RF Frequency Divider (by 8)

Description

This RF frequency divide-by-8 is a 1U rack mount unit which takes a 10 dBm input and provides an outputs at 13 dBm and half the frequency. A power monitor is available after the divider. 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:

- 79.4 ± 1.2 MHz (input); 9.925 ± 0.125 MHz, sine (output)

Input:

- +10 dBm nominal

- N female

Output:

- +13 dBm nominal
- 1x N female

RF power monitors (1 used):

- monitor power after doubler
- range at least 40 dB
- output: 0V - 10V single ended

Phase noise (all outputs):

- Noise floor -165 dBc/Hz (10 kHz offset)

Harmonics:

- < -30 dBc