114 0 1351	64	ON4GG	JO20	60 0 982	124	HB9RUZ/P	JN47	25 9 640				
9	G3LQR	JO02	114 0 1274	65	OK1FFD	JO60	58 14 1058	125	OZ8VO	JO56	24 0 951				
10	DB6NT	JO50	108 22 1243	66	DF9QX	JO42	57 0 1066	126	OK2QI	JO80	23 7 1275				
11	SM7ECM	JO65	100 17 1326	67	ON4ANT	JO20	57 0 914	127	F1FIH	JN23	23 6 600				
12	DB6BX	JO32	99 25 1125	68	DJ6XV	JO31	56 11 946	128	OK1VBN	JN78	22 9 950				
13	SM6ESG	JO67	97 19 1445	69	DC8UG	JO30	56 10 900	129	OK1PG	JO70	21 0 985				
14	SP6GWB/P	JO80	95 24 1580	70	DC0DA	JO31	55 0 1034	130	PE1OGF	JO21	21 6 588				
15	DL6NAQ/P	JO40	92 40 1253	71	DJ8ES	JO43	55 10 1025	131	HA8MV	KN06	21 9 576				
16	OK1KIR/P	JO60	92 22 1208	72	DL1SUN	JO53	54 0 1162	132	OH5LK	KP30	20 0 1349				
17	SP6MLK/P	JO80	91 23 1580	73	LY2WR	KO24	53 14 1026	133	UA3MBJ	KO88	20 0 301				
18	OE5VRL/5	JN78	91 18 1524	74	DL3NQ	JN49	51 9 920	134	OK1KRY	JN69	19 7 865				
19	PA0BAT	JO31	91 20 1368	75	DB1BX	JO32	51 12 905	135	OK1KPA	JN79	19 0 783				
20	F5PAU	IN88	89 19 1630	76	DK0FLT	JN59	51 12 684	136	OK2BBF	JN89	19 8 563				
21	OZ2OE	JO45	86 0 1425	77	PE1IHWO	JO21	50 14 1315	137	F5OIHP	JN08	17 5 517				
22	G6DER	IO93	86 0 1306	78	DL1KDA	JO30	50 12 940	138	IW3HTU	JN55	16 4 838				
23	DL7QY	JN59	86 0 1261	79	LA8AK	JO38	49 0 1373	139	SP6AZT	JO81	16 0 820				
24	DK1KR	JO53	85 0 1097	80	PA2CHR	JO22	49 15 828	140	OK2VMU	JN99	16 7 472				
25	DK0OG	JN68	82 0 1160	81	GW4LXO	IO81	48 0 990	141	S5J3	JN75	16 6 410				
26	DL3YEE	JO42	82 0 1136	82	DL3IAS	JN49	48 9 769	142	DL5NEN	JN59	16 16 320				
27	OK1KEI	JO70	81 0 1316	83	DK0PX	JN48	47 0 942	143	ES1RF	KO29	15 3 506				
28	OZ1IPU	JO57	81 16 1096	84	SP9EWU	JO90	46 12 946	144	DG7SFL	JN49	15 3 568				
29	PA4FP	JO33	81 0 939	85	F6CGB	JN18	45 0 700	145	SM4SJY	JP70	14 3 628				
30	OK1VEI	JO70	80 0 1313	86	DJ1KP	JO40	45 0 698	146	ES1AJ	KO29	14 5 533				
31	OZ7IS	JO65	79 17 1205	87	DG0CAL	JO52	44 0 1160	147	ES2XM	KO29	14 5 478				
32	F1HDF/P	JN18	79 9 886	88	HB9BBB	JN47	43 11 1015	148	DL7YS	JO62	14 2 410				
33	DK6AS	JO52	78 0 1421	89	IZ5EME	JN52	42 10 1036	149	DF0RU	JO62	14 0 373				
34	DL1BKK	JO43	77 0 995	90	DJ6MB	JO30	42 0 876	150	ES2WR	KO29	13 5 694				
35	HB9AOF	JN36	77 15 975	91	OE3JPC	JN88	42 0 702	151	ES0Z	KO18	13 5 453				
36	F5HRY	JN18	74 11 1064	92	DL1SUZ	JO53	40 14 968	152	RX1AS	KN59	13 0 0				
37	DL0UL/P	JN48	74 0 962	93	HA1YA	JN87	40 13 862	153	SM7JUQ	JO65	12 7 1061				
38	OK1DFC/P	JO60	73 16 1176	94	ES2RJ	KO29	40 9 765	154	ES1NJ	KO29	12 4 507				
39	OZ1DOQ	JO65	71 17 1322	95	OK1KRQ/P	JN69	39 11 962	155	ES1MW	KO29	11 4 507				
40	DH3NAN	JO50	71 0 1143	96	DK2DB	JN48	39 0 873	156	ES0W	KO18	11 5 443				
41	DH9NBB	JN49	71 13 1016	97	DC6DY	JO31	39 0 865	157	DL5UH	JN48	10 4 673				
42	OK1AIY/P	JO70	70 0 1490	98	LA/DB1DI/P	JO37	38 9 1013	158	OK1ISC	JO70	10 0 440				
43	OK1CA	JO70	70 0 1421	99	F1GTU	JN05	36 0 896	159	OM7AQ	JN98	10 5 426				
44	PA0JUS	JO22	70 0 1265	100	DK2BJ	JO30	36 10 885	160	OK2PWY	JN89	10 6 357				
45	G6HKM	JO01	69 0 1193	101	YL3AG	KO26	36 9 800	161	OK2KJU	JN89	10 6 347				
46	DK5WO	JO30	69 16 1137	102	IOLVA	JN62	35 0 1152	162	OK2PHM	JN89	10 0 341				
47	HB9MIO/P	JN37	69 0 1000	103	DG1VL	JO61	35 6 723	163	IT9VDQ	JN68	9 1 899				
48	DL2DR	JO31	68 13 1158	104	ES2WX	KO29	35 9 692	164	ES1OX	KO29	9 5 772				
49	ON7YK	JO20	68 0 1079	105	S50C	JN76	34 9 626	165	DL0SP/P	JO62	9 2 347				
50	DC4XH	JO43	67 14 1090	106	DG6GP	JN48	33 7 732	166	ES1DW	KO29	9 5 330				
51	DL0GTH	JO50	67 16 1073	107	DH3YAK	JO31	33 5 715	167	YO2IS	KN05	8 0 472				
52	HB9RG	JN47	67 0 920	108	ES4EQ	KO39	33 9 636	168	OK1DTG/P	JO70	8 2 323				
53	DF1EQ	JO31	67 0 908	109	ES6RQ	KO37	33 9 600	169	OK1HRR	JO70	8 2 292				
54	G4PMK	IO93	66 0 1302	110	DJ1LP	JO64	30 0 922	170	ES1TCA	KO29	7 2 246				
55	OK1VMS	JO70	65 18 1302	111	UR7GN	KN66	30 0 820	171	DL3AMA	JO51	7 3 162				
56	PA0ZM	JO32	63 15 1329	112	I2FWM/2	JN44	30 0 779	172	UY5HF	KN66	6 0 520				
				113	ES5WE	KO38	29 7 1249	173	ES2NA	KO29	6 4 349				
				114	I3ZVN	JN55	28 9 1197	174	GU6WDK/P	IN89	6 0 348				
				115	GL7RQ	IO91	28 8 746	175	OK2XTE	JN89	6 2 206				
				116	DK1VI	JN49	28 0 710	176	SP5HEJ	KO02	5 0 433				

177	GJ6WDP/PIN89	5	0	282
178	F8UM	JN15	5	0 220
179	ES0NW	KO19	5	2 190
180	ES1AW	KO29	3	2 269
181	OK2UFB	JN89	3	2 142
182	ES1WQ	KO29	2	2 337
183	ES2NT	KO29	2	1 149
184	ES6RAT	KO28	2	1 125
185	ES1JL	KO29	2	2 108
186	ES2QN	KO29	1	1 198
187	OK2PMN	JN88	1	0 74
188	OH2BNH	KP20	1	1 23

DUBUS 2320 MHz Top List

NR	CALL	WW	WKDCODX
1	PA0EZ	JO22	79 15 973
2	DB6NT	JO50	68 15 1119
3	PA0RDY	JO22	65 01000
4	PA0WWM	JO22	63 151022
5	G3LQR	JO02	57 01006
6	DL6NAQ/P	JO40	53 11 932
7	OK1KIR/P	JO60	51 10 1115
8	SM6ESG	JO67	47 71054
9	DL7QY	JN59	47 01018
10	PA0BAT	JO31	45 12 923
11	DL1BKK	JO43	45 0 760
12	OE5VRL/5	JN78	44 111291
13	G6DER	IO93	44 01265
14	PA4FP	JO33	44 0 727
15	OK1AIY/P	JO70	42 01296
16	DL0GTH	JO50	42 71052
17	SM7ECM	JO65	42 9 942
18	OZ1IPU	JO57	38 71028
19	DC8UG	JO30	35 8 900
20	OK1OKL	JO60	34 0 830
21	DF1EQ	JO31	34 0 678
22	DL0UL/P	JN48	33 0 960
23	G3XDY	JO02	33 8 947
24	F5HRY	JN18	32 6 785
25	ON7WR	JO20	32 8 756
26	DJ1KP	JO40	32 0 454
27	OZ2OE	JO45	31 0 876
28	DC0DA	JO31	31 0 775
29	DL3NQ	JN49	29 8 890
30	OZ7IS	JO65	29 9 860
31	ON7YK	JO20	29 0 733
32	HB9MIO/P	JN37	29 0 694
33	DL3YEE	JO42	28 0 912
34	G4LRT	IO92	27 01022
35	DH9NBB	JN49	27 7 654
36	DL4VCG	JN39	27 0 553
37	DF9QX	JO42	26 0 915
38	DK0PX	JN48	26 0 853
39	OZ1DOQ	JO65	25 7 830
40	DL2DR	JO31	25 0 823
41	I0LVA	JN62	25 0 612
42	DK0OG	JN68	24 0 675
43	G4PMK	IO93	22 01249

44	DK2DB	JN48	22 0 873
45	OK1DKS/P	JO60	22 4 602
46	DB1BX	JO32	22 7 525
47	DL3IAS	JN49	21 6 604
48	F1HDF/P	JN18	19 2 621
49	I3ZVN	JN55	19 7 603
50	DJ8ES	JO43	18 71025
51	HB9AMH/P	JN37	18 0 933
52	G4DDK	JO02	17 0 969
53	LA/DB1DI/P	JO37	17 7 825
54	DG5NEX	JN49	16 0 465
55	S51WI	JN75	16 4 463
56	OK1KRQ/P	JN69	15 4 350
57	SP6GWB/P	JO80	14 4 587
58	DK1KR	JO53	13 0 792
59	DJ6XV	JO31	12 3 396
60	DK6AS	JO52	11 0 620
61	OK1DFC/P	JO60	11 3 549
62	IW3FZQ/4	JN54	11 3 403
63	PA0JUS	JO22	10 5 705
64	I25EME	JN52	10 3 552
65	I2FUM/2	JN44	10 0 354
66	OK2BFF	JN89	10 6 308
67	OK1KEI	JO70	9 0 786
68	SP9FG	JN99	9 5 717
69	IW3HTU	JN55	9 2 542
70	DL1SUN	JO53	9 0 349
71	LA8AK	JO38	8 0 677
72	OK1CA	JO70	8 0 291
73	F1FIH	JN23	8 1 239
74	OK1PG	JO70	8 0 0
75	F6CGB	JN18	7 0 407
76	DG6GP	JN48	7 2 388
77	DH3NAN	JO50	7 0 331
78	F1GTU	JO55	7 0 313
79	SP6MLK/P	JO80	6 3 272
80	ON4PS	JO20	5 4 574
81	S50C	JN76	5 2 346
82	OK1KRY	JN69	5 3 189
83	F5PAU	IN88	4 0 260
84	OK2VMU	JN99	4 2 220
85	OK2QI	JO80	4 2 201
86	OM7AQ	JN98	3 3 281
87	DF2CA/P	JN57	3 0 206
88	GW4LXO	IO81	3 0 200
89	OK1VBN	JN78	3 2 158
90	DL1KDA	JO30	3 2 98
91	DG1VL	JO61	2 2 91
92	SP9EWU	JO90	1 0 134
93	G8BKE/P	IO80	1 1 114

DUBUS 3400 MHz Top List

NR	CALL	WW	WKDCODX
1	DB6NT	JO50	31 6 741
2	PA0EZ	JO22	28 5 835
3	DL6NAQ/P	JO40	25 4 860
4	G3LQR	JO02	22 0 924
5	PA0WWM	JO22	22 5 850

6	PA0RDY	JO22	19 0 643
7	PA0BAT	JO31	18 3 568
8	DC0DA	JO31	17 0 660
9	G6DER	IO93	15 0 859
10	DL1BKK	JO43	15 0 703
11	DL3NQ	JN49	15 5 637
12	DL7QY	JN59	15 0 565
13	DC8UG	JO30	13 6 724
14	DF1EQ	JO31	13 0 532
15	DL2DR	JO31	13 0 470
16	DB1BX	JO32	12 4 425
17	PA4FP	JO33	11 0 464
18	DK2DB	JN48	11 0 331
19	G4PMK	IO93	10 0 845
20	DK0PX	JN48	9 0 632
21	G4LRT	IO92	9 0 509
22	DL0UL/P	JN48	9 0 239
23	DL0GTH	JO50	7 2 466
24	DL4VCG	JN39	6 0 339
25	OZ2OE	JO45	5 0 772
26	DJ8ES	JO43	5 3 578
27	DJ6XV	JO31	5 3 396
28	GW4LXO	IO81	3 0 117
29	DK0OG	JN68	3 1 78
30	DF9QX	JO42	2 0 143
31	DG1VL	JO	2 1 91
32	DF2CA/P	JN57	2 0 24
33	OZ1IPU	JO57	1 1 209
34	G8BKE/P	IO80	1 1 114
35	GU6WDP/P	IN89	1 0 6

DUBUS 5760 MHz Top List

NR	CALL	WW	WKDCODX
1	PA0EZ	JO22	38 61017
2	DB6NT	JO50	38 101000
3	SM7ECM	JO65	36 47 960
4	HB9AMH/P	JN37	36 0 929
5	HB9MIO/P	JN37	26 0 694
6	SM6ESG	JO67	25 6 951
7	G3LQR	JO02	23 0 949
8	PA0BAT	JO31	22 8 723
9	PA0WWM	JO22	20 8 863
10	F5HRY	JN18	20 4 517
11	DL1BKK	JO43	19 0 689
12	I3ZVN	JN55	19 7 573
13	OE5VRL/5	JN78	18 6 901
14	OZ1IPU	JO57	18 6 807
15	F1GHB/P	IN88	17 0 669
16	F1HDF/P	JN18	17 4 638
17	OK1KIR/P	JO60	17 3 393
18	OK1UWA/P	JO70	16 0 998
19	DL0UL/P	JN48	14 0 660
20	S51WI	JN75	14 3 586
21	I0LVA	JN62	14 0 557
22	G6DER	IO93	13 0 947
23	S51JN/P	JN65	12 4 557
24	DL3NQ	JN49	12 4 318
25	DC8UG	JO30	11 5 724

26	OK1AIY/P	JO70	11	0	693	16	HB9MIN/P	JN37	45	0	939	76	G4PMK	IO93	14	0	958
27	OZ7IS	JO65	11	4	593	17	DJ1KP	JO40	45	0	656	77	DC0DA	JO31	14	0	639
28	DC0DA	JO31	11	0	451	18	DM2AFN	JO61	41	9	662	78	I4XCC	JN63	13	0	496
29	DK2DB	JN48	11	0	315	19	DL3YEE	JO42	40	0	700	79	OZ1DOQ	JO65	13	5	472
30	DL7QY	JN59	10	0	565	20	G4BRK	IO91	39	0	1115	80	PA4FP	JO33	12	0	555
31	OK1OKL	JO60	9	0	611	21	I6XCK/6	JN63	39	0	702	81	GW4LXO	IO81	12	0	309
32	DL6NAQ/P	JO40	9	2	452	22	DK0FLT	JN59	39	10	683	82	G4KNZ	IO91	12	0	247
33	OZ1DOQ	JO65	9	4	442	23	DL3NQ	JN49	38	9	712	83	OK1DKS/P	JO60	11	2	616
34	DB1BX	JO32	9	4	425	24	DK0OG	JN68	38	7	78	84	S50C	JN76	10	3	346
35	DK0PX	JN48	9	0	409	25	SM6ESG	JO67	37	6	1275	85	DJ6XV	JO31	10	3	285
36	IW3FZQ/4	JN54	9	4	291	26	OK1JKT/P	JO60	37	9	845	86	F6CGB	JN18	9	0	677
37	DL2DR	JO31	9	0	201	27	LX1DU	JN29	37	0	700	87	DJ8ES	JO43	9	4	593
38	IW3HTU	JN55	8	3	542	28	DH9NBB	JN49	36	9	654	88	ON4KHG	JO10	9	5	353
39	HB9MIN/P	JN37	8	0	286	29	I6CXB/6	JN63	35	0	751	89	DC8EC/A	JN57	9	0	297
40	LA/DB1DI/P	JO37	7	5	746	30	G3GNR	IO70	34	0	1275	90	G4LRT	IO92	8	0	824
41	DL0GTH	JO50	7	2	674	31	HB9RG	JN47	34	0	761	91	IW3QCV	JN65	8	2	532
42	G4PMK	IO93	6	0	958	32	I0LVA	JN62	32	0	850	92	F5HRY/P	JN08	8	2	491
43	OK1DKS/P	JO60	6	1	318	33	DL6NAQ/P	JO40	32	8	656	93	DL1KDA	JO30	8	4	477
44	DC8EC/A	JN57	6	0	278	34	OK1VAM	JO60	32	7	640	94	F5PAU	IN88	8	0	264
45	I2FUM/2	JN44	6	0	201	35	G4DDK	JO02	31	0	901	95	F6CGB/P	JN12	7	0	823
46	OZ2OE	JO45	5	0	679	36	DL6NCI	JO50	31	6	481	96	DF1EQ/P	JO31	7	0	283
47	DJ8ES	JO43	5	5	578	37	DL1BKK	JO43	30	0	842	97	SP6MLK/P	JO80	6	4	355
48	DF1EQ	JO31	5	0	461	38	DL0UL/P	JN57	30	0	646	98	ES0SM	KO08	5	2	384
49	F6CGB	JN18	5	0	407	39	DL0GTH	JO50	30	7	240	99	DG0CAL	JO52	5	0	255
50	DJ6XV	JO31	5	2	176	40	EA6ADW/P	JM19	29	7	1090	100	LA8AK	JO38	5	0	212
51	DK0OG	JN68	5	2	78	41	DG1VL	JO61	29	4	654	101	OK2QI	JO80	4	0	303
52	DL4VCG	JN39	4	0	339	42	OZ1IPU	JO57	28	7	941	102	G8BKE/P	IO80	4	1	242
53	PA4FP	JO33	4	0	235	43	HB9MIO/P	JN37	28	0	694	103	F5OIH/P	JN08	4	1	149
54	DG1VL	JO61	4	2	191	44	DL3IAS	JN49	28	9	584	104	DH3NAN	JO50	3	0	134
55	F8UM/P	JN05	4	0	162	45	OK1OKL	JO60	27	0	795	105	PA0JUS	JO22	2	2	245
56	OK2VMU	JN99	3	2	180	46	OK1AIY/P	JO70	25	0	736	106	SP9FG	JN99	2	2	115
57	OK1KRY	JN69	3	2	175	47	DK0PX	JN48	25	0	567	107	DG5NEX	JN49	1	0	173
58	F6CGB/P	JN24	2	0	375	48	OK1KIR/P	JO60	25	5	553	108	OK1KRY	JN69	1	1	78
59	G8BKE/P	IO80	2	1	242	49	F1GHB/P	IN88	24	0	669	109	DL0SP/P	JO62	1	1	28
60	OK2QI	JO80	2	0	108	50	DL1VAA	JO61	24	4	661	110	SM4SJV	JP70	1	1	0
61	ES2WX	KO29	2	2	89	51	DK4GD/P	JN48	24	0	566						
62	GJ6WDP/P	IN89	1	0	136	52	ON7WR	JO20	23	9	756						
63	OK1KRQ/P	JN69	1	1	96	53	I3ZVN	JN55	23	7	573						
64	SP6MLK/6	JO70	1	1	1	54	OZ2OE	JO45	22	0	789						
65	SP6MLK/P	JO80	1	1	1	55	DL2DR	JO31	22	4	603						
66	SP6GWB/P	JO80	1	1	1	56	S51JN/P	JN65	21	8	637						
						57	S51WI	JN75	21	5	586						
						58	DC8UG	JO30	20	6	753						
						59	DB1BX	JO32	20	7	705						
						60	DK8ZP	JO40	20	0	537						
						61	DL4VCG	JN39	20	0	533						
						62	DF9QX	JO42	19	0	504						
						63	DK2DB	JN48	19	0	432						
						64	G4LDR	IO91	18	0	1118						
						65	LA/DB1DI/P	JO37	18	6	825						
						66	DL5NEN/P	JN49	18	6	466						
						67	ON7YK	JO20	16	0	494						
						68	OK1KRQ/P	JN69	16	3	325						
						69	HB9AMH	JN37	15	0	567						
						70	SP6GWB/P	JO80	15	4	545						
						71	IW3FZQ/4	JN54	15	5	519						
						72	DL7QY	JN59	15	0	492						
						73	OK1DFC/P	JO60	15	2	490						
						74	OK1UWA/P	JO70	15	0	434						
						75	IW5ADB	JN53	14	0	1053						

DUBUS 10 GHz Top List

NR	CALL	WW	WKDCODX
1	F6DKW	JN18	74 11 1215
2	PA0EZ	JO22	70 13 1017
3	F5HRY	JN18	59 8 877
4	G3WDG	IO92	55 0 1135
5	G4KGC	IO92	53 0 1135
6	SM7ECM	JO65	53 8 1110
7	HB9AMH/P	JN37	51 0 939
8	F1HDF/P	JN18	51 7 867
9	G3LQR	JO02	50 0 1006
10	DB6NT	JO50	49 14 1000
11	PA0WWM	JO22	48 13 850
12	PA0BAT	JO31	48 12 785
13	DK1KR	JO53	47 0 868
14	DL4EAU/P	JO51	47 9 826
15	OE5VRL/5	JN78	45 11 1136

DUBUS 24 GHz Top List

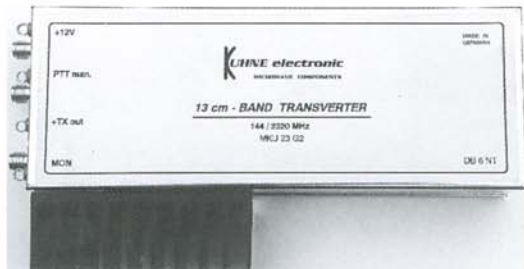
NR	CALL	WW	WKDCODX
1	HB9MIN/P	JN37	12 0 396
2	DC8EC/P	JN57	10 0 301
3	HB9AMH/P	JN37	10 0 286
4	HB9MIO/P	JN37	10 0 172
5	DB6NT	JO50	8 4 301
6	OE5VRL/5	JN78	8 3 273
7	DJ1KP	JO40	8 0 273
8	PA0EZ	JO22	7 3 391
9	IW3EHQ/P	JN66	7 1 278
10	EA6ADW/P	JM19	7 2 226
11	DK0OG	JN68	7 2 193
12	S51JN/P	JN65	6 3 293
13	OK1AIY/P	JO70	6 0 281
14	G4DDK	JO02	6 0 268
15	IW3FZQ/4	JN54	6 3 250
16	PA0BAT	JO31	6 2 195
17	DK4GD/P	JN48	6 0 184
18	G3WDG	IO92	5 0 392
19	DL3NQ	JN49	5 2 287
20	G3LQR	JO02	5 0 261
21	SM6ESG	JO67	5 1 242

continued on page 73

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- ☒ Individual adjustment of RX- and TX-gain
- ☒ It's possible to coupling-in an external OCXO
- ☒ Switched output voltage for ext. PA. and ANT. relays
- ☒ DC output for monitoring the output power. MON
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