# 900-series
## Modular Distribution System

### Versatile Low-noise Distribution

- **Up to 30 channels available** from each rack
- **Ultra low noise** and EMC profile
- **Flexible configuration** and mounting arrangements
- **Auto changeover units** for fully redundant switching assures safe, continuous 24/7 operation
- **Wide range of modules** available including reference frequencies for metrology and telecom, 1-pps timing and a variety of timecodes

The 900-series are distribution amplifiers for local distribution of time code signals, 1-pps timing signals sinewave reference frequency to multiple outputs, up to 30 per cabinet.

### 900-series Overview

The 900 series is a range of high-reliability modules which are used to build versatile signal distribution systems. The use of ultra-low-noise Power Supplies, enclosed module construction and co-axial cable for interconnections means that the units have excellent noise, emissions and immunity characteristics.

The mainframe is suitable for 19" rack, desktop or wall mounting.

Typical applications are in installations where 'round the clock' reliability is a must. Examples include manufacturing plants for items such as mobile communications equipment and cellular base stations, both military and commercial. More generally the 900 series has applications in development laboratories, support workshops and calibration areas.

The 900 series units can also be found in many satellite ground stations, running up/down links from the Poles to the Tropics.

The 900 series can be widely configured with distribution of a variety of reference frequencies, 2.048 MHz (G.703) clock signals, 1-pps timing and various timecodes

Up to 30 individually buffered outputs at +13 dBm (1V rms in 50 ohm) is available from one 3U high cabinet

Continuous un-interrupted operation is assured via auto-changeover input modules, allowing redundant frequency sources to be used.

A 5 MHz to 10 MHz frequency doubler module provides good quality output signals without the need to use synthesizers or tracking oscillators.

All modules have built in test and can detect faults down to individual output level.

Alarms are consolidated in the rack PSU module and transmitted by relay output. Automatic signal source changeover is provided by some modules. This facility can be controlled manually by a front panel rotary switch, or remotely via Ethernet, by use of the 1873A communications add on option

# 900-series Technical Specifications

## Input Modules

### 910D - Input conditioning/Splitter module

| | |
|---|---|
| *Input freq. range:* | 1MHz to 10MHz |
| *Input level:* | 0 dBm to +13 dBm (adjustable) |
| *Input connector:* | 1 x Input, N-Type |
| *Output connector:* | 6 x SMA (Signal split to five output modules, 1 spare for local cascade connection) |
| *Alarm:* | Input level and Output level fault indicators, with alarm threshold adjustment on front panel |

### 980A - RF auto-changeover module

| | |
|---|---|
| *Input freq. range:* | 1MHz to 10MHz |
| *Input level:* | 0 dBm to +13 dBm |
| *Input connector:* | 2 x BNC (Master and Slave inputs) |
| *Output connector:* | 3 x BNC (Buffered Master, Buffered Standby, and Source-in-use) |
| *Indicators:* | Input level fault indicators, with alarm threshold adjustment on front panel + source in use |
| *Remote control:* | TTL remote control interface and status readout, 'D-sub' connector. Front panel manual override switch |

### 980B - Timecode auto-changeover module

| | |
|---|---|
| *Input connector:* | 2 x BNC (Master and Slave inputs) |
| *Output connector:* | 3 x BNC (Buffered Master, Buffered Standby, and Source-in-use) |
| *Indicators:* | Input level fault indicators, with alarm threshold adjustment on front panel + source in use |
| *Remote control:* | TTL remote control interface and status readout, 'D-sub' connector. Front panel manual override switch |

### 980C - 1 pps auto-changeover module

| | |
|---|---|
| *Input signal:* | 1 pps; TTL-levels in 50 ohm |
| *Input connector:* | 2 x BNC (Master and Slave inputs) |
| *Output connector:* | 3 x BNC (Buffered Master, Buffered Standby, and Source-in-use) |
| *Indicators:* | Input level fault indicators, with alarm threshold adjustment on front panel + source in use |
| *Remote control:* | TTL remote control interface and status readout, 'D-sub' connector. Front panel manual override switch |

## RF (1 to 10 MHz) Output Modules

### Common:

*All output modules receive normally their input reference signal from the Input / Splitter module 910D or the 980 Changeover module.*

*Input signal connector:* 1x SMA

### 909B - Standard sinewave output module

| | |
|---|---|
| *Output level:* | +13 dBm in 50 ohm |
| *Output connector:* | 6 x BNC |
| *Indicators:* | Individual output alarm indicators and user adjustable alarm threshold level |

### 919A - Hi-level sinewave output module

| | |
|---|---|
| *Output level:* | up to +22.5 dBm in 50 ohm (adjustable) |
| *Output connector:* | 3 x BNC |

### 903A - 2.048 MHz (G.703) distribution module

| | |
|---|---|
| *Input/output freq.:* | 2.048 MHz (from input module 910D) |
| *Output level:* | G.703 compliant in 75 ohm |
| *Output connector:* | 6x BNC |

### 912A- TTL distribution module

| | |
|---|---|
| *Output level:* | TTL-levels in 50 ohm |
| *Output connector:* | 6 x BNC |

### 920B - 5 to 10 MHz frequency doubler sinewave output module

| | |
|---|---|
| *Input freq.:* | 5 MHz (same as reference signal to input module 910D) |
| *Output freq.:* | 10 MHz |
| *Output level:* | +13 dBm in 50 ohm |
| *Output connector:* | 6x BNC |

### 916A - Synthesiser sinewave output module

Unit supplied pre-programmed with up to 250 user defined output frequencies

| | |
|---|---|
| *Freq. range:* | 100 kHz to 10MHz |
| *Freq. accuracy:* | same as frequency reference input to 910D |
| *Freq. resolution:* | 10 mHz (10 digits), user defined |
| *Output level:* | +13 dBm in 50 ohm |
| *Output connector:* | 6x BNC |
| *Indicator:* | Front-panel lock-status indicator |

## Timecode Output Modules

### 909E - Timecode output module

| | |
|---|---|
| *Input:* | 1x SMA (from input module 910D) |
| *Timecode:* | modulated codes as presented at input |
| *Output level:* | up to +13 dBm in 50 ohm (adjustable) |
| *Output connector:* | 6 x BNC |

### 930A - Universal fiber transceiver module

Two channel copper/fibre transceiver module for timecodes and/or logic signals

| | |
|---|---|
| *Input:* | 2x BNC (TTL-levels), 2x opto (ST) |
| *Timecode:* | IRIG-A, IRIG-B, NMEA, or any logic signal to 10 MHz |
| *Output level:* | TTL-levels in 50 ohm (BNC) |
| *Output connector:* | 2x Opto (ST-connector)<br>2x BNC logic outputs |
| *Indicator:* | Front-panel input/output fault monitor |

## Phase Comparator Module

### 908A- Phase comparator module

| | |
|---|---|
| *Freq. range:* | 1MHz to 10MHz |
| *Inputs:* | source A, source B, reference |
| *Input connector:* | 3 x inputs, BNC |
| *Output signal:* | 2 x dc outputs, 0 to+1V fsd |
| *Output connector:* | 1x SMA (reference signal output<br>1x DIN5 (Phase - dc output ) |
| *Control:* | Rear-panel switch-select input impedance Hi/50 ohm all inputs |

***For single channel operation:***

*Relative Phase A input versus Reference input*

***For dual-channel operation:***

*Relative Phase, A input versus Reference input and,*
*Relative Phase B input versus Reference input*

## Power Supply Module

### 911 - Power supply module

| | |
|---|---|
| *AC mains:* | 100/115/230V ±10% (45 to 66 Hz) |
| *DC output:* | via ribbon connector +/- 14V, 1A nominal, to other modules in cage |
| *Indicators:* | Low voltage warning for internal DC voltages. |
| *Alarm input:* | Module alarm signal input via power ribbon cable from all cage modules |
| *Alarm output:* | Cage alarm relay on isolated BNC connector (normally closed) |

## General Specifications

### Environmental Data

| | |
|---|---|
| *Operating Temp:* | 0°C to +50°C |
| *Storage Temp:* | -40°C to +71°C |
| *Safety:* | EN 61010-1, EN 60950, CE |
| *EMC:* | EN 50081-1, EN50081-2, CE |

### Dimensions and Weight

| | |
|---|---|
| *Rack Width x Height x Depth:* | 483 x 134 x 350 mm (19" x 5.3" x 13.8") |
| *Module Width x Height x Depth:* | 60 x 130 x 230 mm (2.4" x 5.1" x 9") |
| *Weight:* | 4.0 kg (mainframe only) to 11.0 kg (fully populated) |

## Ordering Information

| | |
|---|---|
| *900A:* | 19" mainframe |
| *903A:* | 2.048 (G.703) output module |
| *908A:* | Phase comparator module |
| *909B:* | Standard sinewave output module |
| *909E:* | Timecode output module |
| *910D:* | Input splitter module |
| *911D:* | 230 V AC mains power module |
| *911E:* | 115 V AC mains power module |
| *911F:* | 100 V AC mains power module |
| *912A:* | TTL distribution module |
| *916A:* | Synthesizer sinewave output module |
| *919A:* | Hi-level sinewave output module |
| *920B:* | 5 to 10 MHz frequency doubler module |
| *930A:* | Universal fiber transceiver module |
| *980A:* | RF auto-changeover module |
| *980B:* | Timecode auto-changeover module |
| *980C:* | 1-pps auto-changeover module |

***Included with shipment***

*Mains cable (to power module 911)*
*User manual on CD*
*18 months warranty*

***Communication options***

| | |
|---|---|
| ***Model 1873A:*** | RS232 to Ethernet converter + digital input/output |

***Other options***

| | |
|---|---|
| ***Option 95/03:*** | Extended warranty to 3 years (instead of 18 months) |
| ***Option 95/05:*** | Extended warranty to 5 years (instead of 18 months) |

*Specifications subject to change without notice*

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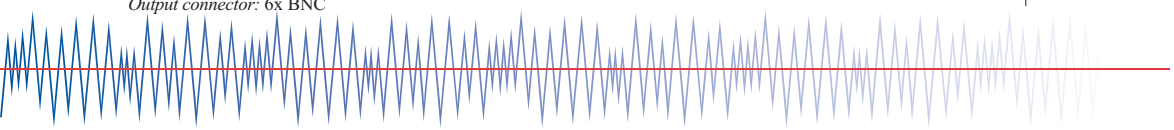

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