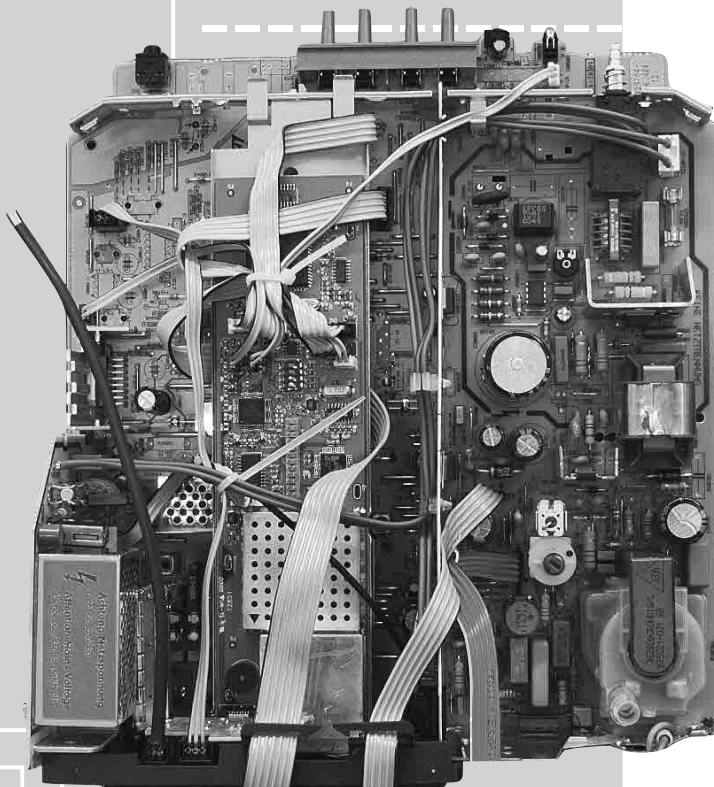


### CUC 2003 H

### T 55 - 830 Multi/COM

GCL5272 / VNM



Zusätzlich erforderliche Unterlagen für den Komplettservice  
Additionally required Service Documents for the Complete Service

#### Service Manual

**CUC 2003  
CUC 2003 H**

Materialnr./Part No.  
720100240000

#### Ergänzung Supplement

**1**

Materialnr./Part No.  
720100240100

#### Service Manual

**Sicherheit  
Safety**

Materialnr./Part No.  
720108000000

#### Service Training

**CUC 2000**

Materialnr./Part No.  
© 720103503500  
© 720103503600

Materialnummer/Part Number 720100240200

Änderungen vorbehalten/Subject to alteration • Printed in Germany HD

E-BS-SA 12 0301

<http://www.grundig.com>

### Grundig Service

Hotline Deutschland...  
...Mo.-Fr. 8.00-18.00 Uhr

#### Technik:

|                   |               |
|-------------------|---------------|
| TV                | 0180/52318-41 |
| TV                | 0180/52318-49 |
| SAT               | 0180/52318-48 |
| VCR/LiveCam       | 0180/52318-42 |
| HiFi/Audio        | 0180/52318-43 |
| Car Audio         | 0180/52318-44 |
| Telekommunikation | 0180/52318-45 |
| Fax:              | 0180/52318-51 |

Planatron (8.00-22.00 Uhr) 0180/52318-99

Ersatzteil-Verkauf: Mo.-Fr. 8.00-19.00 Uhr

|          |               |
|----------|---------------|
| Telefon: | 0180/52318-40 |
| Fax:     | 0180/52318-50 |

Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Materialnummer 720108000000, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!



The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 720108000000, as well as the respective national deviations.

Für die auf der Titelseite aufgeführten Chassis gilt das Service Manual CUC 2003 / 2003 H.  
Diese Ergänzung dokumentiert die Unterschiede bzw. zusätzlichen Bestückungen der Geräte.

Grundlage für den Service sind:

- Service Manual CUC 2003 / 2003 H (Materialnummer 720100240000)
- 1. Ergänzung CUC 2003 / 2003 H (Materialnummer 720100240100)
- Service Manual "Sicherheit" (Materialnummer 720108000000)

The Service Manual CUC 2003 / 2003 H applies to the chassis specified on the front page.  
This Manual describes the differences and the additionally fitted components of the TV receivers.

Basic instructions for servicing are given in the:

- Service Manual CUC 2003 / 2003 H (Part number 720100240000)
- 1st Supplement CUC 2003 / 2003 H (Part number 720100240100)
- Service Manual "Safety" (Part number 720108000000)

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## Hinweise

**Vor dem Öffnen des Gehäuses zuerst den Netzstecker ziehen!**

### Leitungsverlegung

Bevor Sie die Leitungen und insbesondere die Masseleitungen lösen, muss die Leitungsverlegung zu den einzelnen Baugruppen wie z.B. Chassis, Netzschalterplatte, Bedieneinheit, Bildrohrplatte, Ablenkeinheit, Lautsprecher usw. beachtet werden.

Nach erfolgter Reparatur ist es notwendig, die Leitungsführung wieder in den werkseitigen Zustand zu versetzen um eventuell spätere Ausfälle oder Störungen zu vermeiden.

### Netzkabel

Diese Geräte dürfen nur mit dem Original-Netzanschlusskabel mit integrierter Entstördrossel betrieben werden. Dieses Netzkabel verhindert Störungen aus dem Netz und ist Bestandteil der Gerätezulassung. Im Ersatzfall bestellen Sie bitte ausschließlich das Netzkabel laut Ersatzteilliste.

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## Notes

**Before opening the cabinet disconnect the mains plug!**

### Wiring

Before disconnecting any leads and especially the earth connecting leads observe the way they are routed to the individual assemblies like the chassis, mains switch panel, keyboard control panel, picture tube panel, deflection unit, loudspeaker and so on.

On completion of the repairs the leads must be laid out as originally fitted at the factory to avoid later failures or disturbances.

### Mains cable

The TV receiver must only be operated with an original mains connecting cable with an interference suppressor choke integrated in the mains plug. This mains cable prevents interference from the mains supply and is part of the product approval. For replacement please order exclusively the mains connecting cable specified in the spare parts list.

## Modulauflistung – Service Manual mit Ergänzungen

### List of Modules – Service Manual with Supplements

| <b>Modul<br/>Module</b>                           | <b>Materialnummer<br/>Part Number</b> | <b>Service Manual<br/>CUC 2003 / 2003 H</b> | <b>2. Ergänzung<br/>Supplement 2<br/>CUC 2003 H</b> |
|---------------------------------------------------|---------------------------------------|---------------------------------------------|-----------------------------------------------------|
|                                                   |                                       | 720100240000                                | 720100240200                                        |
| Ton - Filterplatte<br>Sound Filter Panel          | 293051290100                          | Seite / Page 3-30                           | –                                                   |
| Bildrohrplatte<br>CRT Panel                       | 293050221900                          | Seite / Page 3-25                           | –                                                   |
| Netzteil (5V / 0,4A)<br>Mains Section (5V / 0,4A) | 293040508400                          | –                                           | Seite / Page 13                                     |
| LS-Buchsenplatte<br>LS Socket Board               | 293051606600                          | –                                           | Seite / Page 13                                     |
| COM - Modul<br>COM - Module                       | 295041082400                          | –                                           | Seite / Page 14                                     |

## Modulübersicht / Module List

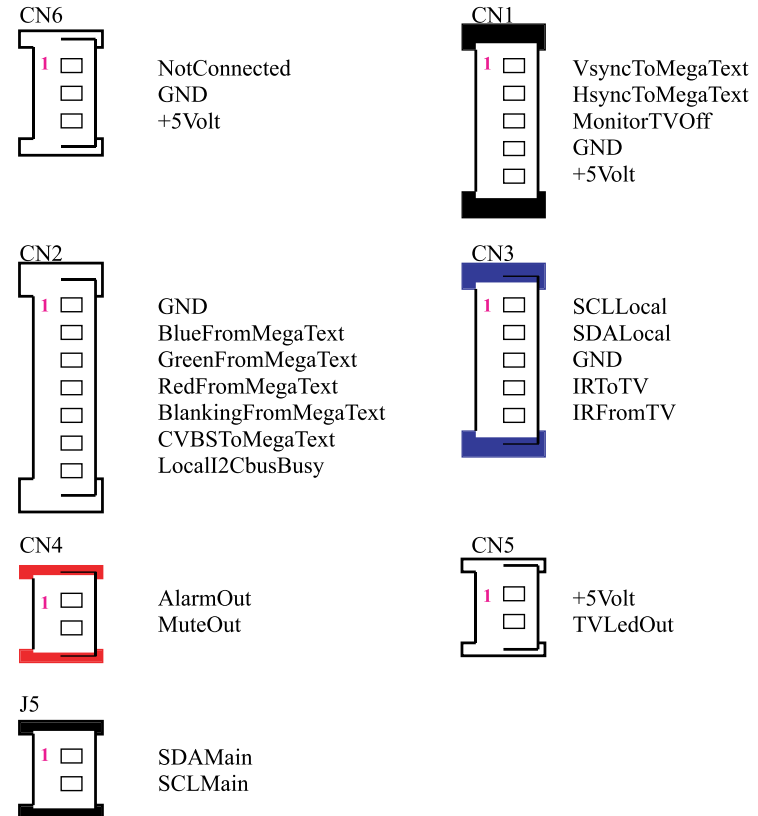
|                                                   | <b>Materialnummer<br/>Part Number</b> | <b>T 55 - 830 Multi/COM</b>                  |
|---------------------------------------------------|---------------------------------------|----------------------------------------------|
|                                                   |                                       | CUC 2003 H<br>VNM                            |
| Bestell-Nr.<br>Order No.                          |                                       | GCL5272                                      |
| Chassis-Nr.<br>Chassis No.                        |                                       | 297040064000<br>297040065900<br>297040066000 |
| Tuner                                             | 295043010100                          | •                                            |
| Ton - Filterplatte<br>Sound Filter Panel          | 29305 129 0100                        | •                                            |
| Bildrohrplatte<br>CRT Panel                       | 293050221900                          | •                                            |
| Netzteil (5V / 0,4A)<br>Mains Section (5V / 0,4A) | 293040508400                          | •                                            |
| LS-Buchsenplatte<br>LS Socket Board               | 293051606600                          | •                                            |
| Fernbedienung TP 800 H<br>Remote Control TP 800 H | 296420611900                          | •                                            |
| COM - Modul<br>COM - Module                       | 295041082400                          | •                                            |

**Technische Daten / Technical Data**

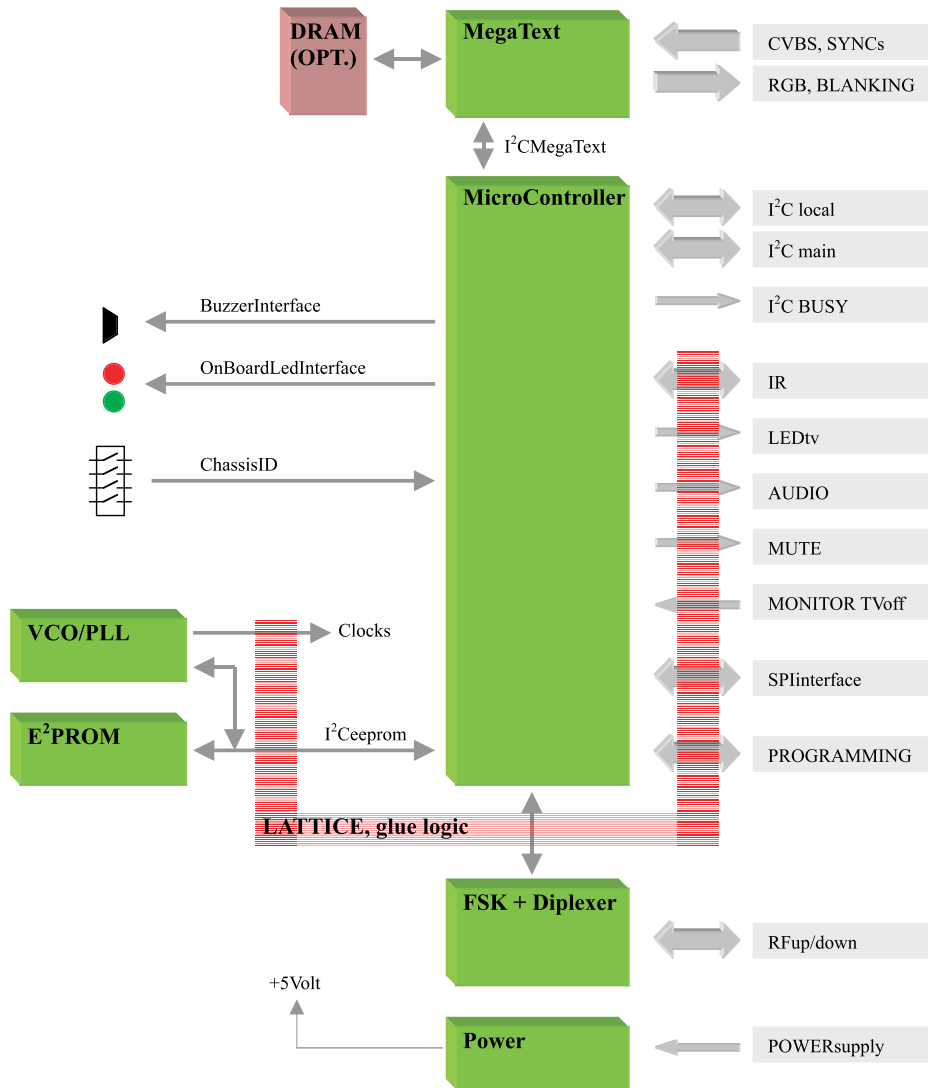
|                                                      |                                                                                                                     |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|                                                      | <b>T 55 – 830 Multi/COM</b><br>CUC 2003 H<br>VNM                                                                    |
| <b>Bildröhre / Picture Tube</b>                      |                                                                                                                     |
| Sichtbares Bild<br>Visible picture                   | 51cm                                                                                                                |
| Bildschirmdiagonale<br>Screen diagonale              | 55cm (21"), FST<br>Black Line D, small neck                                                                         |
| Ablenkwinkel<br>Deflection angle                     | 90°                                                                                                                 |
| Bildwechselfrequenz<br>Vertical frequency            | 50Hz                                                                                                                |
| <b>Elektronik / Electronic</b>                       |                                                                                                                     |
| Programmspeicherplätze<br>Programme positions        | 99 + 1 AV                                                                                                           |
| Blue stretch,                                        | ja / yes                                                                                                            |
| AV-Auswertung<br>AV evaluation                       | auf jeden Programmplatz programmierbar<br>programmable for every programme position                                 |
| Tuner                                                | PLL-Frequenz synthesizer tuning UHF / VHF<br>PLL-frequency synthesizer tuning UHF / VHF                             |
| TV-Normen<br>TV-Standards                            | PAL / SECAM / NTSC 4,43MHz,<br>B/G, L/L', I DK/K'                                                                   |
| Videotext<br>Teletext                                | 8 Seiten TOP/FLOF-text,<br>8 pages TOP/FLOF-text                                                                    |
| Musikleistung<br>Music power                         | Mono 8W                                                                                                             |
| <b>Anschlüsse Front / Connections Front</b>          |                                                                                                                     |
| Kopfhörer<br>Headphones                              | Mono 3,5mm Klinke,<br>schaltet eingebauten Lautsprecher ab /<br>Mono 3.5mm jack,<br>switch off inserted Loudspeaker |
| <b>Anschlüsse Rückwand / Connections Rear Panel</b>  |                                                                                                                     |
| Euro AV 1(schwarz/black)                             | FBAS-Ein-/Ausgang, RGB-Eingang<br>S-Video Eingang<br>CCVS in-/output, RGB input,<br>S-Video input                   |
| <b>Netzteil / Mains Stage</b>                        |                                                                                                                     |
| Netzspannung (Regelber.)<br>Mains voltage (variable) | 230V ±15%                                                                                                           |
| Netzfrequenz<br>Mains frequency                      | 50 / 60Hz                                                                                                           |
| Leistungsaufnahme<br>Power consumption               | ca. 65W                                                                                                             |
| Standby                                              | ca. 12W                                                                                                             |

Diese Beschreibung (COM Modu) gibt es nur in englischer Sprache  
This description (COM Modu) exists only in English.

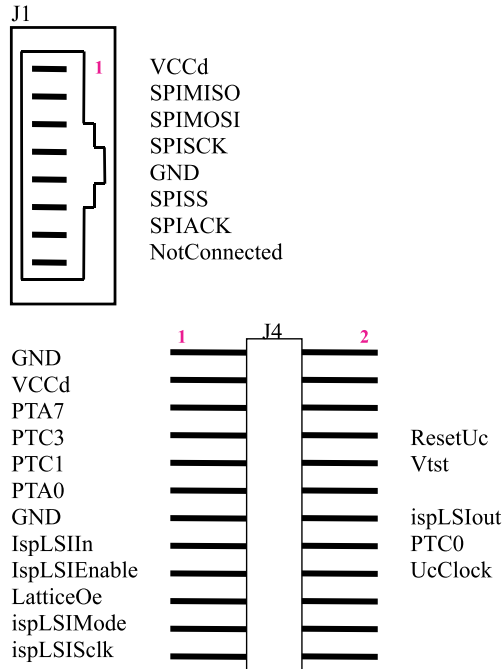
## iTV-Card / COM-Card

Connectors

## iTV-Card / COM-Card

BlockDiagram

## iTV-Card / COM-Card



- CN1: H/V Syncs from TV to MegaText for synchronisation of RGB with the TV  
Monitor TVoff state on pin3. This is 0Volt when the TV is Off (by PowerSwitch) and 13.5-14.5Volt on all other states.
- CN2: CVBS from TV to MegaText  
Red/Green/Blue/Blanking-signals from MegaText to TV  
Monitor Local<sup>2</sup>C-bus busy status line
- CN3: Access to the Local<sup>2</sup>C-bus (I<sup>2</sup>C-bus in the TV)  
IR-signal from TV and IR-signal to TV
- CN4: Mute output and Alarm (Sound) output to the TV
- CN5: TV led output
- CN6: Power input from the TV, only +5Volt will be used by the card
- J5: Access to the Main<sup>2</sup>C-bus in the TV
- J1: RJ45-connector for the PlayStationController
- J4: Connector used for first time programming of the MicroController and the Lattice (PLD)

## iTV-Card / COM-Card

**Board description****First Time Programming****Overview**

After assembling the card, the MicroController and the Lattice have to be programmed via the J4 connector. The Lattice has to be programmed first because this PLD contains logic necessary for the MicroController to run properly.

Downloading of the Lattice software must be done with an ispDownloadCable and ispDownload-software, available from the Lattice distributor.  
The Lattice is only re-programmable by the ispDownload-software+DownloadCable, it isn't in-circuit programmable.

After the Lattice has been programmed, the MicroController can be downloaded with a program which contains the following modules:

1. Test software for the Grundig-factory, and
2. FSK-Bootloader program

The FSK-Bootloader program makes it possible to update (download) new software in the MicroController via the FSK-modem. This means that the card is downloadable while it is working (in field programmable) as long as there is a FSK-connection with the MasterModem.

For mass production, both the Lattice and the MicroController can be purchased pre-programmed from the supplier, so the programming procedure can be skipped and the card is operational immediately after assembly.

**Lattice connections**

The connections necessary for programming the Lattice are:

IspLSIIn  
IspLSIout  
IspLSIenable  
IspLSISclk  
IspLSIMode

The ispLSIenable pin is used to select the Lattice and enabling of the other four control-signals (enabling of the programming-protocol). Programming is done by the ispLSIMode-pin, used for commands (program, verify), the ispLSISclk-pin, used as the serial clock, the ispLSIIn-pin, used for data to the Lattice and the ispLSIout-pin, used for data from the Lattice (verify, readback). For further instructions, please consult the Lattice data book.

**MicroController connections**

The connections necessary for downloading the MicroController are:

PTA0  
PTA7  
PTC0  
PTC1  
PTC3  
Vtst  
Ucclock

## iTV-Card / COM-Card

LatticeOE  
ResetUc

Programming will be done by an 9600Baud serial protocol, where PTA0 is the bidirectional data in/out of the MicroController, and PTA7, PTC0, PTC1, PTC3 are used to select this programming-mode. In this mode the MicroController expects a 9.8304MHz clock, therefore we supply this clock to the card while disabling the onboard MicroController-clock by the LatticeOE pin. The onboard clock is routed through the Lattice with the possibility to TRI-state the output with the LatticeOE line. In normal operation, the LatticeOE-pin won't be used and the onboard clock is always driving the MicroController.

With the ResetUc it is possible to reset the MicroController if this is necessary for the programming-protocol.

## iTV-Card / COM-Card

## Clock generation

## Overview

The onboard clocks can be divided into three parts, the MegaText clock, the DownConverter clock and the clocks for the MicroController + FSK transmission and receiving.

## MegaTextClock

All the internal clocks used by the MegaText-chip (U1) are derived from one external XTAL of 20.48MHz (X6), connected directly to the MegaText-chip. From this XTAL, the MegaText will generate a synchronised internal-clock to the external supplied H and V-sync (or CVBS), and uses this clock for the R/G/B and Blanking output-signals. This means that the MegaText output is always synchronised to the TV.

## DownConverterClock

The DownConverter (U7, MC13156DW) has one external clock-input (LocalOscillator-input) used to down-convert the incoming signal to 10.7MHz. The XTAL (X4) used for the generation of this LocalOscillator is a 3th overtone 63.3625MHz crystal with a load-capacitance of 32pF. The crystal-circuit of X4, L14, L15, C62, C63, C64, R101, R102 and R149 makes sure that the crystal will run on the 3th-harmonic.

## MicroController + FSK-clocks

The clocks for the MicroController and the FSK-part have to be synchronised to make sure that the two FSK-transmission frequencies are in phase, the MicroController is in phase with the FSK-transmission frequencies and that the MicroController-clock is in phase with the extracted FSK-data. Therefore a multiple VCO/PLL-chip (U12, FS6377) is used which will use only one external XTAL (X7, 16MHz) to produce four programmable output clocks.

The programming of the chip will be done by the MicroController via an I<sup>2</sup>C-bus interface. The four output clocks are:

1. 32MHz, used for the MicroController,
2. 42.8MHz, used to extract the data from the received FSK-signal,
3. 16MHz and
4. 16.125MHz as FSK-transmission frequencies.

All these four clock-signals are routed directly into the PLD, the 16MHz and 16.125MHz for FSK-generation, the 42.8MHz for FSK data extraction and the 32MHz to have the possibility to disable (TRI-state) this clock (see [MicroController connections](#) section) and to switch the MicroController to the desired clock source.

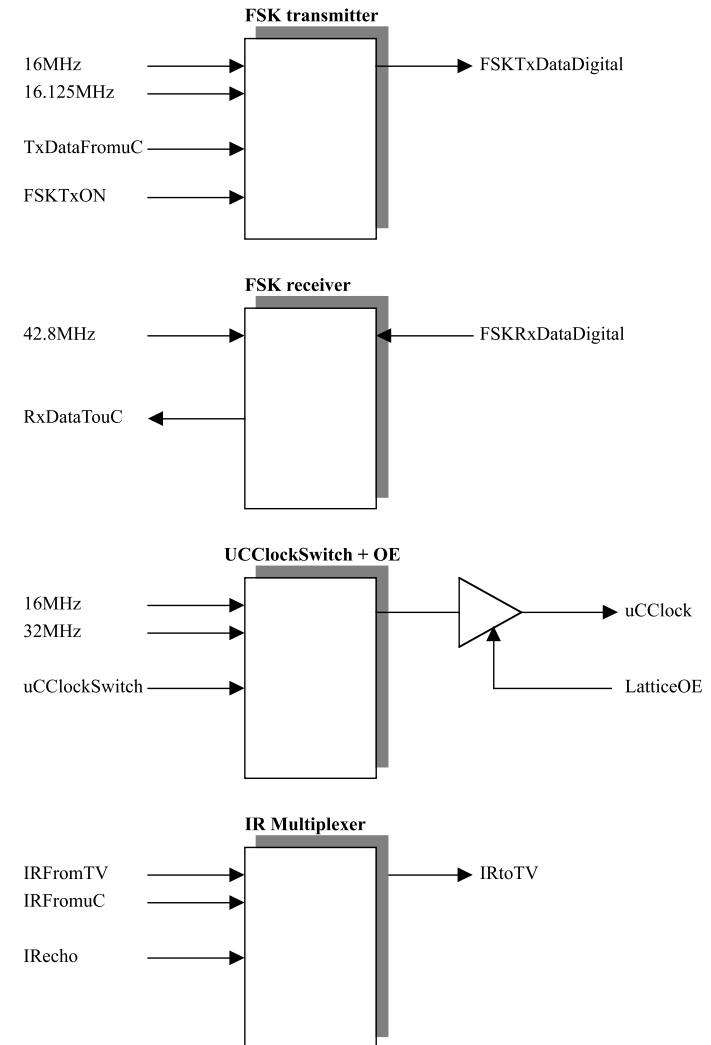
After PowerUp of the card the VCO/PLL-chip has all his registers in the reset-state, which will mean that all the outputs reflect the incoming clock, in this case 16MHz. At this point there isn't a 32MHz-clock for the MicroController. Therefore the MicroController-clock will be switched after PowerUp into the PLD to 16MHz (the 16MHz-output of the VCO/PLL-chip). The MicroController will then initialize everything including the VCO/PLL-chip. When this chip is programmed the MicroController will select the 32MHz-clock source as his clock by clearing the uClockSwitch-line which will cause the PLD to switch to 32MHz instead of 16MHz.

**DownConverter**

The receiving FSK-frequency is 74/74.125MHz. DownConverting this input with a 63.3625MHz clock will produce two frequencies of 10.6375 and 10.7625. This means that we have a centre frequency of 10.7MHz plus or minus 62.5kHz. This makes it possible to use a common, low-cost ceramic filter of 10.7MHz.

After the downconversion, the signal will pass two 10.7MHz filters before entering the 74HCU04 (U8). Using all 6 stages of the 74HCU04 will produce a nice digital TTL-signal representing the FSK-input. A hysteresis-circuit at the first two stages (R143, 470K) makes sure that noise at the input will be suppressed.

The digital-data with the 10.7MHz centre-frequency will then be routed to the PLD to extract the FSK-signal.

**LATTICE PLD****Block diagram**

## iTV-Card / COM-Card

### Switch uControllerClock + TriState

See the *microcontroller connections* in the *first time programming* section for a description of the LatticeOE-pin.

After PowerUp, the 16MHz input is connected to the MicroControllerClock output. After initialising of the VCO/PLL-chip, the MicroController switches the uCClockSwitch-line to select the 32MHz (see *MicroController + FSK-clocks* in the *clock generation* section).

### IR

The *IR-interface* in the *microcontroller* section describes the function of the IR multiplexer.

### FSK Transmitter

The two frequencies are 16 and 16.125Mhz, both coming from the VCO/PLL-chip and therefore in phase. Depending on the transmitted-data from the MicroControllerUART the FSK digital output of the PLD (Pin31) will be 16 or 16.125MHz. The PLD-logic makes sure that switching from one frequency to the other will be done when the two frequencies are in phase. It is important that the data from the Microcontroller is also synchronised to the two FSK frequencies to avoid loss of data while waiting for the “switch moment” of these two frequencies.

The digital FSK-data will then be buffered, filtered and fed into the diplexer.

### FSK Receiver

The FSK-input comes from the 74HCU04 and will be a digital FSK-signal with a centre frequency of 10.7MHz (see *DownConverter* section). The extraction of the data from this FSK-signal will be done in the PLD and uses an 42.8MHz clock (4 times 10.7MHz).

The extracted data is synchronised to the MicroController-clock because that clock comes from the same source as the 42.8MHz (the VCO/PLL-chip). This synchronisation makes sure that there is no data-loss in the MicroControllerUART receiver.

The data from the PLD is routed directly to the MicroController UART input.

## iTV-Card / COM-Card

### MicroController

#### Overview

The following list shows all the functions of the MicroController:

1. FSK-Transceiver
2. PlayStationController-Interface
3. I<sup>2</sup>C-interfaces
4. IR-interface
5. TVIed interface
6. OnBoardled interface
7. Buzzer/Audio/Mute-interface
8. ChassisID/HardwareID-interface

#### FSK-Transceiver

Most of the FSK is already explained in the *PLD* and *DownConverter* sections. The MicroController uses the on-chip UART (pins 9 and 10) as the transceiver of the asynchronous-serial data. The selected baud-rate used for the transmission is 125Kbaud.

With the FSKtx\_on line (pin7) it is possible to disable the FSK-transmission, that means that there is no output out of the card into the cable-network.

#### PlayStationController-Interface

The PlayStationController is connected to the SPI-bus interface. The pins used for this interface are:

1. SPImosi (pin14)
2. SPImiso (pin13)
3. SPIsck (pin15)
4. SPIack (pin6)
5. SPIss (pin4)

The MicroController is the master on the SPI-bus, that means that it supplies the SPIclock and SlaveSelect to the PlayStationController. The PlayStationController will be selected by the assertion of the SlaveSelect-line, the SPIclock will be available and data-access is possible.

#### I<sup>2</sup>C-interfaces

The MicroController uses four I<sup>2</sup>C-interfaces, two onboard and two to access the TV.

The I<sup>2</sup>C-bus called SDA/SCLeeprom (pin28 and 29) is used to access the onboard serial-E<sup>2</sup>PROM and to program the VCO/PLL-chip.

A separate I<sup>2</sup>C-bus is used for the MegaText (pin22 and 23) because the MegaText has the possibility to use a higher speed for the transmission than the normal I<sup>2</sup>C specification.

The I<sup>2</sup>C-busses SDA/SCLocal (pin 26 and 27) and SDA/SCMain (pin 2 and 3) are used to communicate with the TV.

The Local-bus will be used for access of the EEPROM's in the TV. Before accessing this bus the LocalI2CbusBusy-line (pin38) must be monitored to be sure that the bus is free.

The Main-bus is directly connected to the MainI<sup>2</sup>C-bus in the TV.

### IR-interface

The InfraRed from the TV is a TTL-level signal and will be buffered first before feeding to the MicroController (pin20) and the PLD (pin19). The IR-signal made by the MicroController (pin18) is fed directly into the PLD (pin20).  
The MicroController will be able to control the IR-signal flow with the IRecho-line (pin5). It is possible to echo all the incoming IR-signals from the TV directly back-to the TV (echo-mode), or to send MicroController IR-commands to the TV.

### TVled interface

The MicroController has to control the TVled (pin36) which is in front off the TV. The following table shows the different states of the TV-led:

|                             | NormalMode | FactoryMode |
|-----------------------------|------------|-------------|
| <b>TV-OFF (with switch)</b> | OFF        | OFF         |
| <b>TV-ON</b>                | DIMMED     | DIMMED      |
| <b>TV-STANDBY</b>           | ON         | ON          |
| <b>TV-MESSAGE</b>           | FLASHING   | -----       |

The TV-OFF state will be monitored by CN1, pin3. When the TV is off this pin has a voltage of 0Volt, and in all other states there's an unregulated DC-voltage of 13.5-14.5Volt. This signal will be regulated to 4.7Volt by a zener-diode (D9) and fed to the MicroController (pin33).

### OnBoardled interface

The two LEDs onboard will reflect the state of FSK-communication. The REDled (pin32) will be used to show if there's a MasterModem in the system (ON), and the green one (pin39) is ON when the card is actually polled by the MasterModem.  
This means that when the Redled is ON and the GREENled is OFF that the card is not being polled by the MasterModem.

### Buzzer/Audio/Mute-interface

The Buzzer will be controlled by the MicroController (pin19) with a square-wave of a certain frequency. This pin is also connected to CN4, pin1 to give exactly the same signal to the TV.

The Mute-out will be controlled by the MicroController (pin37) with an open-collector output-stage.

### ChassisID/HardwareID-interface

With a dipswitch of four contacts (SW1) it's possible to select the chassis-number of the TV. The MicroController reads this information (pins34, 35, 36 and 39) after PowerUp or a Reset. In this way 16 different chassis-numbers can be selected.

In the same way, only with resistors connected to GND instead of a dipswitch it's possible to give the card a hardwareID. Three pins (pins 4, 14 and 15) are reserved for this purpose to give a total number of 8 possible revisions.

## MegaText

### Overview

In this application, the MegaText-chip (U1, SDA5273) is only used to generate overlay information for all the iTV on-screen menu's. The TeleText decoding is being done by the TV and not by the MegaText-chip. For this OSD-application the SDA5273 is sufficient, but it is also possible to use the more expensive SDA5275 (pin-compatible, iTV-software supports both types).

For future applications the MegaText-chip can decode Level 1.5 and 2.5 TeleText information. For level 1.5-TeleText decoding the SDA5273 can be used, but for full decoding of level 2.5-TeleText the SDA5275 + external DRAM must be used.

### Syncs

The MegaText-chip will run in slave-sync-mode, this means that it will follow the incoming Vsync and Hsync-signals from the TV to synchronise the outgoing R/G/B/Blanking signals.

The CVBS-signal supplied by the TV will not be used in this application because there's no need for Video/TeleText-information. Another reason for the use of the separate H/V-syncs is that these syncs are on TTL-level and therefore easy to use instead of separating sync-information by clamping and data-slicing of the incoming CVBS-signal.

### Overlay

The overlay will be controlled by the BLANKING-output-pin of the MegaText. This is an OpenDrain-output and displays the RGB-information when BLANKING is high. When BLANKING is low, there's no overlay and the TV's internal source will be displayed on the screen.

### Memory

The MegaText has sufficient onboard-memory for the current application. For future applications an external DRAM (U2) can be placed on the PCB. This optional DRAM can have the size of 256K, 1M, 4M or 16Mbit.

### Signals

The signals between the TV and the MegaText-chip are:

CVBS (pin10)  
VSYNC (pin4)  
HSYNC (pin5)  
RED (pin61)  
GREEN (pin62)  
BLUE (pin63)  
BLANKING (pin64)

The R/G/B gain and DC-level can be adjusted by the MegaText internal-registers (software-controllable).

iTV-Card / COM-Card

Diplexer + FilterCircuits

Overview

The function of the passive-diplexer is to transmit the FSK-frequency (16 and 16.125MHz), receive all the input-channels and fed them to the TV and to receive the incoming FSK-frequency (74 and 74.125MHz).

One part of the diplexer is the low-pass filter formed by L2, L3, C19 and C89. This part and the FSK-transmission filter in front makes sure that only the FSK-transmission frequencies will be transmitted onto the cable-network.

The receiver-side of the diplexer is a high-pass filter formed by L1, L4, L22, L23, L24, C17, C18, C20, C87, C88, C90, C91 and C92. This filter makes sure that everything below 45MHz will be suppressed and not feeded to the TV or FSK-receiver including the FSK-transmit frequencies.

The FSK-receiver frequencies will be "tapped" just before the output to the TV by a TAP. The band-pass filter and input-network in front of the down-converter-chip makes sure that only the 74MHz and 74.125MHz will be received, and that there's a perfect impedance-match to the chip for these frequencies.

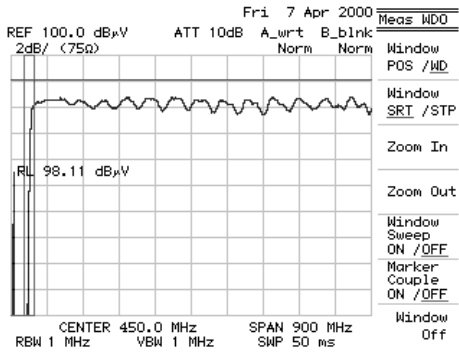
Attenuation networks

The FSK-output is set to 90dB $\approx$ V typical by two attenuator networks (called T-network). The first one consists of R109, R110 and R111 and has an attenuation of -17dB, and the second one with R96, R97 and R98 of -3dB. The total amount of attenuation is -20dB.

A pi-network (R144, R145 and R146) is directly placed after the TAP to be sure that the TAP always sees 75Ohm for all frequencies. The attenuation is as low as possible, -2dB.

Diplexer Characteristics

|                  |                 |
|------------------|-----------------|
| Diplexer-loss    | <2.5dB          |
| High-pass filter | 45MHz - >900MHz |
| Gain-flatness    | >900MHz         |



iTV-Card / COM-Card

Specifications

Electrical Characteristics

|                |               |
|----------------|---------------|
| Supply voltage | 5V DC         |
| Supply current | 400mA typical |

Input/Output Levels

|             |                  |
|-------------|------------------|
| RGB signals | 1V <sub>pp</sub> |
| CVBS signal | 1V <sub>pp</sub> |
| IR signals  | TTL              |
| I2C signal  | TTL              |

|                      |      |
|----------------------|------|
| RGB output impedance | 270Ω |
|----------------------|------|

Memory

|          |                                          |
|----------|------------------------------------------|
| Memory   | 20Kbyte FLASH<br>8Kbyte E_PROM           |
| Optional | 256K, 1M, 4M or 16Mbit DRAM for MegaText |

Data Modem

|                    |                                  |
|--------------------|----------------------------------|
| Communication      | Asynchron, 125Kbaud, Half-duplex |
| Receive frequency  | 74MHz/74.125MHz                  |
| Receive level      | >40dBμV                          |
| Transmit frequency | 16MHz/16.125MHz                  |
| Transmit level     | 90dBμV typical                   |
| Modulation         | FSK (Frequency Shift Keying)     |

Card Configuration

- On each card, two parameters can be configured:
- 1. TvSetId (4 hexadecimal digits), defining the card number
  - 2. RcuLevel (1 digit), defining the RCU level that the card will respond to.

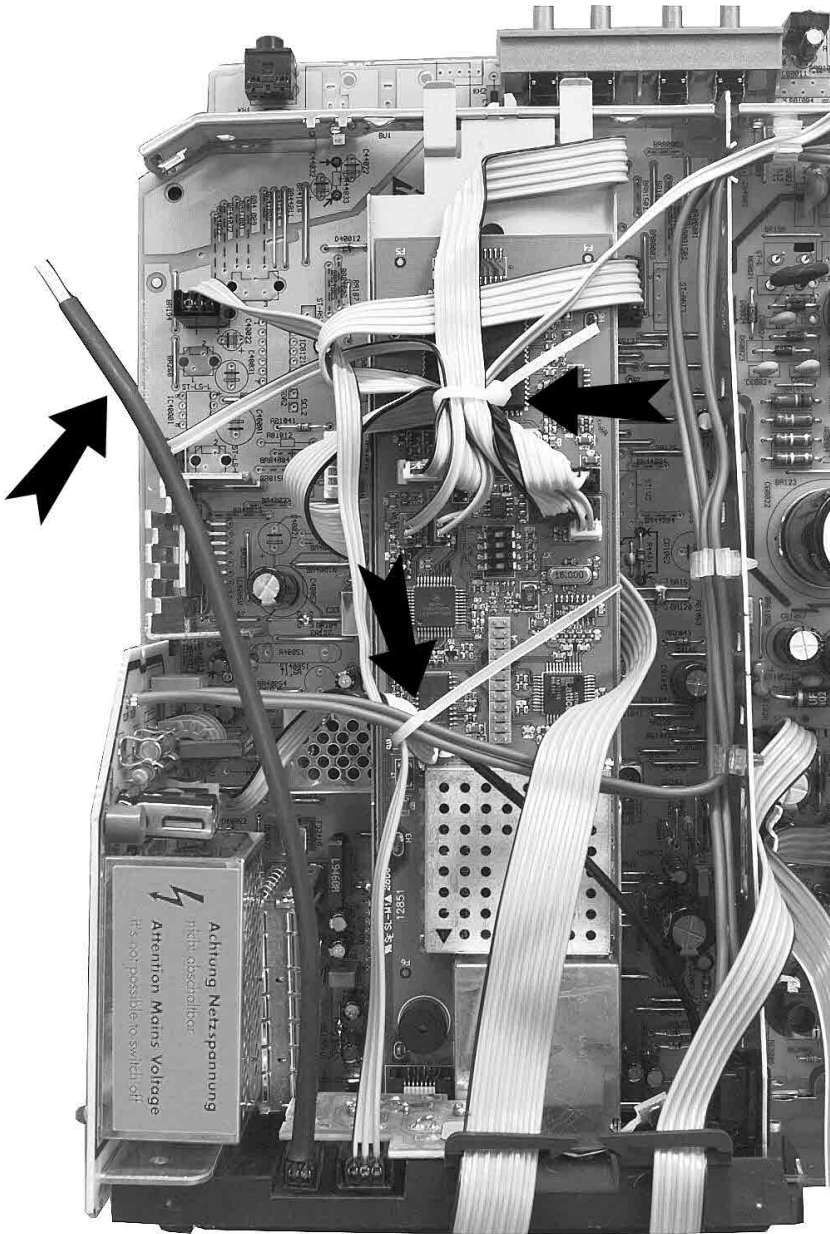
In order to configure the card, a RCU level 6 (engineering remote controller) is needed; pressing TvInfo on a RcuLevel 6 remote controller will bring up the configuration menu where these parameters can be programmed and stored into the E<sup>2</sup>PROM on the card. Whenever the card is in factory mode, the configuration window will be presented upon power-up automatically.

Upon power-up, the iTV-card is in one of 9 possible states:

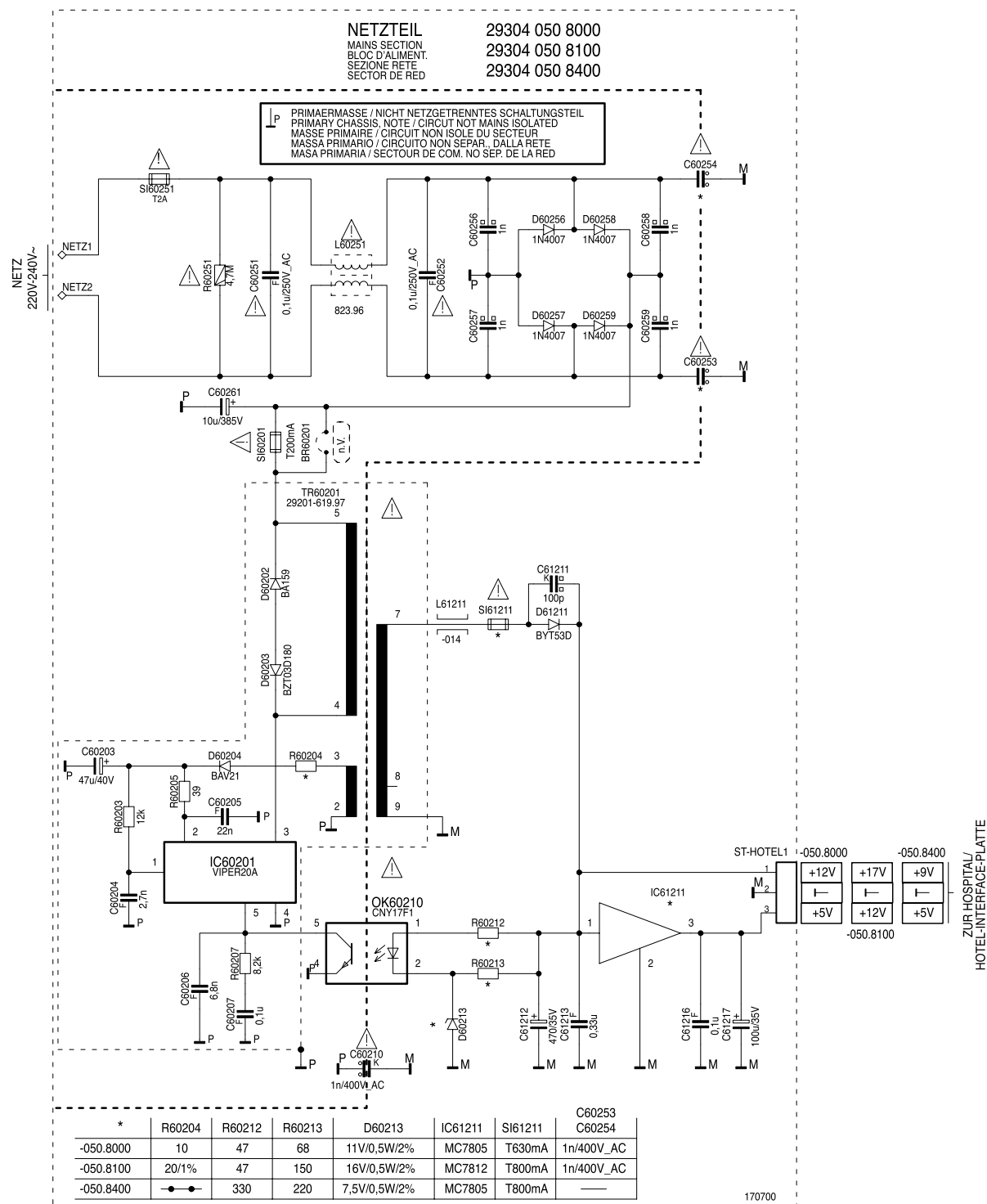
| State        | Description                                            | Exception                              |
|--------------|--------------------------------------------------------|----------------------------------------|
| 0            | Only sensitive to RCU level 0 messages<br>Rest ignored | RcuLevel6+TvInfo<br>All RcuLevel7 keys |
| 1            | Only sensitive to RCU level 1 messages<br>Rest ignored | RcuLevel6+TvInfo<br>All RcuLevel7 keys |
| 2            | Only sensitive to RCU level 2 messages<br>Rest ignored | RcuLevel6+TvInfo<br>All RcuLevel7 keys |
| 3            | Only sensitive to RCU level 3 messages<br>Rest ignored | RcuLevel6+TvInfo<br>All RcuLevel7 keys |
| 4            | Only sensitive to RCU level 4 messages<br>Rest ignored | RcuLevel6+TvInfo<br>All RcuLevel7 keys |
| 5            | Only sensitive to RCU level 5 messages<br>Rest ignored | RcuLevel6+TvInfo<br>All RcuLevel7 keys |
| 6            | Only sensitive to RCU level 6 messages<br>Rest ignored | RcuLevel6+TvInfo<br>All RcuLevel7 keys |
| 7            | Only sensitive to RCU level 7 messages<br>Rest ignored | RcuLevel6+TvInfo<br>All RcuLevel7 keys |
| Factory Mode | All keys passed unaltered to TV                        | RcuLevel6+TvInfo                       |

Kabelverlegung nach VDE / Wiring according to VDE

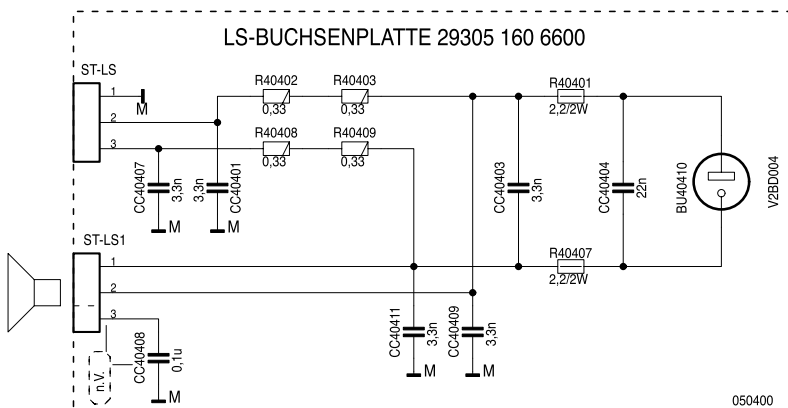
**Achtung!** Nach einer Reparatur auf korrekte Leitungsverlegung mit Kabelbinder achten.  
**Warning!** After a repair always pay attention to a correct wiring using the cable clamps.



## Baustein Netzteil / Module Mains Unit 293040508400

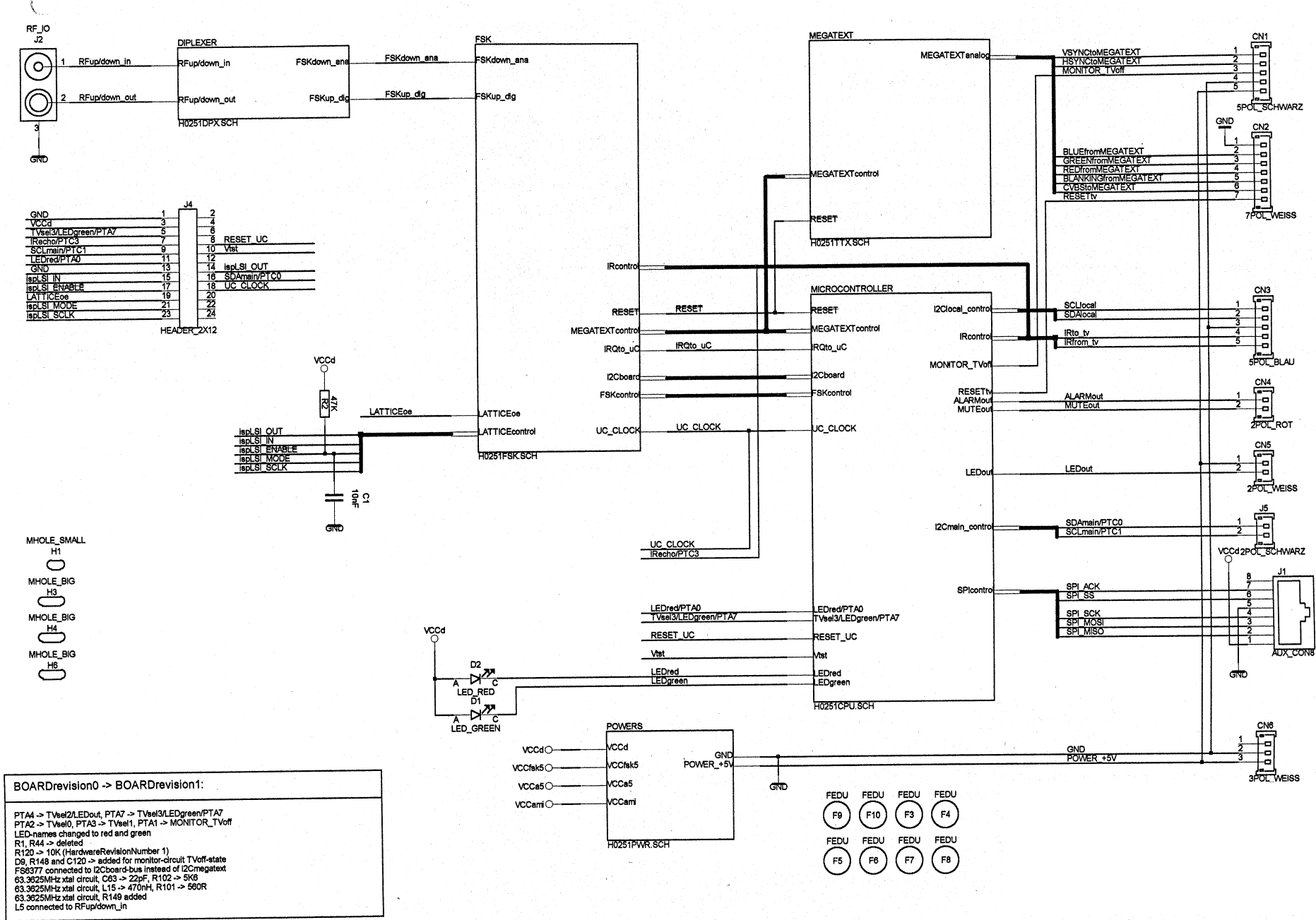


## LS-Buchsenplatte / LS Socket Board 293051606600



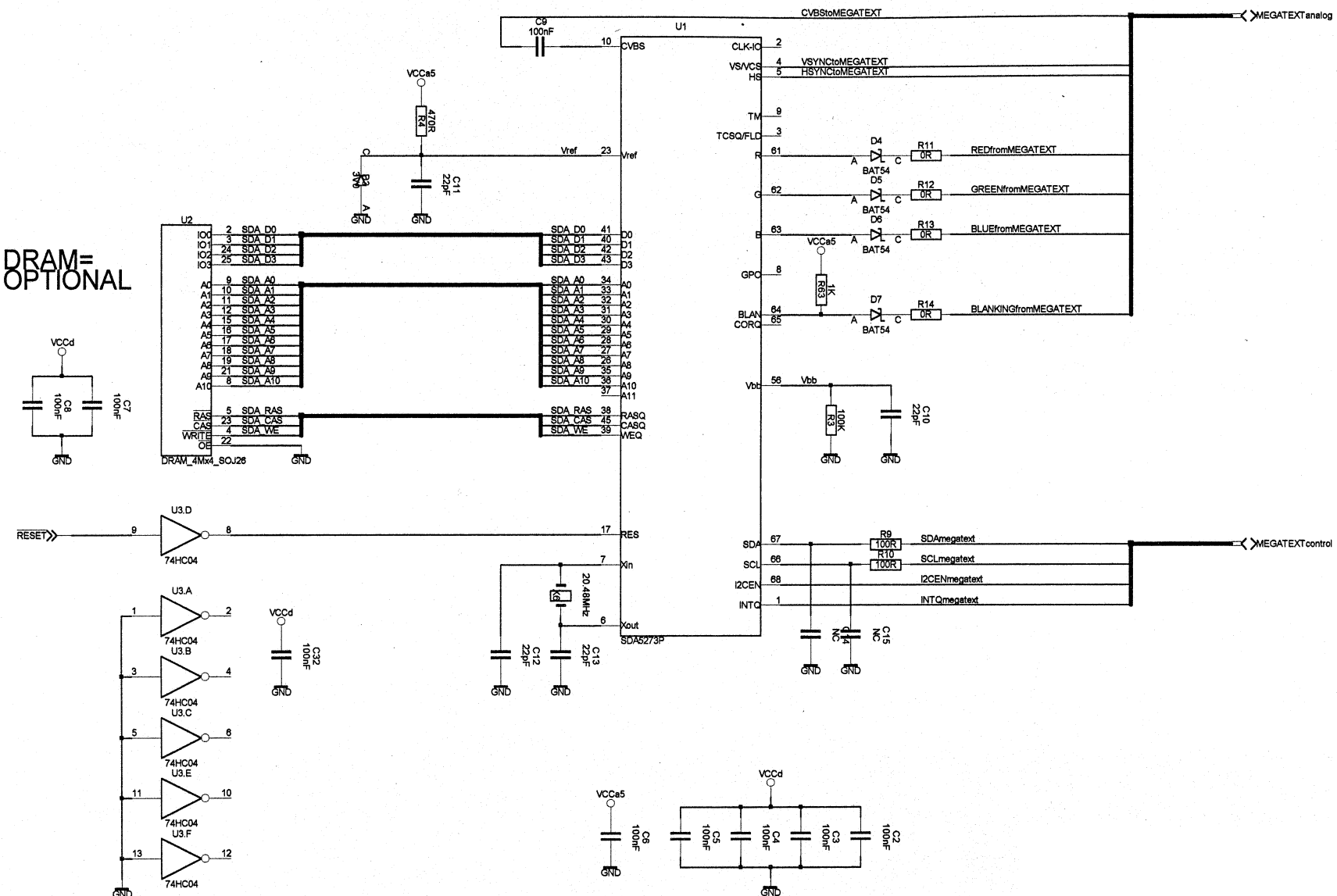
# COM Modul / COM Module 295041082400

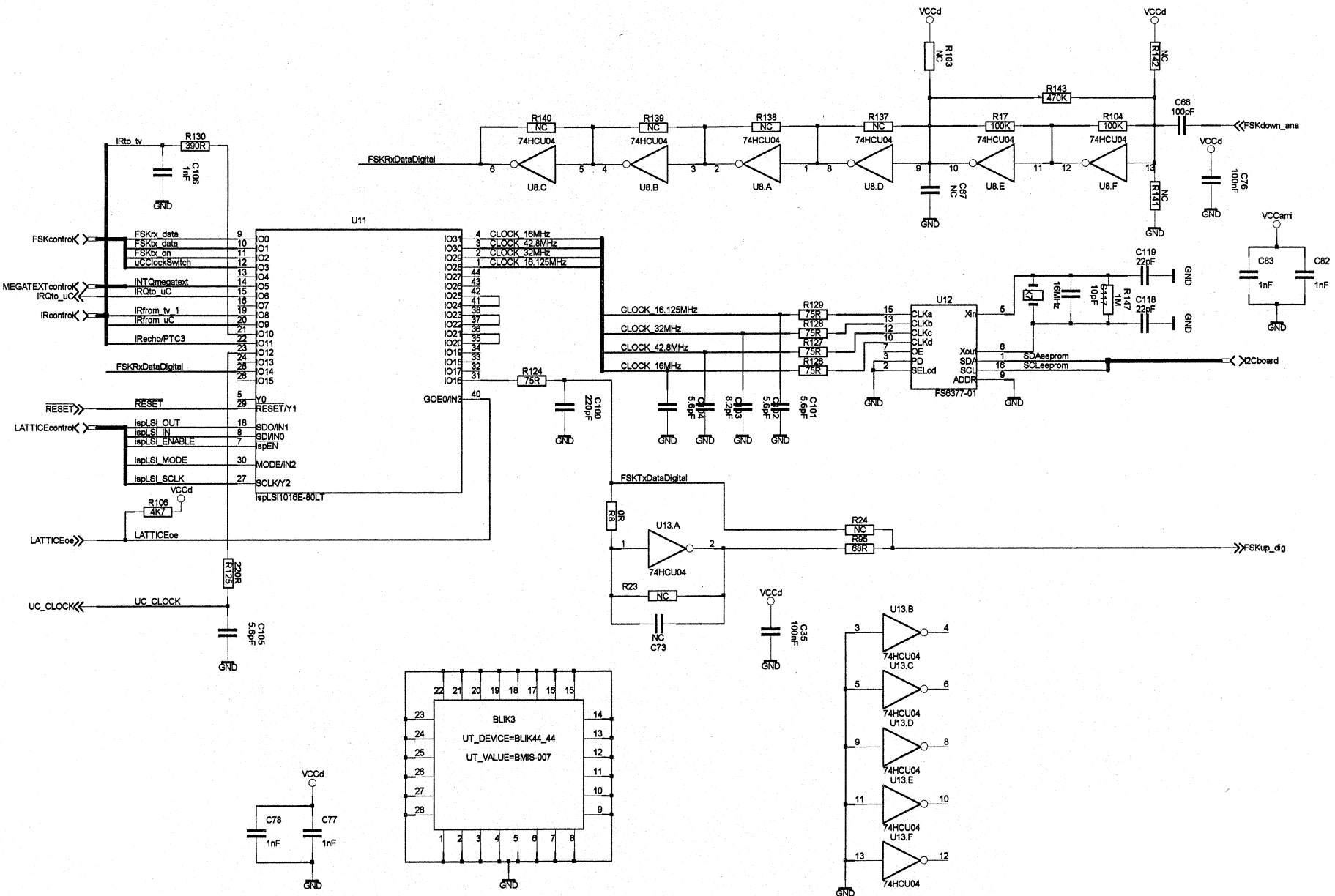
## Blockschaltplan / Block Circuit Diagram



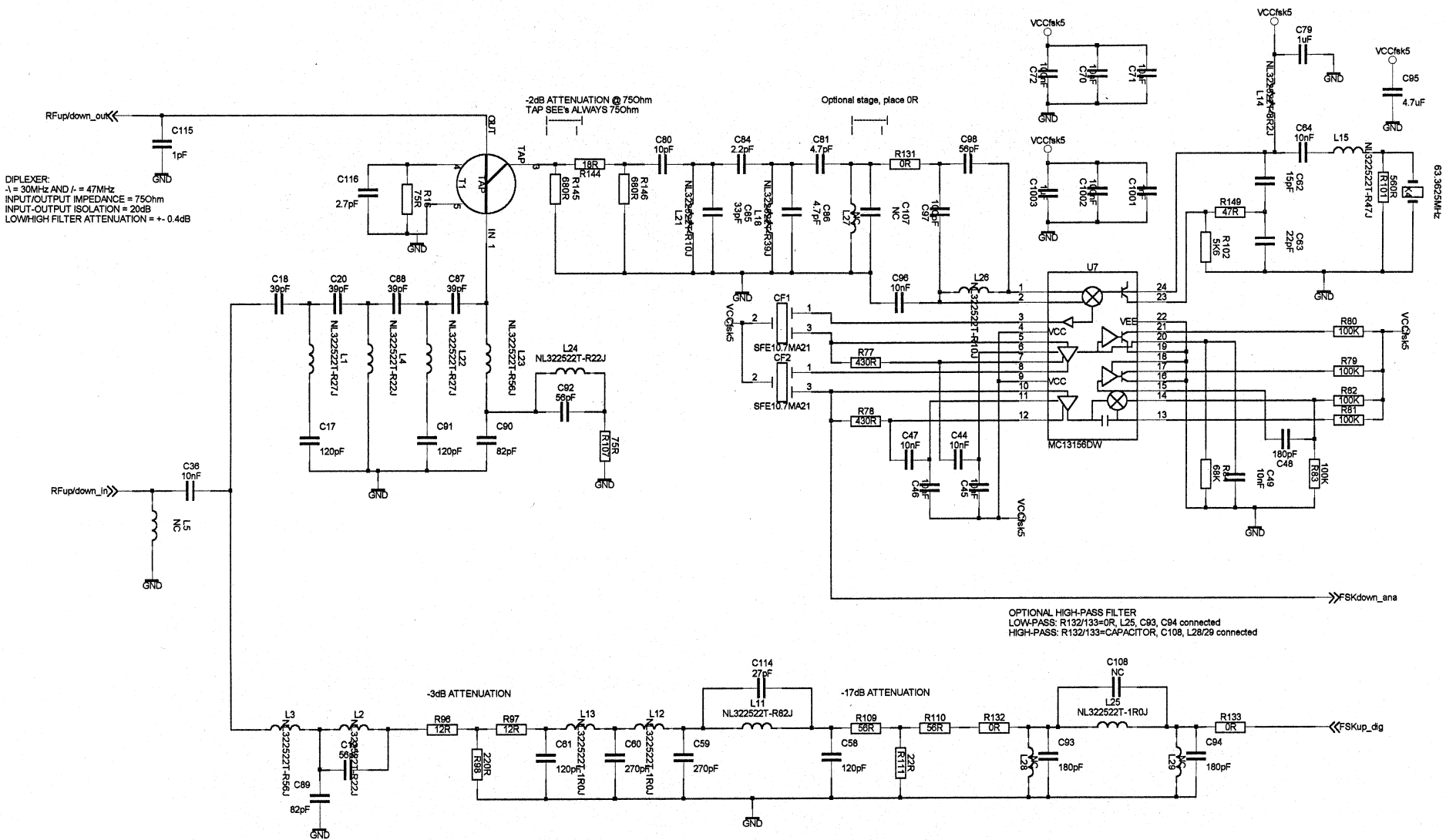
[illegible]

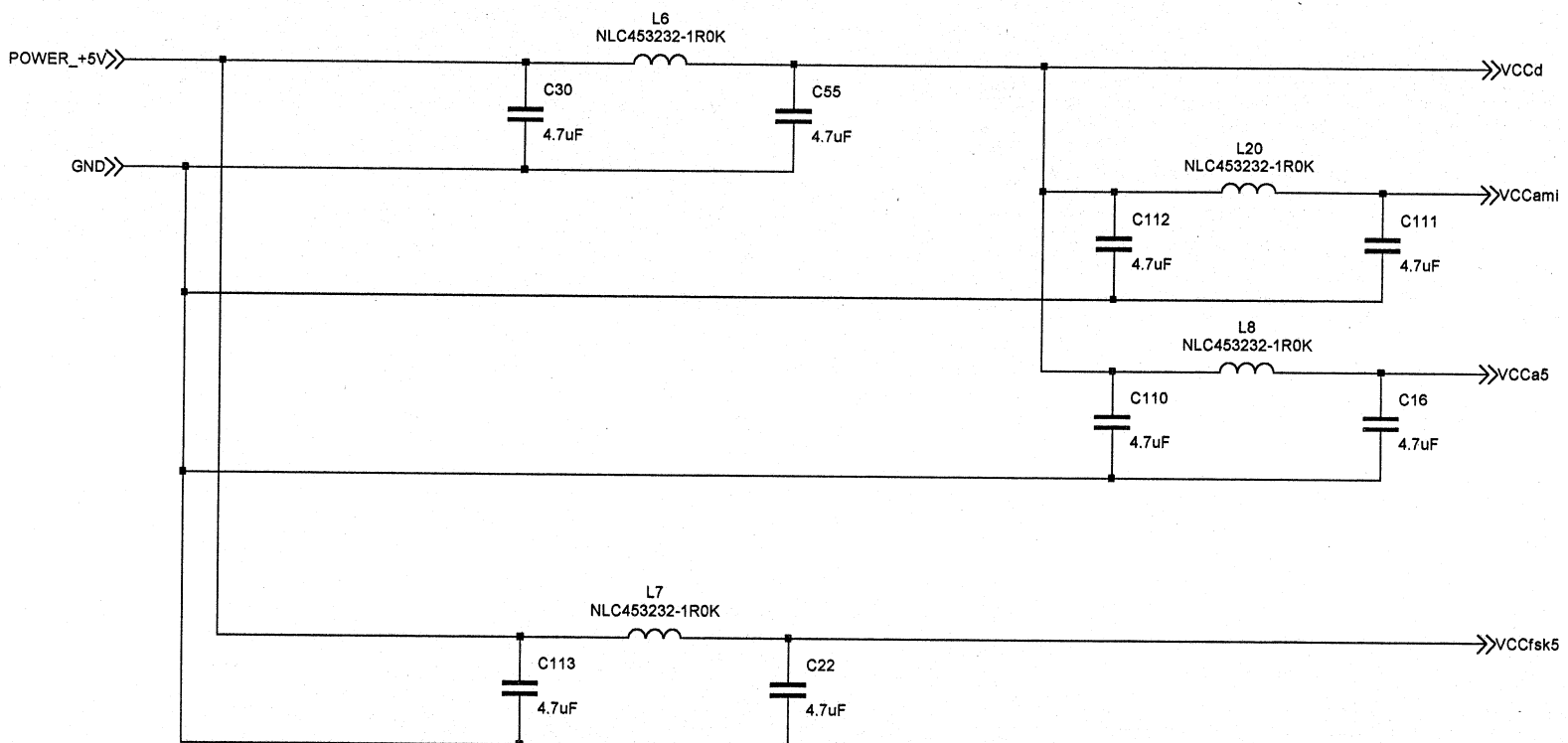
# Mega Text



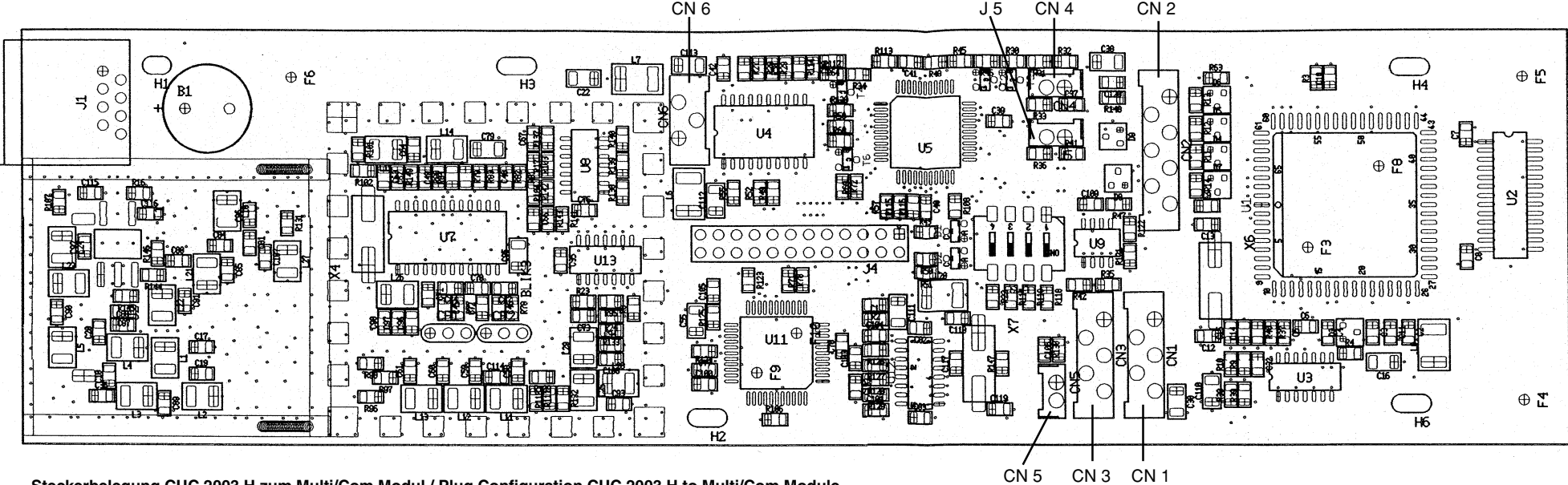


# Diplexer-Schaltung / Diplexer circuit



**Stromversorgung / Power circuit**

Leiterplatte Multi/Com / Multi/Com PCB  
Materialnummer / Part Number 295041082400



Steckerbelegung CUC 2003 H zum Multi/Com Modul / Plug Configuration CUC 2003 H to Multi/Com Module

| Stecker auf<br>Multi/Com<br>Modul<br>Plugs on<br>Multi/Com<br>Module | Farbe<br>Stecker<br><br>Colour of Plug | Signal<br><br>Signal                                                                                               | Stecker Chassis<br><br>Chassis Plug                                                                                                                               | Lage der Stecker im<br>TV Gerät<br><br>Position of Plugs<br>TV Set | Materialnummer<br>der Kabel<br><br>Part Number<br>of Cable |
|----------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------|
| CN 1                                                                 | schwarz / black                        | V Sync<br>H Sync<br>+ M / +14V<br>Masse / Ground<br>+ 5 V / ASIS                                                   | ST-ASIS 1, Pin 1<br>ST-ASIS 1, Pin 2<br>ST-ASIS 1, Pin 3<br>ST-ASIS 1, Pin 4<br>ST-ASIS 1, Pin 5                                                                  | 1. Ergänzung<br>Supplement 1<br>Seite / Page 17                    | 29210 805 2200                                             |
| CN 2                                                                 | weiß / white                           | Masse / Ground<br>B<br>G<br>R<br>RGB-Schaltspannung<br>RGB switching voltage<br>FBAS Text / CCVS text<br>BUS Reset | ST-ASIS 2, Pin 1<br>ST-ASIS 2, Pin 2<br>ST-ASIS 2, Pin 3<br>ST-ASIS 2, Pin 4<br><br>ST-ASIS 2, Pin 5<br>ST-ASIS 2, Pin 6<br>ST-ASIS 2, Pin 7                      | 1. Ergänzung<br>Supplement 1<br>Seite / Page 20                    | 29210 807 0100                                             |
| CN 3                                                                 | blau / blue                            | Clock<br>Data<br>Masse / Ground<br>IR Ausgang / IR out<br>IR Eingang / IR in                                       | ST-ASIS 3, Pin 1<br>ST-ASIS 3, Pin 2<br>ST-ASIS 3, Pin 3<br>ST-ASIS 3, Pin 4<br>ST-ASIS 3, Pin 5                                                                  | 1. Ergänzung<br>Supplement 1<br>Seite / Page 17                    | 29210 805 8200                                             |
| CN 4                                                                 | rot / red                              | NF<br>NF Stumm / NF Mute                                                                                           | ST-ASIS 4, Pin 1<br>ST-ASIS 4, Pin 2                                                                                                                              | 1. Ergänzung<br>Supplement 1<br>Seite / Page 23                    | 29210 802 4200                                             |
| CN 5                                                                 | weiß / white                           |                                                                                                                    | ST-M-LED, Pin 1<br>ST-M-LED, Pin 2                                                                                                                                | 1. Ergänzung<br>Supplement 1<br>Seite / Page 18                    | 29210 802 0200                                             |
| CN 6                                                                 | weiß / white                           | nicht belegt / not used<br>Masse / Ground<br>+ 5V                                                                  | Standby Netzteil Pin 1 / Standby Power Supply Pin 1<br>Standby Netzteil Pin 2 / Standby Power Supply Pin 2<br>Standby Netzteil Pin 3 / Standby Power Supply Pin 3 | 2. Ergänzung<br>Supplement 2<br>Seite / Page 13                    | 29210 803 0200                                             |
| J 5                                                                  | schwarz / black                        | Hotel Reset                                                                                                        | ST Hosp 1, Pin 2                                                                                                                                                  | 1. Ergänzung<br>Supplement 1<br>Seite / Page 17                    | 29210 895 1101                                             |

# Ersatzteilliste Spare Parts List

ERSETZT AUSGABE 5/2000  
SUBSTITUTE EDITION 5/2000

## 1 / 2001

# GRUNDIG

# TV

## T 55-830 MULTI/COM

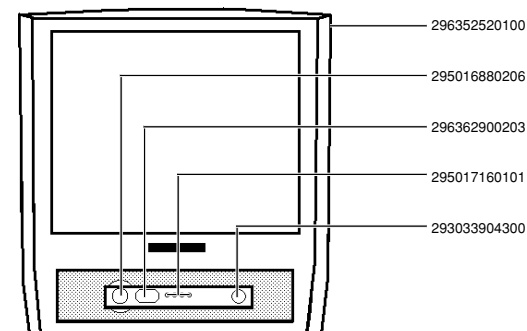
MATERIAL-NR. / PART NO.: 921945587200 BESTELL-NR. / ORDER NO.: GCL5272 AGANA-GRAU/AGANA GREY  
VERSION NR./VERSION NO.: VNM

| POS. NR.<br>POS. NO. | ABB.<br>FIG. | MATERIAL-NR.<br>PART NUMBER | ANZ.<br>QTY. | BEZEICHNUNG<br>D                                | DESCRIPTION<br>GB                                 |
|----------------------|--------------|-----------------------------|--------------|-------------------------------------------------|---------------------------------------------------|
|                      |              | 921945587200                |              | T 55-830 MULTI/COM<br>AGANA-GRAU<br>KEIN E-TEIL | T 55-830 MULTI/COM<br>AGANA GREY<br>NO SPARE PART |
| 0200.000             |              | 296352520100                |              | GEH-VORDERTEIL DRUCK KPL                        | CABINET FRONT PART PRINT CPL                      |
| 0201.000             |              | 191160083300                |              | LAUTSPRECHER                                    | SPEAKER                                           |
| 0216.000             |              | 295017160101                |              | TASTENSATZ PROGRAMM/LAUTSTAERKE                 | KEYS SET PROGRAMME/VOLUME                         |
| 0218.000             |              | 295016880206                |              | NETZTASTENKNOPF                                 | KEY POWER                                         |
| 0219.000             |              | 296284170101                |              | DRUCKFEDER NETZTASTENKNOPF                      | PRESSURE SPRING KEY POWER                         |
| 0230.000             |              | 296362900203                |              | INFRA-FENSTER                                   | INFRA WINDOW                                      |
| 0240.000             |              | 293033904300                |              | KOPFHÖRERBUCHSE 3,5mm M.SCHALTER                | HEADPHONE SOCKET 3,5mm W. SWITCH                  |
| 0300.000             |              | 296362850102                |              | GEH-RUECKTEIL OFB                               | CABINET REAR PART SURFACE TREATED                 |
| 0320.000             |              | 291102176302                |              | TYPENAUFKLEBER VNM                              | TYPE LABEL SELF ADHESIVE VNM                      |
| 0700.000             | △            | 092461287508                |              | ENTMAGNETISIERUNGSSPULE                         | COIL DEGAUSSING                                   |
| 1100.000             | △            | 830002051100                |              | BILDROHR A51 EER131X28 SAMSUNG                  | PICT. TUBE A51 EER131X28 SAMSUNG                  |
| 1100.000             | △            | 830002051300                |              | BILDROHR A51 EER 33X78 SAMSUNG                  | PICT. TUBE A51 EER33X78 SAMSUNG                   |
| 1100.000             | △            | 830002065500                |              | BILDROHR A51 EAL155X01 PHILIPS                  | PICT. TUBE A51 EAL155X01 PHILIPS                  |
| 1100.000             | △            | 830002058300                |              | BILDROHR A51 EFS83X191 VIDEOCOLOR               | PICT. TUBE A51 EFS83X191 VIDEOCOLOR               |
| 1200.000             | △            | 292013600111                |              | ANODENKAPPE M.HOCHSPANNUNGSKABEL                | ANODE CAP W.HIGH VOLTAGE CABLE                    |
| 2100.000             | △            | 829099131600                |              | NETZKABEL KPL MIT ENTSTOERDROSSEL               | POWER CABLE CPL W.INTERFERENCE COIL               |
| 2200.000             |              | 293033532400                |              | KOAXVERBINDUNG                                  | COAX CONNECTION                                   |
| 2300.000             | △            | 293050221900                |              | BILDROHRPLATTE                                  | PICTURE TUBE BOARD                                |
| 2400.000             |              | 296420611900                | X            | TP 800 H FERNBEDIENUNG                          | TP 800 H REMOTE CONTROL                           |
|                      |              | 219459410100                |              | BEDIENUNGSANLEITUNG D/GB                        | OPERATING INSTRUCTION D/GB                        |
|                      |              |                             |              | AUFSTELLER                                      | PUTTING                                           |
|                      |              | 219459410300                |              | BEDIENUNGSANLEITUNG GB/TR                       | OPERATING INSTRUCTION GB/TR                       |
|                      |              |                             |              | AUFSTELLER                                      | PUTTING                                           |
|                      |              | 219459410200                |              | BEDIENUNGSANLEITUNG FR/I                        | OPERATING INSTRUCTION FR/I                        |
|                      |              |                             |              | AUFSTELLER                                      | PUTTING                                           |
|                      |              | 720100240000                |              | SERVICE MANUAL D/GB                             | SERVICE MANUAL D/GB                               |
|                      |              | 720100240100                |              | SERVICE MANUAL D/GB 1.ERGAENZUNG                | SERVICE MANUAL D/GB 1ST SUPPLEMENT                |
|                      |              | 720100240200                |              | SERVICE MANUAL D/GB 2.ERGAENZUNG                | SERVICE MANUAL D/GB 2ND SUPPLEMENT                |
|                      |              | 296560040600                |              | MONTAGEZUBEHOER F.BILDROHR                      | MOUNTING ACCESSORIES F.PICT.TUBE                  |
|                      |              |                             |              | KEIN E-TEIL                                     | NO SPARE PART                                     |
|                      |              | 297040064000                | X            | CHASSIS-FS-MONO PHILIPS-BR                      | CHASSIS TV MONO PHILIPS-PT                        |
|                      |              |                             |              | CUC 2003/INL/MULTI/COM                          | CUC 2003/INL/MULTI/COM                            |
|                      |              |                             |              | KEIN E-TEIL                                     | NO SPARE PART                                     |
|                      |              | 297040065900                | X            | CHASSIS-FS-MONO VIDEOCOLOR-BR                   | CHASSIS TV MONO VIDEOCOLOR-PT                     |
|                      |              |                             |              | CUC 2003/INL/MULTI/COM                          | CUC 2003/INL/MULTI/COM                            |
|                      |              |                             |              | KEIN E-TEIL                                     | NO SPARE PART                                     |
|                      |              | 297040066000                | X            | CHASSIS-FS-MONO SAMSUNG-BR                      | CHASSIS TV MONO SAMSUNG-PT                        |
|                      |              |                             |              | CUC 2003/INL/MULTI/COM                          | CUC 2003/INL/MULTI/COM                            |
|                      |              |                             |              | KEIN E-TEIL                                     | NO SPARE PART                                     |

X = SIEHE GESONDERTE E-LISTE

X = SEE SEPARATE PARTS LIST

## T 55-830 MULTI/COM



POS. NR. MATERIAL-NR. BEZEICHNUNG  
POS. NO. PART NUMBER DESCRIPTION

POS. NR. MATERIAL-NR. BEZEICHNUNG  
POS. NO. PART NUMBER DESCRIPTION

Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Mat.-Nummer 720108000000, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!



The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 720108000000, as well as the respective national deviations.

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION

Ersatzteilliste  
Spare Parts List

4 / 2000

CHASSIS-FS-MONO CUC 2003 INL/MULTI/COM  
CHASSIS TV MONO CUC 2003 INL/MULTI/COM

MATERIAL-NR. / PART NO.: 29704 006 4000

| POS. NR.<br>POS. NO. | ABB.<br>FIG. | MATERIAL-NR.<br>PART NUMBER | ANZ.<br>QTY. | BEZEICHNUNG<br>(D)                                       | DESCRIPTION<br>(GB)                                        |
|----------------------|--------------|-----------------------------|--------------|----------------------------------------------------------|------------------------------------------------------------|
|                      |              | 29704 006 4000              |              | CHASSIS-FS-MONO<br>CUC 2003 INL/MULTI/COM<br>KEIN E-TEIL | CHASSIS TV MONO<br>CUC 2003 INL/MULTI/COM<br>NO SPARE PART |
| 0100.000             |              | 29504 301 0100              |              | TUNER-GLOBAL (PLL)                                       | TUNER-GLOBAL (PLL)                                         |
| 0209.000             |              | 29700 643 2501              |              | ABDECKUNG MULTI/COM                                      | COVER MULTI/COM                                            |
| 0247.000             |              | 29303 119 0602              |              | EURO-AV BUCHSENLEISTE 21-POL                             | EURO-AV SOCKET STRIP 21 P                                  |
| 0300.000             |              | 29504 108 2400              |              | COM-MODUL<br>(COMBINER/MODEM/MEGA.TEXT)                  | COM-MODULE<br>(COMBINER/MODEM/MEGA.TEXT)                   |
| 0400.000             |              | 29304 050 8400              |              | NETZTEIL 5V/0,4A GRUNDIG                                 | POWER SUPPLY 5V/0.4A GRUNDIG                               |
| 0710.000             |              | 29305 129 0100              | X            | TON FILTERPLATTE                                         | SOUND FILTER BOARD                                         |
| 0950.000             |              | 29305 160 6600              |              | LS-BUCHSENPLATTE<br>KEIN E-TEIL                          | SPEAKER SOCKET BOARD<br>NO SPARE PART                      |
| 0955.000             |              | 09622 435 0200              |              | LAUTSPRECHERBUCHSE SCHWARZ R                             | SPEAKER SOCKET BLACK R                                     |
| 1000.000             | △            | 09621 113 0206              | 4            | SICHERUNGSHALTER SI60251/62501                           | FUSE HOLDER SI60251/62501                                  |
| 1311.000             |              | 29703 357 1100              |              | TASTSCHALTER PROGRAMM+                                   | KEY SWITCH PROGRAMME+                                      |
| 1312.000             |              | 29703 357 1100              |              | TASTSCHALTER PROGRAMM-                                   | KEY SWITCH PROGRAMME-                                      |
| 1313.000             |              | 29703 357 1100              |              | TASTSCHALTER LAUTSTÄRKE+                                 | KEY SWITCH VOLUME+                                         |
| 1314.000             |              | 29703 357 1100              |              | TASTSCHALTER LAUTSTÄRKE-                                 | KEY SWITCH VOLUME-                                         |
| 1383.000             |              | 29303 390 4300              |              | KOPFHOERERBUCHSE 3,5 M.SCHALTER                          | HEADPHONE SOCKET 3.5 WITH SWITCH                           |
| 2000.000             | △            | 29703 291 2105              |              | NETZSCHALTER O.WISCHER                                   | POWER SWITCH W/O WIPER                                     |
| WW.                  | △            | 29703 291 3100              |              | NETZSCHALTER O.WISCHER 4A                                | POWER SWITCH W/O WIPER 4A                                  |
| 2200.000             | △            | 29303 399 5100              |              | NETZ EINBAUGERAETESTECKER                                | APPLIANCE COUPLER W.CABLE                                  |
| 2410.000             |              | 29303 153 0200              |              | MONTAGECLIP IC40050                                      | MOUNTING CLIP IC40050                                      |
| 2410.000             |              | 29303 153 0208              | 2            | MONTAGECLIP IC50010/T53001                               | MOUNTING CLIP IC50010/T53001                               |
| 2430.000             |              | 29303 153 1208              |              | MONTAGECLIP IC61211                                      | MOUNTING CLIP IC61211                                      |
| 2440.000             |              | 29303 153 1600              |              | MONTAGECLIP T60020                                       | MOUNTING CLIP T60020                                       |
| 2440.000             |              | 29303 153 1605              | 2            | MONTAGECLIP IC61040/61060                                | MOUNTING CLIP IC61040/61060                                |
| 2470.000             |              | 29303 156 2000              | 3            | FOLIE WAERMELEITEND<br>IC61040/61060/T60020              | FOIL HEAT CONDUCTING<br>IC61040/61060/T60020               |

X = SIEHE GESONDERTE E-LISTE  
WW. = WAHLWEISEX = SEE SEPARATE PARTS LIST  
WW. = OPTIONAL

| POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION    | POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION |
|----------------------|-----------------------------|-------------------------------|----------------------|-----------------------------|----------------------------|
| C 40057              | 84151 661 0600              | ELKO 1000UF 20% 16V           | C 60254              | △ 86600 982 3400            | SI-KERKO B-SS 1000PF 20%   |
| C 53002              | 85159 111 1400              | FOKO KF #35 9000PF 3,5% 1500V | C 60261              | 84520 971 3500              | ELKO #35 10UF 385V         |
| C 54011              | 86500 670 4600              | KERKO HV C 100PF 20% 1KV      | C 61036              | 86500 670 4600              | KERKO HV C 100PF 20% 1KV   |
| C 54012              | 84529 961 8700              | ELKO 1000UF 20% 35V           | C 61056              | 86500 670 4600              | KERKO HV C 100PF 20% 1KV   |
| C 54031              | 86500 670 4600              | KERKO HV C 100PF 20% 1KV      | C 61211              | 86500 670 4600              | KERKO HV C 100PF 20% 1KV   |
| C 60001              | 86500 811 2500              | KERKO HV C 1000PF 20% 1KV     | C 62021              | 86600 982 3400              | SI-KERKO B-SS 1000PF 20%   |
| C 60009              | 85159 116 0500              | FOKO FKP1 220PF 5% 2000V      | C 62022              | 86600 982 3400              | SI-KERKO B-SS 1000PF 20%   |
| C 60023              | 86500 811 2500              | KERKO HV C 1000PF 20% 1KV     | C 62048              | △ 86600 982 3400            | SI-KERKO B-SS 1000PF 20%   |
| C 60024              | 86500 811 2500              | KERKO HV C 1000PF 20% 1KV     | C 62501              | △ 85117 930 3300            | FOKO MP3 0,22UF 20% 250VW  |
| C 60026              | 86500 811 2500              | KERKO HV C 1000PF 20% 1KV     |                      |                             |                            |
| C 60027              | 86500 811 2500              | KERKO HV C 1000PF 20% 1KV     | CD 32201             | 83094 015 9200              | SMD DIODE BA592/ BA78      |
| C 60210              | △ 86600 982 3400            | SI-KERKO B-SS 1000PF 20%      | CD 32411             | 83094 015 9200              | SMD DIODE BA592/ BA78      |
| C 60251              | △ 85117 930 1800            | MP3 0,1UF 20% 250VW           | CD 32421             | 83094 015 9200              | SMD DIODE BA592/ BA78      |
| C 60252              | △ 85117 930 1800            | MP3 0,1UF 20% 250VW           | CD 32460             | 83094 015 9200              | SMD DIODE BA592/ BA78      |
| C 60253              | △ 86600 982 3400            | SI-KERKO B-SS 1000PF 20%      | CD 32465             | 83094 015 9200              | SMD DIODE BA592/ BA78      |

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION

| POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION | POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION |
|----------------------|-----------------------------|----------------------------|----------------------|-----------------------------|----------------------------|
| CD 32475             | 83094 015 9200              | SMD DIODE BA592/ BA78      | D 60006              | 83095 168 5400              | DIODE BYT 54 M             |
| CIC32410             | 83058 140 9400              | SMD IC MC14094BD           | D 60007              | 83095 168 5400              | DIODE BYT 54 M             |
| CT 32105             | 83010 058 1700              | SMD-TRANS.BC 817-25        | D 60012              | 83092 000 2100              | DIODE BAV21                |
| CT 32111             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 60022              | 83092 151 2700              | DIODE 1 N 4007             |
| CT 32119             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 60024              | 83092 151 2700              | DIODE 1 N 4007             |
| CT 32122             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | D 60026              | 83092 151 2700              | DIODE 1 N 4007             |
| CT 32123             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 60027              | 83092 151 2700              | DIODE 1 N 4007             |
| CT 32124             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | D 60037              | 83092 000 2100              | DIODE BAV21                |
| CT 32132             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 60202              | 83092 011 5900              | DIODE BA159                |
| CT 32201             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 60203              | 83096 631 8000              | Z-DIODE BZT03D180          |
| CT 32205             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 60204              | 83092 000 2100              | DIODE BAV21                |
| CT 32435             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 60213              | 83097 200 7400              | Z DIODE 7,5 B 0,5W         |
| CT 32440             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | D 60256              | 83092 151 2700              | DIODE 1 N 4007             |
| CT 32455             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 60257              | 83092 151 2700              | DIODE 1 N 4007             |
| CT 32460             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 60258              | 83092 151 2700              | DIODE 1 N 4007             |
| CT 32465             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 60259              | 83092 151 2700              | DIODE 1 N 4007             |
| CT 32470             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 61016              | △ 83095 171 7800            | DIODE BYW178/ FUF54        |
| CT 32475             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 61036              | 83095 171 0800              | DIODE BYT108-400           |
| CT 32480             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 61056              | △ 83095 171 7200            | DIODE BYW172D/ FUF5        |
| CT 32501             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 61211              | 83095 167 5500              | DIODE BYT 53 D             |
| CT 34031             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | D 81054              | 83092 150 4500              | DIODE 1N4148               |
| CT 40065             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | D 81123              | 83092 150 4500              | DIODE 1N4148               |
| CT 43244             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | D 85001              | 83099 661 0000              | LE-DIODE TLDR4100          |
| CT 43246             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | F 32101              | 81411 124 0500              | FILTER 7X7 405 SIGN 112405 |
| CT 46004             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | F 32109              | 86027 550 4200              | CER.TRAP 42                |
| CT 46009             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | F 32121              | 81411 113 6000              | FILTER 7X7 360 SIGN 111360 |
| CT 52260             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | F 32410              | 81405 313 5100              | SPULE 7X7 351 FARBE 718    |
| CT 54020             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | F 32412              | 83190 034 5100              | OFWFILE K3451K             |
| CT 57005             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | F 32420              | 83190 094 6000              | OFW L 9460                 |
| CT 57020             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | F 32430              | 83190 095 5400              | OFWFILE K9554              |
| CT 57021             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | F 32493              | 81405 353 5200              | SPULE 7X7 #352 SIGN535352  |
| CT 57112             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   |                      |                             | 35MHZ 0,8UH                |
| CT 57113             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | IC 32490             | 83053 344 8800              | IC U4488                   |
| CT 57124             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | IC 32520             | 83050 050 5300              | IC HEF4053BP               |
| CT 61043             | 83010 048 4800              | SMD TRANS BC848B/ BC847B   | IC 34015             | 83053 388 4100              | IC TDA8842N251             |
| CT 81058             | 83010 058 0800              | SMD TRANS BC808-25/BC807-  | IC 40050             | 83053 372 6600              | IC TDA7266M MULTI1         |
| CT 81065             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | IC 50010             | 83053 383 5600              | IC TDA8356N6 (TDA8356N5)   |
| CT 81070             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | IC 60010             | 83053 546 0500              | IC TDA4605/3               |
| CT 81075             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | IC 60201             | 83055 800 2000              | IC VIPER20A/022Y           |
| CT 81120             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | IC 61040             | 83052 043 1700              | IC LM317T                  |
| CT 81125             | 83010 038 5800              | SMD TRANS BC858B/ BC857B   | IC 61060             | 83052 057 0300              | IC MC7805CT                |
| D 40012              | 83092 150 4500              | DIODE 1N4148               | IC 61211             | 83052 057 0300              | IC MC7805CT                |
| D 40060              | 83092 150 4500              | DIODE 1N4148               | IC 80000             | 83052 100 6500              | IC MC33164P-5RP/ TS831-51Z |
| D 40061              | 83092 150 4500              | DIODE 1N4148               | IC 80010             | 83053 675 3000              | IC TFMS5300 STEHEND        |
| D 40062              | 83092 150 4500              | DIODE 1N4148               | IC 81050             | 83051 551 9100              | IC SDA5257-2-G411          |
| D 40063              | 83097 200 7100              | Z DIODE 7,5 C 0,5W         | IC 81050             | 29798 201 0100              | IC SDA545X OTP PROG.KPL    |
| D 40065              | 83092 150 4500              | DIODE 1N4148               | IC 82005             | 83051 240 0800              | IC M24C08B1/ M24C08-BN6    |
| D 43055              | 83092 150 4500              | DIODE 1N4148               | L 31043              | 81405 264 4000              | DR ST 0411-GRP 8,2UH 10%   |
| D 43056              | 83092 150 4500              | DIODE 1N4148               | L 32108              | 81405 264 5800              | DR 0309 2,7UH 5% ST        |
| D 43071              | 83092 150 4500              | DIODE 1N4148               | L 32109              | 81405 264 4400              | DR ST 0309-GRP 10UH 5%     |
| D 43072              | 83092 150 4500              | DIODE 1N4148               | L 32201              | 81405 269 4400              | DR N-GR 4,7MH 5%           |
| D 43073              | 83092 150 4500              | DIODE 1N4148               | L 41011              | 81049 820 1400              | DAEMPF-PERLE 433003038102  |
| D 50022              | 83092 000 2100              | DIODE BAV21                |                      |                             | DAMPING BEAD               |
| D 50023              | 83092 150 2000              | DIODE 1 N 4004             | L 53003              | 81049 820 5600              | FERRITPERLE HF70 BTL 3,5X  |
| D 50026              | 83097 205 1000              | Z DIODE 51 C 0,5W          |                      |                             | FERRITE BEAD               |
| D 50027              | 83091 985 4200              | DIODE BAT42/43/BAT85/86 A  | L 53011              | 81405 052 4900              | DR A AX-GA 10UH 10%        |
| D 52001              | 83092 150 4500              | DIODE 1N4148               | L 53021              | 29203 114 9500              | LINEARITÄTSREGLER          |
| D 53003              | 83092 010 0500              | DIODE BA157                |                      |                             | LINEARITY-CONTROL          |
| D 54001              | △ 83092 042 6800            | DIODE BYV16/ BYV96E        | L 53074              | 09246 838 5100              | ZB-SPULE / COIL            |
| D 54011              | 83092 010 0500              | DIODE BA157                | L 60006              | 81049 820 5700              | FERRITPERLE 3,6UH 5720500  |
| D 54021              | 83097 200 3600              | Z DIODE 3,6 C 0,5W         |                      |                             | FERRITE BEAD               |
| D 54022              | 83097 071 3500              | Z DIODE 33 B 0,5W          | L 60251              | △ 29500 823 9600            | FUNKENTSTÖERDROSSEL        |
| D 54031              | 83092 010 0500              | DIODE BA157                |                      |                             | INTERFERENCE CHOKE         |
| D 57011              | 83092 150 4500              | DIODE 1N4148               | L 61038              | 81049 820 0300              | FERRITPERLE BL02RN2-R62    |
| D 57013              | 83092 150 4500              | DIODE 1N4148               |                      |                             | FERRITE BEAD               |
| D 57023              | 83092 150 4500              | DIODE 1N4148               | L 61211              | 81049 820 1400              | DAEMPF-PERLE 433003038102  |
| D 57122              | 83092 150 4500              | DIODE 1N4148               |                      |                             | DAMPING BEAD               |

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION

| POS. NR. | MATERIAL-NR. | BEZEICHNUNG |
|----------|--------------|-------------|
| POS. NO. | PART NUMBER  | DESCRIPTION |

|         |                  |                                           |
|---------|------------------|-------------------------------------------|
| L 62501 | △ 29500 826 9700 | FUNKENTSTOERDROSSEL<br>INTERFERENCE CHOKE |
| L 81061 | 81049 820 5100   | FERRITPERLE HF55 BTL 3,5X<br>FERRITE BEAD |

|          |                  |                                   |
|----------|------------------|-----------------------------------|
| OK 60210 | △ 83060 000 1200 | OPTOKOPLER CNY17F1<br>OPTOCOUPLER |
|----------|------------------|-----------------------------------|

|         |                |                                |
|---------|----------------|--------------------------------|
| Q 34043 | 83821 360 0400 | QUARZ #136 2A 4,433619MHZ 20PF |
| Q 80001 | 83822 460 9600 | QUARZ 6,0 MHZ Q 270/2A         |

|         |                  |                                |
|---------|------------------|--------------------------------|
| R 40053 | △ 87011 190 0900 | KSW SI B 2,2 OHM 5%            |
| R 50023 | △ 87003 290 3700 | KSW NB 0207 33 OHM 5%          |
| R 50046 | △ 87004 292 0600 | KSW NB 0207 1,6 OHM 2%         |
| R 50047 | △ 87004 292 0700 | KSW NB 0207 1,8 OHM 2%         |
| R 52004 | △ 87055 210 5300 | MOW 0411 150 OHM 5%            |
| R 53002 | △ 87004 290 9700 | KSW NB 0207 10 KOHM 5%         |
| R 53011 | △ 87053 212 2100 | MOW 0411 6,8 OHM 5%            |
| R 53016 | △ 87301 894 2500 | DRW 9 10 OHM 10% 214-3         |
| R 53021 | △ 87055 210 7100 | MOW 0411 820 OHM 5%            |
| R 53033 | △ 87053 210 0400 | MOW 0411 1,5 OHM 5%            |
| R 53074 | △ 87053 690 7100 | MOW 0617 820 OHM 5%            |
| R 54001 | △ 87053 290 2500 | MOW 0411 10 OHM 5%             |
| R 54006 | △ 87350 032 0100 | DRW 0,75W 1 OHM 10%            |
| R 54031 | △ 87003 290 2300 | KSW NB 0207 8,2 OHM 5%         |
| R 60001 | 87650 443 2500   | MSW 0414 150 KOHM 2%           |
| R 60002 | 87650 441 4100   | MSW 0411 680 KOHM 5%           |
| R 60003 | 87650 441 4100   | MSW 0411 680 KOHM 5%           |
| R 60007 | 87650 443 2100   | MSW 0414 100 KOHM 2%           |
| R 60008 | △ 87055 611 0500 | MOW 0617 22 KOHM 5%            |
| R 60009 | △ 87055 611 0500 | MOW 0617 22 KOHM 5%            |
| R 60016 | △ 87055 610 4300 | MOW 0617 56 OHM 5%             |
| R 60021 | 83110 050 1700   | NTC 4,7 OHM 30% S237/S234      |
| R 60029 | △ 87055 611 1700 | MOW 0617 68 KOHM 5%            |
| R 60037 | 87900 500 3700   | ESTR.SK10-A 1,5 KOHM LIN/VARR. |
| R 60251 | △ 87650 491 6100 | MSW SI 0414 4,7 MOHM VDE       |
| R 61018 | △ 87001 471 2900 | KSW 0411 220 KOHM 5%           |
| R 62049 | △ 87650 491 6100 | MSW SI 0414 4,7 MOHM VDE       |
| R 62505 | △ 83112 000 1600 | PTC DUO T2S1-A80-A10           |

|          |                  |                      |
|----------|------------------|----------------------|
| SI 52001 | △ 83156 090 2600 | SI LOET T160MA 250V  |
| SI 60201 | △ 83156 100 2600 | LOET-SI-GR 200 MA/T  |
| SI 60251 | △ 83156 200 0300 | SI 5X20 T2A L 250V   |
| SI 61211 | △ 83156 162 0500 | SI LOET T800MA 250V  |
| SI 62501 | △ 83156 170 0600 | SI 5X20 T2,5A L 250V |

|         |                |                       |
|---------|----------------|-----------------------|
| T 00665 | 83028 050 4000 | TRANS.IRF BC 40       |
| T 52001 | 83032 856 3700 | TRANS.BC 637          |
| T 53001 | 83029 000 2000 | TRANS S2055N/ BU508DF |

|          |                  |                                                          |
|----------|------------------|----------------------------------------------------------|
| TR 52001 | 09246 868 0400   | TRAFO TREIBER<br>DRIVER TRANSFORMATOR                    |
| TR 53010 | △ 29221 031 6800 | TRAFO DIODEN-SPLIT KPL (90)<br>DIODE SPLIT TRANSFORMATOR |
| TR 60201 | △ 29201 619 9700 | SPERRWANDLERTRAFO KPL                                    |
| TR 61000 | △ 29201 521 9700 | SPERRWANDLERTRAFO<br>B.O.-TYPE CONVERTER<br>TRANSFORMER  |

Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Mat.-Nummer 72010 800 0000, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!



The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 72010 800 0000, as well as the respective national deviations.

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION

| POS. NR. | MATERIAL-NR. | BEZEICHNUNG |
|----------|--------------|-------------|
| POS. NO. | PART NUMBER  | DESCRIPTION |

## Ersatzteilliste Spare Parts List

### 1 / 2001

## CHASSIS-FS-MONO CUC 2003/INL MULTI/COM CHASSIS TV MONO CUC 2003/INL MULTI/COM

MATERIAL-NR. / PART NO.: 297040065900

| POS. NR. | ABB. | MATERIAL-NR. | ANZ. | BEZEICHNUNG                                              | DESCRIPTION                                                |
|----------|------|--------------|------|----------------------------------------------------------|------------------------------------------------------------|
| POS. NO. | FIG. | PART NUMBER  | QTY. |                                                          |                                                            |
|          |      | 297040065900 |      | CHASSIS-FS-MONO<br>CUC 2003/INL/MULTI/COM<br>KEIN E-TEIL | CHASSIS TV MONO<br>CUC 2003/INL/MULTI/COM<br>NO SPARE PART |
| 0100.000 |      | 295043010100 |      | TUNER-GLOBAL (PLL)                                       | TUNER-GLOBAL (PLL)                                         |
| 0206.000 |      | 297006437500 |      | ABDECKUNG BUCHSEN MONTIERT KPL                           | COVER SOCKETS MOUNTED CPL                                  |
| 0216.000 |      | 297033571100 |      | TASTSCHALTER PROGRAMM +                                  | KEY SWITCH PROGRAMME +                                     |
| 0216.000 |      | 297033571100 |      | TASTSCHALTER PROGRAMM -                                  | KEY SWITCH PROGRAMME -                                     |
| 0216.000 |      | 297033571100 |      | TASTSCHALTER LAUTSTAERKE +                               | KEY SWITCH VOLUME +                                        |
| 0216.000 |      | 297033571100 |      | TASTSCHALTER LAUTSTAERKE -                               | KEY SWITCH VOLUME -                                        |
| 0240.000 |      | 293033904300 |      | KOPFHÖRERBUCHSE 3,5mm M.SCHALTER                         | HEADPHONE SOCKET 3,5mm WITH<br>SWITCH                      |
| 0247.000 |      | 293031190602 |      | EURO-AV BUCHSENLEISTE 21-POL SW                          | EURO-AV SOCKET STRIP 21 PIN BLACK                          |
| 0300.000 |      | 293051290100 | X    | TON FILTERPLATTE                                         | SOUND FILTER BOARD                                         |
| 0400.000 | △    | 293040508400 |      | NETZTEIL 5V/0,4A                                         | POWER SUPPLY 5V/0.4A                                       |
| 0500.000 |      | 295041082400 |      | COM-MODUL KPL                                            | COM-MODULE CPL                                             |
| 0910.000 | △    | 292107030100 |      | FOKUSLEITUNG                                             | FOCUSING CABLE                                             |
| 1000.000 |      | 096211130206 | 4    | SICHERUNGSHALTER SI60251/62501                           | FUSE HOLDER SI60251/62501                                  |
| 2000.000 | △    | 297032912105 |      | NETZSCHALTER O.WISCHER                                   | POWER SWITCH W/O WIPER                                     |
| WW.      | △    | 297032913100 |      | NETZSCHALTER O.WISCHER 4A                                | POWER SWITCH W/O WIPER 4A                                  |
| 2200.000 | △    | 293033995100 |      | NETZ EINBAUGERAETESTECKER                                | APPLIANCE COUPLER                                          |
| 2410.000 |      | 293031530200 |      | MONTAGECLIP IC40050                                      | MOUNTING CLIP IC40050                                      |
| 2415.000 |      | 293031530208 | 2    | MONTAGECLIP T53001/IC50010                               | MOUNTING CLIP T53001/IC50010                               |
| 2430.000 |      | 293031531208 | 3    | MONTAGECLIP IC61040/61060/61211                          | MOUNTING CLIP IC61040/61060/61211                          |
| 2440.000 |      | 293031531600 |      | MONTAGECLIP T60006                                       | MOUNTING CLIP T60006                                       |
| 2470.000 |      | 293031562000 | 4    | FOLIE WAERMELEITEND IC61040/<br>61060/61211/T60006       | FOIL HEAT CONDUCTING IC61040/<br>61060/61211/T60006        |
|          |      |              |      | X = SIEHE GSONDERTE E-LISTE<br>WW. = WAHLWEISE           | X = SEE SEPARATE PARTS LIST<br>WW. = OPTIONAL              |

| POS. NR. | MATERIAL-NR. | BEZEICHNUNG |
|----------|--------------|-------------|
| POS. NO. | PART NUMBER  | DESCRIPTION |

|         |                |                               |
|---------|----------------|-------------------------------|
| C 40057 | 841516610600   | ELKO 1000UF 20% 16V           |
| C 53002 | 851591111400   | FOKO KF #35 9000PF 3,5% 1500V |
| C 54011 | 865006704600   | KERKO HV C 100PF 20% 1KV      |
| C 54012 | 845299618700   | ELKO 1000UF 20% 35V           |
| C 54031 | 865006704600   | KERKO HV C 100PF 20% 1KV      |
| C 60001 | 865008112500   | KERKO HV C 1000PF 20% 1KV     |
| C 60009 | 851591103800   | FOKO FKP1 100PF 10% 1600V     |
| C 60023 | 865008112500   | KERKO HV C 1000PF 20% 1KV     |
| C 60024 | 865008112500   | KERKO HV C 1000PF 20% 1KV     |
| C 60026 | 865008112500   | KERKO HV C 1000PF 20% 1KV     |
| C 60027 | 865008112500   | KERKO HV C 1000PF 20% 1KV     |
| C 60210 | △ 866009823400 | KERKO SI 1000PF 20% 400V      |
| C 60251 | △ 851179301800 | MP3 0,1UF 20% 250V            |
| C 60252 | △ 851179301800 | MP3 0,1UF 20% 250V            |
| C 60256 | 865008112500   | KERKO HV C 1000PF 20% 1KV     |
| C 60257 | 865008112500   | KERKO HV C 1000PF 20% 1KV     |
| C 60258 | 865008112500   | KERKO HV C 1000PF 20% 1KV     |
| C 60259 | 865008112500   | KERKO HV C 1000PF 20% 1KV     |

| POS. NR. | MATERIAL-NR. | BEZEICHNUNG |
|----------|--------------|-------------|
| POS. NO. | PART NUMBER  | DESCRIPTION |

|          |                |                          |
|----------|----------------|--------------------------|
| C 61036  | 865006704600   | KERKO HV C 100PF 20% 1KV |
| C 61056  | 865006704600   | KERKO HV C 100PF 20% 1KV |
| C 61211  | 865006704600   | KERKO HV C 100PF 20% 1KV |
| C 62021  | 866009823400   | KERKO SI 1000PF 20% 400V |
| C 62022  | 866009823400   | KERKO SI 1000PF 20% 400V |
| C 62501  | △ 851179303300 | FOKO MP3 0,22UF 20% 250V |
| C 81063  | 814054010400   | EMIFIL 0,1 UF -GR        |
| CD 32201 | 830940159200   | SMD DIODE BA591          |
| CD 32411 | 830940159200   | SMD DIODE BA591          |
| CD 32421 | 830940159200   | SMD DIODE BA591          |
| CD 32460 | 830940159200   | SMD DIODE BA591          |
| CD 32465 | 830940159200   | SMD DIODE BA591          |
| CD 32475 | 830940159200   | SMD DIODE BA591          |

|          |              |                  |
|----------|--------------|------------------|
| CIC32410 | 830581409400 | SMD IC MC14094BD |
|----------|--------------|------------------|

|          |              |                         |
|----------|--------------|-------------------------|
| CT 32105 | 830100581700 | SMD-TRANS BC817-25      |
| CT 32111 | 830100484800 | SMD TRANS BC848B/BC847B |
| CT 32119 | 830100484800 | SMD TRANS BC848B/BC847B |

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION

**GRUNDIG****TV**

| POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION |
|----------------------|-----------------------------|----------------------------|
| CT 32122             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 32123             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 32124             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 32132             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 32201             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 32205             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 32435             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 32440             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 32455             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 32460             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 32465             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 32470             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 32475             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 32480             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 32501             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 34031             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 40065             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 43244             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 43246             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 46004             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 46009             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 52260             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 54020             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 57005             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 57020             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 57021             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 57112             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 57113             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 57124             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 61043             | 830100484800                | SMD TRANS BC848B/BC847B    |
| CT 81058             | 830100580800                | SMD TRANS BC808-25/BC807   |
| CT 81065             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 81070             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 81075             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 81120             | 830100385800                | SMD TRANS BC858B/BC857B    |
| CT 81125             | 830100385800                | SMD TRANS BC858B/BC857B    |
| D 40012              | 830921504500                | DIODE 1N4148               |
| D 40060              | 830921504500                | DIODE 1N4148               |
| D 40061              | 830921504500                | DIODE 1N4148               |
| D 40062              | 830921504500                | DIODE 1N4148               |
| D 40063              | 830972007100                | Z DIODE 7.5C 0,5W          |
| D 40065              | 830921504500                | DIODE 1N4148               |
| D 43055              | 830921504500                | DIODE 1N4148               |
| D 43056              | 830921504500                | DIODE 1N4148               |
| D 43071              | 830921504500                | DIODE 1N4148               |
| D 43072              | 830921504500                | DIODE 1N4148               |
| D 43073              | 830921504500                | DIODE 1N4148               |
| D 50022              | 830920002100                | DIODE BAV21                |
| D 50023              | 830921502000                | DIODE 1N4004               |
| D 50026              | 830972051000                | Z DIODE 51C 0,5W           |
| D 50027              | 830919854200                | DIODE BAT42                |
| D 52001              | 830921504500                | DIODE 1N4148               |
| D 53003              | 830920100500                | DIODE BA157                |
| D 54001              | 830920426800                | DIODE BYV16                |
| D 54011              | 830920100500                | DIODE BA157                |
| D 54021              | 830972003600                | Z DIODE 3,6C 0,5W          |
| D 54022              | 830972033000                | Z-DIODE 30B 0,5W           |
| D 54031              | 830920100500                | DIODE BA157                |
| D 57011              | 830921504500                | DIODE 1N4148               |
| D 57013              | 830921504500                | DIODE 1N4148               |
| D 57023              | 830921504500                | DIODE 1N4148               |
| D 57122              | 830921504500                | DIODE 1N4148               |
| D 60006              | 830951685400                | DIODE BYT54M               |
| D 60007              | 830951685400                | DIODE BYT54M               |
| D 60012              | 830920002100                | DIODE BAV21                |
| D 60022              | 830921512700                | DIODE 1N4007               |
| D 60024              | 830921512700                | DIODE 1N4007               |
| D 60026              | 830921512700                | DIODE 1N4007               |
| D 60027              | 830921512700                | DIODE 1N4007               |

| POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION |
|----------------------|-----------------------------|----------------------------|
| D 60037              | 830920002100                | DIODE BAV21                |
| D 60202              | 830920115900                | DIODE BA159                |
| D 60203              | 830966318000                | Z-DIODE BZT03D180          |
| D 60204              | 830920002100                | DIODE BAV21                |
| D 60213              | 830972007400                | Z DIODE 7.5B 0,5W          |
| D 60256              | 830921512700                | DIODE 1N4007               |
| D 60257              | 830921512700                | DIODE 1N4007               |
| D 60258              | 830921512700                | DIODE 1N4007               |
| D 60259              | 830921512700                | DIODE 1N4007               |
| D 61016              | 830951717800                | DIODE BYW178               |
| D 61036              | 830951710800                | DIODE BYT108-400           |
| D 61056              | 830951717200                | DIODE BYW172D              |
| D 61211              | 830951675500                | DIODE BYT53D               |
| D 81054              | 830921504500                | DIODE 1N4148               |
| D 81123              | 830921504500                | DIODE 1N4148               |
| D 85001              | 830996610000                | LE-DIODE TLDLR4100         |
| F 32101              | 814111240500                | FILTER 7X7 405 SIGN 11240  |
| F 32109              | 860275504200                | CER.TRAP 42                |
| F 32121              | 814111136000                | FILTER 7X7 360 SIGN 11136  |
| F 32410              | 814053445100                | SPULE 7X7 #451 SIGN534451  |
| F 32412              | 831900345100                | QWFFIL K3451K              |
| F 32420              | 831900946000                | OFW L 9460                 |
| F 32430              | 831900955400                | QWFFIL K9554               |
| F 32493              | 814053535200                | SPULE 7X7 #352 SIGN535352  |
| IC 32490             | 830533448800                | IC U4488                   |
| IC 32520             | 830500505300                | IC HEF4053BP               |
| IC 34015             | 830533884100                | IC TDA8842N2S1             |
| IC 40050             | 830533726600                | IC TDA7266M                |
| IC 50010             | 830533835600                | IC TDA8356N6               |
| IC 60010             | 830535460500                | IC TDA4605/3               |
| IC 60201             | 830558002000                | IC VIPER20A/022Y           |
| IC 61040             | 830520431700                | IC LM317T                  |
| IC 61060             | 830520570600                | IC MC7805CT                |
| IC 61211             | 830520570600                | IC MC7805CT                |
| IC 80000             | 830521006500                | IC MC33164P-5RP            |
| IC 80010             | 830536753000                | IC TFMSS300 STEHEND/TSOP   |
| IC 81050             | 830515519100                | IC SDA5257-2-G411          |
| IC 81050             | 297982010100                | IC SDA545X OTP PROG.KPL    |
| IC 82005             | 830512400800                | IC M24C08B1                |
| L 31043              | 814052644000                | DR ST 0411-GRP 8,2UH 10%   |
| L 32108              | 814052645800                | DR 0309 2,7UH 5%           |
| L 32109              | 814052644400                | DR ST 0309-GRP 10UH 5%     |
| L 32201              | 814052694400                | DR N-GR 4,7MH 5%/CHOKE     |
| L 41011              | 810498201400                | DAEMPF-PERLE 433003038102  |
| L 53003              | 810498205600                | FERRITPERLE HF70 BTL 3,5X  |
| L 53011              | 814050524900                | FERRITE BEAD               |
| L 53021              | 292031149500                | DR A AX-GA 10UH 10%/CHOKE  |
| L 53074              | 092468385100                | LINEARITAETSREGLER         |
| L 60006              | 810498205700                | ZB-SPULE/ZB COIL           |
| L 60251              | 295008239600                | FERRITPERLE 3,6UH 5720500  |
| L 61038              | 810498200300                | FERRITE BEAD               |
| L 61211              | 810498201400                | FERRITE BEAD               |
| L 62501              | 295008269700                | DAEMPF-PERLE 433003038102  |
| L 81061              | 810498205100                | DAMPING BEAD               |
| OK 60210             | 830600001200                | FUNKENTSTOERDROSSEL        |
|                      |                             | INTERFERENCE CHOKE         |
|                      |                             | FERRITPERLE BL02RN2-R62    |
|                      |                             | FERRITE BEAD               |
|                      |                             | DAEMPF-PERLE 433003038102  |
|                      |                             | DAMPING BEAD               |
|                      |                             | FUNKENTSTOERDROSSEL        |
|                      |                             | INTERFERENCE CHOKE         |
|                      |                             | FERRITPERLE HF55 BTL 3,5X  |
|                      |                             | FERRITE BEAD               |
|                      |                             | OPTOKOPLER CNY17F1         |
|                      |                             | OPTO COUPLER               |

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION

| POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION |
|----------------------|-----------------------------|----------------------------|
| Q 34043              | 838213600400                | QUARZ #136 2A 4,433619MHZ  |
| Q 80001              | 838224609600                | QUARZ 6,0 MHZ              |
| R 40053              | 870111900900                | KSW SI B 2,2 OHM 5%        |
| R 50023              | 870032903700                | KSW NB 0207 33 OHM 5%      |
| R 50046              | 870042920700                | KSW NB 0207 1,8 OHM 2%     |
| R 50047              | 870042920700                | KSW NB 0207 1,8 OHM 2%     |
| R 52004              | 870552105300                | MOW 0411 150 OHM 5%        |
| R 53002              | 870042909700                | KSW NB 0207 10 KOHM 5%     |
| R 53009              | 871033814500                | MGW AX 1 MOHM 5%           |
| R 53011              | 870532122100                | MOW 0411 6,8 OHM 5%        |
| R 53016              | 873018942500                | DRW 9 10 OHM 10% 214-3     |
| R 53021              | 870552107100                | MOW 0411 820 OHM 5%        |
| R 53033              | 870532098400                | MOW 0411 0,22 OHM 5%       |
| R 53074              | 870536907100                | MOW 0617 820 OHM 5%        |
| R 54001              | 870532902500                | MOW 0411 10 OHM 5%         |
| R 54006              | 873500320100                | DRW 0,75W 1 OHM 10%        |
| R 54031              | 870032902300                | KSW NB 0207 8,2 OHM 5%     |
| R 60008              | 870556110500                | MOW 0617 22 KOHM 5%        |
| R 60009              | 870556110500                | MOW 0617 22 KOHM 5%        |
| R 60016              | 870556104300                | MOW 0617 56 OHM 5%         |
| R 60021              | 831100501700                | NTC 4,7 OHM 30%            |
| R 60029              | 870556111700                | MOW 0617 68 KOHM 5%        |
| R 60037              | 879005003700                | ESTR.SK10-A 1,5 KOHM LIN   |
| R 60251              | 876504916100                | MSW SI 0414 4,7 MOHM VDE   |
| R 61018              | 870014712900                | KSW 0411 220 KOHM 5%       |
| R 62049              | 876504916100                | MSW SI 0414 4,7 MOHM VDE   |
| R 62505              | 831120001800                | PTC DUO B59709-T60-A110    |
| SI 52001             | 831560902600                | SI LOET T160MA 250V        |
| SI 60201             | 831561002600                | SI LOET 200 MA/T           |
| SI 60251             | 831562000300                | SI 5X20 T2A L 250V         |
| SI 61211             | 831561620500                | SI LOET T800MA 250V        |
| SI 62501             | 831561700600                | SI 5X20 T2,5A L 250V       |
| T 52001              | 830328563700                | TRANS BC637                |
| T 53001              | 830290002000                | TRANS S2055N               |
| T 60006              | 830280504000                | TRANS IRFBC40              |
| TR 52001             | 092468680400                | TRAFO TREIBER              |
| TR 53010             | 292210316800                | TRANSFORMER DRIVER         |
| TR 60201             | 292016199700                | TRAFO DIODEN-SPLIT         |
| TR 61000             | 292015219700                | TRANSFORMER DIODE SPLIT    |
|                      |                             | SPERRWANDLERTRAFO          |
|                      |                             | 293040508400               |
|                      |                             | SPERRWANDLERTRAFO          |
|                      |                             | B.O.TYPE CONVERTER         |
|                      |                             | TRANSFORMER                |

Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Mat.-Nummer 720108000000, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!



The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 720108000000, as well as the respective national deviations.

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION

Ersatzteilliste  
Spare Parts List

2 / 2001

CHASSIS-FS-MONO CUC 2003/INL/MULTI/COM  
CHASSIS TV MONO CUC 2003/INL/MULTI/COM

MATERIAL-NR. / PART NO.: 297040066000

| POS. NR.<br>POS. NO. | ABB.<br>FIG. | MATERIAL-NR.<br>PART NUMBER | ANZ.<br>QTY. | BEZEICHNUNG<br>D                                         | DESCRIPTION<br>GB                                          |
|----------------------|--------------|-----------------------------|--------------|----------------------------------------------------------|------------------------------------------------------------|
|                      |              | 297040066000                |              | CHASSIS-FS-MONO<br>CUC 2003/INL/MULTI/COM<br>KEIN E-TEIL | CHASSIS TV MONO<br>CUC 2003/INL/MULTI/COM<br>NO SPARE PART |
| 0100.000             |              | 295043010100                |              | TUNER-GLOBAL (PLL)                                       | TUNER-GLOBAL (PLL)                                         |
| 0206.000             |              | 297006437500                |              | ABDECKUNG BUCHSEN MONTIERT KPL                           | COVER SOCKETS MOUNTED CPL                                  |
| 0216.000             |              | 297033571100                |              | TASTSCHALTER PROGRAMM +                                  | KEY SWITCH PROGRAMME +                                     |
| 0216.000             |              | 297033571100                |              | TASTSCHALTER PROGRAMM -                                  | KEY SWITCH PROGRAMME -                                     |
| 0216.000             |              | 297033571100                |              | TASTSCHALTER LAUTSTÄRKE +                                | KEY SWITCH VOLUME +                                        |
| 0216.000             |              | 297033571100                |              | TASTSCHALTER LAUTSTÄRKE -                                | KEY SWITCH VOLUME -                                        |
| 0240.000             |              | 293033904300                |              | KOPFHÖRERBUCHSE 3,5mm M.SCHALTER                         | HEADPHONE SOCKET 3,5mm WITH                                |
| SWITCH               |              |                             |              |                                                          |                                                            |
| 0247.000             |              | 293031190602                |              | EURO-AV BUCHSENLEISTE 21-POL SW                          | EURO-AV SOCKET STRIP 21 PIN BLACK                          |
| 0300.000             |              | 293051290100                | X            | TON FILTERPLATTE                                         | SOUND FILTER BOARD                                         |
| 0400.000             | △            | 293040508400                |              | NETZTEIL 5V/0,4A                                         | POWER SUPPLY 5V/0.4A                                       |
| 0500.000             |              | 295041082400                |              | COM-MODUL KPL                                            | COM-MODULE CPL                                             |
| 0910.000             | △            | 292107030100                |              | FOKUSLEITUNG                                             | FOCUSING CABLE                                             |
| 1000.000             | △            | 096211130206                | 4            | SICHERUNGSHALTER SI60251/62501                           | FUSE HOLDER SI60251/62501                                  |
| 2000.000             | △            | 297032912105                |              | NETZSCHALTER O.WISCHER                                   | POWER SWITCH W/O WIPER                                     |
| WW.                  | △            | 297032913100                |              | NETZSCHALTER O.WISCHER 4A                                | POWER SWITCH W/O WIPER 4A                                  |
| 2200.000             | △            | 293033995100                |              | NETZ EINBAUGERÄTESTECKER                                 | APPLIANCE COUPLER                                          |
| 2410.000             |              | 293031530200                |              | MONTAGECLIP IC40050                                      | MOUNTING CLIP IC40050                                      |
| 2415.000             |              | 293031530208                | 2            | MONTAGECLIP T53001/IC50010                               | MOUNTING CLIP T53001/IC50010                               |
| 2430.000             |              | 293031531208                | 3            | MONTAGECLIP IC61040/61060/61211                          | MOUNTING CLIP IC61040/61060/61211                          |
| 2440.000             |              | 293031531600                |              | MONTAGECLIP T60006                                       | MOUNTING CLIP T60006                                       |
| 2470.000             |              | 293031562000                | 4            | FOLIE WÄRMELEITEND IC61040/<br>61060/61211/T60006        | FOIL HEAT CONDUCTING IC61040/<br>61060/61211/T60006        |

X = SIEHE GESONDERTE E-LISTE  
WW. = WAHLWEISEX = SEE SEPARATE PARTS LIST  
WW. = OPTIONAL

| POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION    | POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION |
|----------------------|-----------------------------|-------------------------------|----------------------|-----------------------------|----------------------------|
| C 40057              | 841516610600                | ELKO 1000UF 20% 16V           | C 62021              | 866009823400                | KERKO SI 1000PF 20% 400V   |
| C 53002              | 851591110200                | FOKO FKP1/4 8500PF 3,5% 1500V | C 62022              | 866009823400                | KERKO SI 1000PF 20% 400V   |
| C 54011              | 865006704600                | KERKO HV C 1000PF 20% 1KV     | C 62048              | 866009823400                | KERKO SI 1000PF 20% 400V   |
| C 54012              | 845299618700                | ELKO 1000UF 20% 35V           | C 62501              | 851179303300                | FOKO MP3 0,22UF 20% 250VW  |
| C 54031              | 865006704600                | KERKO HV C 1000PF 20% 1KV     | C 81063              | 814054010400                | EMIFIL 0,1 UF -GR          |
| C 60001              | 865008112500                | KERKO HV C 1000PF 20% 1KV     | CD 32201             | 830940159200                | SMD DIODE BA591            |
| C 60009              | 851591103800                | FOKO FKP1 100PF 10% 1600V     | CD 32411             | 830940159200                | SMD DIODE BA591            |
| C 60023              | 865008112500                | KERKO HV C 1000PF 20% 1KV     | CD 32421             | 830940159200                | SMD DIODE BA591            |
| C 60024              | 865008112500                | KERKO HV C 1000PF 20% 1KV     | CD 32460             | 830940159200                | SMD DIODE BA591            |
| C 60026              | 865008112500                | KERKO HV C 1000PF 20% 1KV     | CD 32465             | 830940159200                | SMD DIODE BA591            |
| C 60027              | 865008112500                | KERKO HV C 1000PF 20% 1KV     | CD 32475             | 830940159200                | SMD DIODE BA591            |
| C 60210              | 866009823400                | KERKO SI 1000PF 20% 400V      | CIC32410             | 830581409400                | SMD IC MC14094BD           |
| C 60251              | 851179301800                | MP3 0,1UF 20% 250V            | CT 32105             | 830100581700                | SMD-TRANS BC817-25         |
| C 60252              | 851179301800                | MP3 0,1UF 20% 250V            | CT 32111             | 830100484800                | SMD TRANS BC848B/BC847B    |
| C 60256              | 865008112500                | KERKO HV C 1000PF 20% 1KV     | CT 32119             | 830100484800                | SMD TRANS BC848B/BC847B    |
| C 60257              | 865008112500                | KERKO HV C 1000PF 20% 1KV     | CT 32122             | 830100385800                | SMD TRANS BC858B/BC857B    |
| C 60258              | 865008112500                | KERKO HV C 1000PF 20% 1KV     | CT 32123             | 830100484800                | SMD TRANS BC848B/BC847B    |
| C 61036              | 865006704600                | KERKO HV C 100PF 20% 1KV      | CT 32124             | 830100385800                | SMD TRANS BC858B/BC857B    |
| C 61056              | 865006704600                | KERKO HV C 100PF 20% 1KV      |                      |                             |                            |
| C 61211              | 865006704600                | KERKO HV C 100PF 20% 1KV      |                      |                             |                            |

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION

| POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION | POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION |
|----------------------|-----------------------------|----------------------------|----------------------|-----------------------------|----------------------------|
| CT 32132             | 830100484800                | SMD TRANS BC848B/BC847B    | D 60204              | 830920002100                | DIODE BAV21                |
| CT 32201             | 830100484800                | SMD TRANS BC848B/BC847B    | D 60213              | 830972007400                | Z DIODE 7,5B 0,5W          |
| CT 32205             | 830100484800                | SMD TRANS BC848B/BC847B    | D 60256              | 830921512700                | DIODE 1N4007               |
| CT 32435             | 830100484800                | SMD TRANS BC848B/BC847B    | D 60257              | 830921512700                | DIODE 1N4007               |
| CT 32440             | 830100385800                | SMD TRANS BC858B/BC857B    | D 60258              | 830921512700                | DIODE 1N4007               |
| CT 32455             | 830100484800                | SMD TRANS BC848B/BC847B    | D 60259              | 830921512700                | DIODE 1N4007               |
| CT 32460             | 830100484800                | SMD TRANS BC848B/BC847B    | D 61016              | △ 830951717800              | DIODE BYW178               |
| CT 32465             | 830100484800                | SMD TRANS BC848B/BC847B    | D 61036              | 830951710800                | DIODE BYT108-400           |
| CT 32470             | 830100484800                | SMD TRANS BC848B/BC847B    | D 61056              | △ 830951717200              | DIODE BYW172D              |
| CT 32475             | 830100484800                | SMD TRANS BC848B/BC847B    | D 61211              | 830951675500                | DIODE BYT53D               |
| CT 32480             | 830100484800                | SMD TRANS BC848B/BC847B    | D 81054              | 830921504500                | DIODE 1N4148               |
| CT 32501             | 830100484800                | SMD TRANS BC848B/BC847B    | D 81123              | 830921504500                | DIODE 1N4148               |
| CT 34031             | 830100385800                | SMD TRANS BC858B/BC857B    | D 85001              | 830996610000                | LE-DIODE TLDR4100          |
| CT 40065             | 830100484800                | SMD TRANS BC848B/BC847B    | F 32101              | 814111240500                | FILTER 7X7 405 SIGN 11240  |
| CT 43244             | 830100385800                | SMD TRANS BC858B/BC857B    | F 32109              | 860275504200                | CER.TRAP 42                |
| CT 43246             | 830100484800                | SMD TRANS BC848B/BC847B    | F 32121              | 814111136000                | FILTER 7X7 360 SIGN 11136  |
| CT 46004             | 830100484800                | SMD TRANS BC848B/BC847B    | F 32410              | 814053445100                | SPLULE 7X7 #451 SIGN534451 |
| CT 46009             | 830100484800                | SMD TRANS BC848B/BC847B    | F 32412              | 831900345100                | OFWFL K3451K               |
| CT 52260             | 830100385800                | SMD TRANS BC858B/BC857B    | F 32420              | 831900946000                | OFW L 9460                 |
| CT 54020             | 830100385800                | SMD TRANS BC858B/BC857B    | F 32430              | 831900955400                | OFWFL K9554                |
| CT 57005             | 830100484800                | SMD TRANS BC848B/BC847B    | F 32493              | 814053535200                | SPLULE 7X7 #352 SIGN535352 |
| CT 57020             | 830100385800                | SMD TRANS BC858B/BC857B    | IC 32490             | 830533448800                | IC U4488                   |
| CT 57021             | 830100385800                | SMD TRANS BC858B/BC857B    | IC 32520             | 830500505300                | IC HEF4053BP               |
| CT 57112             | 830100385800                | SMD TRANS BC858B/BC857B    | IC 34015             | 830533884100                | IC TDA8842N2S1             |
| CT 57113             | 830100385800                | SMD TRANS BC858B/BC857B    | IC 40050             | 830533726600                | IC TDA7266M                |
| CT 57124             | 830100484800                | SMD TRANS BC848B/BC847B    | IC 50010             | 830533835600                | IC TDA8356N6               |
| CT 61043             | 830100484800                | SMD TRANS BC848B/BC847B    | IC 60010             | 830535460500                | IC TDA4605/3               |
| CT 81058             | 830100580800                | SMD TRANS BC808-25/BC807   | IC 60201             | 830558002000                | IC VIPER20A                |
| CT 81065             | 830100385800                | SMD TRANS BC858B/BC857B    | IC 61040             | 830520431700                | IC LM317T                  |
| CT 81070             | 830100385800                | SMD TRANS BC858B/BC857B    | IC 61060             | 830520570600                | IC MC7805CT                |
| CT 81075             | 830100385800                | SMD TRANS BC858B/BC857B    | IC 61211             | 830520570600                | IC MC7805CT                |
| CT 81120             | 830100385800                | SMD TRANS BC858B/BC857B    | IC 80000             | 830521006500                | IC MC33164P-5RP            |
| CT 81125             | 830100385800                | SMD TRANS BC858B/BC857B    | IC 80010             | 830536753000                | IC TFM55300 STEHEND/TSOP   |
| D 40012              | 830921504500                | DIODE 1N4148               | IC 81050             | 830515519100                | IC SDA5257-2-G411          |
| D 40060              | 830921504500                | DIODE 1N4148               | WW.                  | 297982010100                | IC SDA545X OTP PROG.KPL    |
| D 40061              | 830921504500                | DIODE 1N4148               | IC 82005             | 830512400800                | IC M24C08B1                |
| D 40062              | 830921504500                | DIODE 1N4148               | L 31043              | 814052644000                | DR ST 0411-GRP 8,2UH 10%   |
| D 40063              | 830972007100                | Z DIODE 7,5C 0,5W          | L 32108              | 814052645800                | DR ST 0309-GRP 10UH 5%     |
| D 40065              | 830921504500                | DIODE 1N4148               | L 32109              | 814052644400                | DR ST 0309-GRP 10UH 5%     |
| D 43055              | 830921504500                | DIODE 1N4148               | L 32201              | 814052694400                | DR N-GR 4,7MH 5%CHOKE      |
| D 43056              | 830921504500                | DIODE 1N4148               | L 41011              | 810498201400                | DAEMPF-PERLE 433003038102  |
| D 43071              | 830921504500                | DIODE 1N4148               |                      |                             | DAMPING BEAD               |
| D 43072              | 830921504500                | DIODE 1N4148               | L 53003              | 810498205600                | FERRITPERLE HF70 BTL 3,5X  |
| D 43073              | 830921504500                | DIODE 1N4148               |                      |                             | FERRITE BEAD               |
| D 50022              | 830920002100                | DIODE BAV21                | L 53011              | 814050524900                | DR A AX-GA 10UH 10%        |
| D 50023              | 830921502000                | DIODE 1N4004               |                      |                             | CHOKE                      |
| D 50026              | 830972005100                | Z DIODE 51C 0,5W           | L 53021              | 292031149500                | LINEARITAETSREGLER         |
| D 50027              | 830919854200                | DIODE BAT42                |                      |                             | LINEARITY CONTROL          |
| D 52001              | 830921504500                | DIODE 1N4148               | L 53074              | 092468385100                | ZB-SPLULE/ZB COIL          |
| D 53003              | 830920100500                | DIODE BA157                | L 60006              | 810498205700                | FERRITPERLE 3,6UH 5720500  |
| D 54001              | △ 830920426800              | DIODE BYV16                |                      |                             | FERRITE BEAD               |
| D 54011              | 830920100500                | DIODE BA157                | L 60251              | △ 295008239600              | FUNKENTSTÖRERDROSSEL       |
| D 54021              | 830972003600                | Z DIODE 3,6C 0,5W          |                      |                             | INTERFERENCE CHOKE         |
| D 54022              | 830972003300                | Z-DIODE 30B 0,5W           | L 61038              | 810498200300                | FERRITPERLE BL02RN2-R62    |
| D 54031              | 830920100500                | DIODE BA157                |                      |                             | FERRITE BEAD               |
| D 57011              | 830921504500                | DIODE 1N4148               | L 61211              | 810498201400                | DAEMPF-PERLE 433003038102  |
| D 57013              | 830921504500                | DIODE 1N4148               |                      |                             | DAMPING BEAD               |
| D 57023              | 830921504500                | DIODE 1N4148               | L 62501              | △ 295008269700              | FUNKENTSTÖRERDROSSEL       |
| D 57122              | 830921504500                | DIODE 1N4148               |                      |                             | INTERFERENCE CHOKE         |
| D 60006              | 830951685400                | DIODE BYT54M               | L 81061              | 810498205100                | FERRITPERLE HF55 BTL 3,5X  |
| D 60007              | 830951685400                | DIODE BYT54M               |                      |                             | FERRITE BEAD               |
| D 60012              | 830920002100                | DIODE BAV21                | OK 60210             | △ 830600001200              | OPTOKOPLER CNY17F1         |
| D 60022              | 830921512700                | DIODE 1N4007               |                      |                             | OPTO COUPLER               |
| D 60024              | 830921512700                | DIODE 1N4007               | Q 34043              | 838213600400                | QUARZ #136 2A 4,433619MHZ  |
| D 60026              | 830921512700                | DIODE 1N4007               | Q 80001              | 838224609600                | QUARZ 6,0 MHZ              |
| D 60027              | 830921512700                | DIODE 1N4007               |                      |                             |                            |
| D 60037              | 830920002100                | DIODE BAV21                |                      |                             |                            |
| D 60202              | 830920115900                | DIODE BA159                |                      |                             |                            |
| D 60203              | 830966318000                | Z-DIODE BZT03D180          |                      |                             |                            |

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION

| POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION                             |
|----------------------|-----------------------------|--------------------------------------------------------|
| R 40053              | △ 870111900900              | KSW SI B 2,2 OHM 5%                                    |
| R 50023              | △ 870032903700              | KSW NB 0207 33 OHM 5%                                  |
| R 50046              | △ 870042920700              | KSW NB 0207 1,8 OHM 2%                                 |
| R 50047              | △ 870042920700              | KSW NB 0207 1,8 OHM 2%                                 |
| R 52004              | △ 870552105300              | MOW 0411 150 OHM 5%                                    |
| R 53002              | △ 870042909700              | KSW NB 0207 10 KOHM 5%                                 |
| R 53009              | △ 871033814500              | MGW AX 1 MOHM 5%                                       |
| R 53011              | △ 870532122100              | MOW 0411 6,8 OHM 5%                                    |
| R 53016              | △ 873018942500              | DRW 9 10 OHM 10%                                       |
| R 53021              | △ 870552107100              | MOW 0411 820 OHM 5%                                    |
| R 53033              | △ 870532098400              | MOW 0411 0,22 OHM 5%                                   |
| R 53074              | △ 870536907100              | MOW 0617 820 OHM 5%                                    |
| R 54001              | △ 870532902500              | MOW 0411 10 OHM 5%                                     |
| R 54006              | △ 873500320100              | DRW 0,75W 1 OHM 10%                                    |
| R 54031              | △ 870032902300              | KSW NB 0207 8,2 OHM 5%                                 |
| R 60008              | △ 870556110500              | MOW 0617 22 KOHM 5%                                    |
| R 60009              | △ 870556110500              | MOW 0617 22 KOHM 5%                                    |
| R 60016              | △ 870556104300              | MOW 0617 56 OHM 5%                                     |
| R 60021              | △ 831100501700              | NTC 4,7 OHM 30%                                        |
| R 60029              | △ 870556111700              | MOW 0617 68 KOHM 5%                                    |
| R 60037              | △ 879005003700              | ESTR.SK10-A 1,5 KOHM LIN                               |
| R 60251              | △ 876504916100              | MSW SI 0414 4,7 MOHM VDE                               |
| R 61018              | △ 870014712900              | KSW 0411 220 KOHM 5%                                   |
| R 62049              | △ 876504916100              | MSW SI 0414 4,7 MOHM VDE                               |
| R 62505              | △ 831120001800              | PTC DUO B59709-T60-A110                                |
| SI 52001             | △ 831560902600              | SI LOET T160MA 250V                                    |
| SI 60201             | △ 831561002600              | SI LOET 200 MA/T                                       |
| SI 60251             | △ 831562000300              | SI 5X20 T2A L 250V                                     |
| SI 61211             | △ 831561620500              | SI LOET T800MA 250V                                    |
| SI 62501             | △ 831561700600              | SI 5X20 T2,5A L 250V                                   |
| T 00665              | 830280504000                | TRANS IRFBC40                                          |
| T 52001              | 830328563700                | TRANS BC637                                            |
| T 53001              | 830290002000                | TRANS S2055N                                           |
| TR 52001             | 092468680400                | TRAFO TREIBER<br>TRANSFORMER DRIVER                    |
| TR 53010             | △ 292210316800              | TRAFO DIODEN-SPLIT<br>TRANSFORMER DIODE SPLIT          |
| TR 60201             | △ 292016199700              | SPERRWANDLERTRAFO<br>293040508400<br>SPERRWANDLERTRAFO |
| TR 61000             | △ 292015219700              | B.O.TYPE CONVERTER<br>TRANSFORMER                      |

| POS. NR.<br>POS. NO. | MATERIAL-NR.<br>PART NUMBER | BEZEICHNUNG<br>DESCRIPTION |
|----------------------|-----------------------------|----------------------------|
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Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Mat.-Nummer 720108000000, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!



The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 720108000000, as well as the respective national deviations.

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION