Rapco 900 Series -- Modular Distribution System

TYPICAL FRONT VIEW 900 series

- **UP TO 30 CHANNELS AVAILABLE FROM EACH RACK. (CASCADEABLE)**
- **ULTRA LOW NOISE AND EMC PROFILE.**
- **FLEXIBLE CONFIGURATION AND MOUNTING ARRANGEMENTS.**
- **WIDE RANGE OF MODULES AVAILABLE.**

The 900 series is a range of high-reliability modules which are used to build versatile frequency distribution systems. The use of linear Power Supplies, enclosed module construction and co-axial cable for interconnections means that the units have excellent noise, emissions and immunity characteristics. Versions of the sub-rack are available for 19" rack, desk top 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. 900 series units can also be found in many satellite ground stations, running up/down links from the Poles to the Tropics.

The most widely used configuration of the 900 system is fitted with:

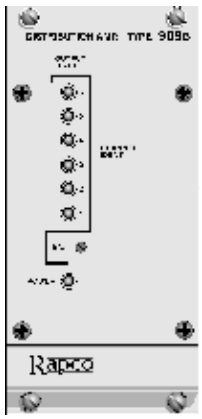
1 x 911C Power Module
1 X 910D Input module
plus a number of 909 Output Modules (up to 5)

This arrangement provides up to 30 individually buffered outputs at +13dBm (1V rms in 50ohm) from one 3U-high cabinet that can be rack-mounted or installed on a shelf or wall bracket in the vicinity of the destination loads. Input, from a suitable reference source, in the frequency range 1MHz to 10MHz, is via an N-type connector, chosen for its compatibility with a variety of 'low-loss trunk' cables used for frequency distribution in large buildings. Signal levels from the source are normally in the range +7 to +13 dBm (½ to 1Vrms) but levels as low as 0dBm can be accommodated by gain adjustment in the 910 Input module. The unit is locally powered from 220/230/240V 50Hz supplies, and imposes a load of less than 70 VA. Local distribution over distances of up to 50metres is usually cabled with high quality double-shielded co-ax, such as RG400, to ensure minimum noise pick-up.

900 SERIES MODULES -- Outline specifications

General
All 900 series modules are built in fully enclosed 12HP X 3U DIN housings and are compatible with the 900 cage POWER SUPPLY MODULE (911C). Input frequency reference is provided, where required, from the INPUT CONDITIONING/SPLITTER MODULE (910D).

909B -- STANDARD SINEWAVE OUTPUT MODULE / 1MHz to 10MHz
909E -- TIMECODE OUTPUT MODULE

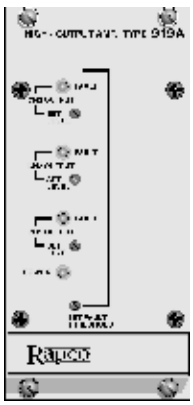


FRONT

REAR

1 x Input, SMA (from 910D Cage Input conditioning/Splitter module)
6 Outputs, BNC (+13dBm in 50ohm maximum recommended)
All outputs monitored for low-signal state; individual Indicators. Front-panel alarm-threshold adjust.
Collective alarm output to Cage-alarm logic in 911 Power unit

919A -- HI-LEVEL SINEWAVE OUTPUT MODULE / 1MHz to 10MHz



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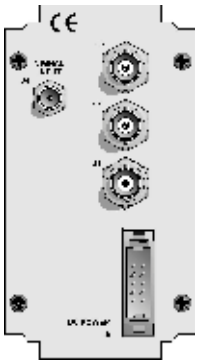
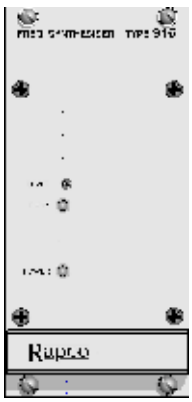


REAR

1 x Input, SMA (from 910D Cage Input conditioning/Splitter module)
3 x Outputs, BNC (+22.5dBm in 50ohm maximum recommended), TNC connector option.
Separate level control for each output; front-panel adjust.
All outputs monitored for low-signal state; individual Indicators. front-panel alarm-threshold adjust.
Collective alarm output to Cage-alarm logic in 911 Power unit

916A -- DIRECT DIGITAL SYNTHESISER SINEWAVE OUTPUT MODULE / VLF to 10MHz



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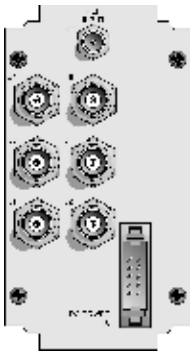
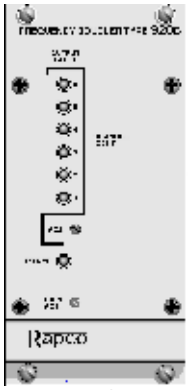


REAR

1 x Input, SMA (from 910D Cage Input-conditioning/Splitter module)
6 Outputs, BNC (+13dBm in 50ohm maximum recommended)
Up to 250 frequencies available via internal DIL switch.
User-defined frequencies available. 10 digit (= 10millihertz) setting resolution.
Frequency accuracy matches input source, digitally locked. Front-panel lock-status indicator.

920B --5MHz TO 10 MHz FREQUENCY-DOUBLER SINEWAVE OUTPUT MODULE.

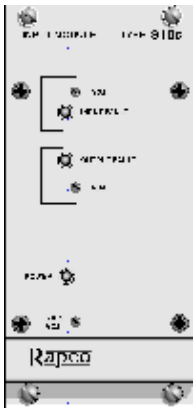


FRONT

REAR

1 x Input, SMA (from 910D Cage Input conditioning/Splitter module)
6 Outputs, BNC (+13dBm in 50ohm maximum recommended)
Collective level control for all outputs; front-panel adjust.
All outputs monitored for low-signal state. Individual Indicators. front-panel alarm-threshold adjust.
Collective alarm output to Cage-alarm logic in 911 Power unit.

910D -- INPUT CONDITIONING / SPLITTER MODULE -- 1MHz to 10MHz



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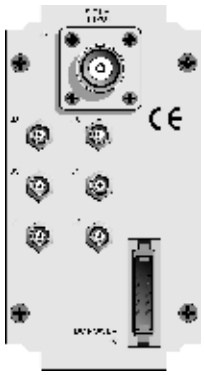


REAR

1 x Input, N-Type (from cage input frequency-reference source)
6 x Outputs, SMA (Signal split to five output modules, 1 spare for local cascade connection)
Collective output level adjustment on front-panel;
Gain range sufficient for operation with <0dBm to >+13dBm input.
Input level and Output level fault indicators, with alarm threshold adjustment on front panel.

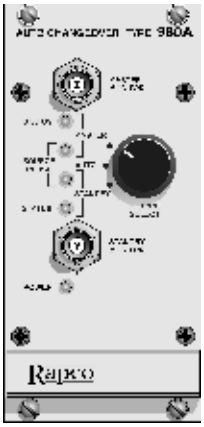
911D -- POWER SUPPLY MODULE -- 220V/230V/240V ac rms INPUT, +/-14Vdc output
911E -- POWER SUPPLY MODULE -- 110V/115V/120V ac rms INPUT, +/-14Vdc output

FRONT

REAR

ac input via IEC connector. / LSF Power lead provided
dc output via ribbon connector +/- 14V nominal at up to 1A
Internal +ve and -ve dc rails, monitored for low voltage. Front-panel indicator.
Module alarm signal input via power ribbon cable from all cage modules
Cage alarm relay, voltage-free contacts on isolated BNC connector

980A – RF AUTO-CHANGEOVER MODULE with Remote / Manual override
980B – TIMECODE AUTO-CHANGEOVER MODULE with Remote / Manual override
980C – 1PPS AUTO-CHANGEOVER MODULE with Remote / Manual override



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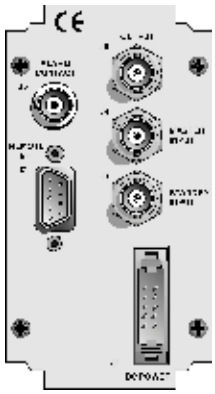
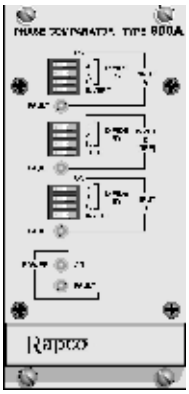


REAR

2 x signal inputs, BNC, from Master and Standby sources, 1 x output , BNC
Both sources monitored for signal level failure.
Status and Source-in-use indicators on front panel.
Buffered front-panel monitor sockets, BNC, for Master and Standby signals.
Front-panel rotary switch for manual override to Master or Standby
TTL remote control interface and status readout, 'D' connector

908A -- PHASE COMPARATOR MODULE



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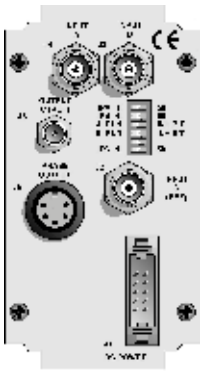
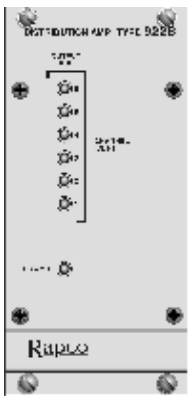


REAR

Dual channel phase comparison, 2 x dc outputs, 0 to+1V fsd
3 x inputs, BNC, source A, source B, Reference
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.
Rear-panel switch-select input impedance Hi/50ohm all inputs.
Reference Output, SMA, (to cascade reference to other modules) -- TTL/CMOS.

922 – RS422 DISTRIBUTION MODULE



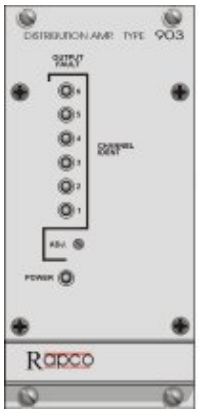
FRONT

REAR

1 x Input, BNC (Sinewave or TTL)
6 Outputs, BNO RS422 signalling
All outputs monitored for low-signal state; individual Indicators. Front-panel alarm-threshold adjust.
Collective alarm output to Cage-alarm logic in 911 Power unit.
Models available:-

922A 1 – 10MHz
922B Low frequency typically 1Hz

903A – G703 DISTRIBUTION MODULE



FRONT REAR

Sine or TTL input on SMA connector
6 outputs G703.10 compliant. BNC 75 ohm connector

912A – TTL DISTRIBUTION MODULE

Sine or TTL input on SMA connector
6 outputs TTL 50 ohm on BNC connector

929A – TIMECODE TO FIBRE MODULE

IRIG-A or B timecode input on SMA connector
Fibre Optic output on SM Opto connector

930A – UNIVERSAL FIBRE TRANSCEIVER MODULE

FRONT REAR

Two channel copper/fibre transceiver comprising:-

2x outputs of logic and Opto

2x inputs of IRIG, Timecode, NMEA, Logic or Rapco Opto
Fibre connections on opto SMA connectors. ST connectors available as option.