1U RF Distribution Amplifier

Description

This RF distribution amplifier is a 1U rack mount unit which takes a 10 dBm input and provides eight fixed outputs at 13 dBm. A power monitor is available at the point before the splitter of the 13 dBm outputs. This signal together with a temperature reading can be accesses through 15-pin D-sub on the read panel. There is also a BNC output which has a higher bandwidth. The unit requires +/-24V and +/-16.5V.

Power Monitors

The nominal slope of the power monitor is -100 mV/dBm with a reading of 4 V at 12 dBm. The formula is

> **Power Level** = 12 dBm - 10 dBm/V * (**Voltage Reading** - 4 V)

Conversion table:

RF power	Voltage reading
30 dBm	2.3V
20 dBm	3.2V
10 dBm	4.2V
0 dBm	5.2V
-10 dBm	6.2V
-20 dBm	7.2V
-30 dBm	8.0V

The temperature readout uses the following conversion

> **Temperature** = 20 °C + 50 °C/V * (**Voltage Reading** - 6 V)

Specifications

Frequency range:

- 5 MHz - 200 MHz minimum

Input:

- +10 dBm nominal
- N female

Standard fixed outputs (8):

- +13 dBm nominal
- 8x N female

High power fixed output (optional):

- one 13dBm output can be converted to a fixed higher power +26dBm output
- +26 dBm nominal (optional)
- this conversion also includes an additional monitor

RF power monitors (1 used):

- monitor input after first pre-amplifier
- monitor high power fixed output (optional)
- range at least 40 dB
- output: 0V - 10V single ended

Phase noise (all outputs):

Frequency	Phase noise spec
10 Hz	-110 dBc/Hz
100 Hz	-140 dBc/Hz
1 kHz	-160 dBc/Hz
10 kHz	-165 dBc/Hz

Amplitude noise (all outputs):

Frequency	AM noise spec
10 Hz	-140 dBc/Hz
100 Hz	-150 dBc/Hz
1 kHz	-150 dBc/Hz
10 kHz	-150 dBc/Hz

Drawings