sysmoRFDSATT-4-62 data sheet

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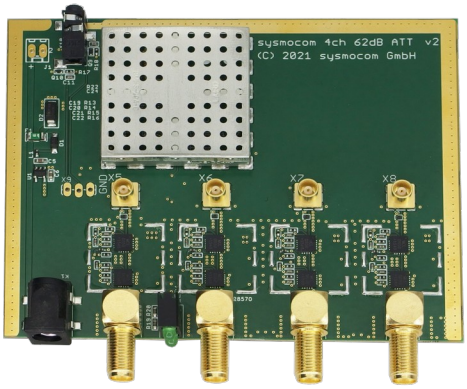

Introducing sysmoRFDSATT

The sysmoRFDSATT family is a product family of digitally controlled / programmable RF step attenuators.

The initial product within ths family is the sysmoRFDSATT-4-62 with:

- 4 independent RF channels
- 0 .. 62 dB nominal attenuation per channel.

This kind of device can be very useful in any kind of laboratory or test setup where RF signal strength must be adjusted programmatically.

A classic use case is e.g. the testing of power-based hand-over within lab setups of cellular radio network, such as GSM BTS, UMTS NodeB, LTE eNodeB or 5G gNodeB.

Different Form-Factors / Enclosures

The sysmoRFDSATT-4-62 is available in three variants:

- PCBA only, for integration into custom projects
- 3U Component Carrier
- Desktop Enclosure

The **PCBA-only version** is porovided as a 100 x 80 mm printed circuit board assembly.

The **desktop enclosure** version is housed in an aluminum enclosure. The enclosure is roughly 105 x 105 x 44 mm, excluding the protruding connectors on the face plate.

The **3U component carrier** variant is intended to be mounted in 3U high 19" component carriers conforming to IEC 60297-3-101. Such a component carrier can house a number of sysmoRFDSATT devices or other components from sysmocom (like the 16-channel GPS RF splitter) or third parties.

Software Integration

The full firmware stack, from boot loader up to the application firmware is Open Source Software. This means any user can be modified to accommodate any specific requirements.

For example, the following modifications are easily possible:

• support of the SCPI protocol for integration into existing lab software solutions

• support of any application-specific control protocol

• support of autonomous execution of entire scenarios, like ramping attenuation with certain slope

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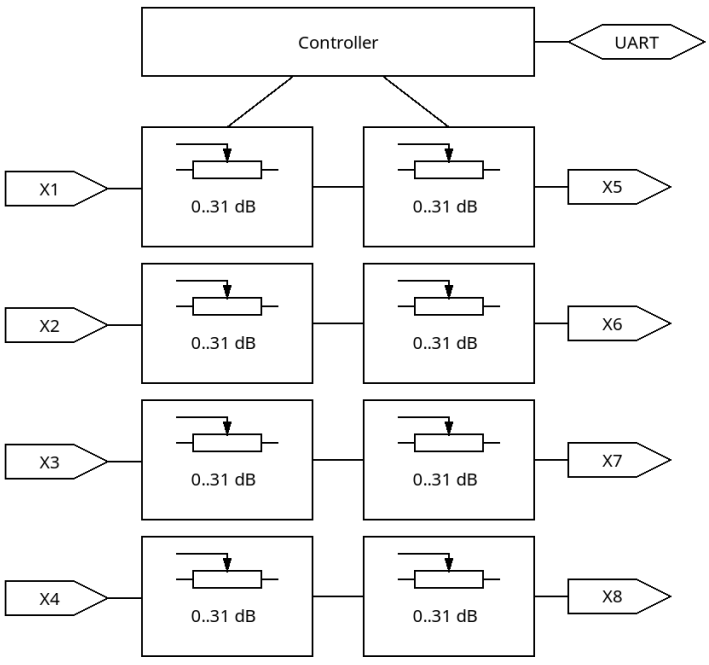
Mechanical / Electrical Specification

	Desktop Enclosure	3U Component Carrier
Dimensions (W x H x D)	105 x 44 x 104 mm (excl. SMA) 105 x 44 x 113.5 mm (incl. SMA)	35.3 x 128.2 x 82.5 mm (excl. SMA) 35.3 x 128.2 x 92 mm (incl. SMA)
Mounting	None	7 HP wide 3U module IEC 60297-3-101
Maximum RF power	+24 dBm >= 50MHz; +11 dBm >= 1 MHz	
Absolute maximum RF power	+30 dBm	
Attenuation Range (nominal)	0 .. 62 dB per channel; step size 1 dB	
Insertion Loss (typical)	3.5 dB @ 1 GHz; 5.4 dB @ 2 GHz, 6 dB @ 3 GHz	
UART Connector	3.3V UART on 2.5mm stereo jack, front-facing; 115200 bps	
RF Connectors	8 x SMA, female, front-facing	
Supply Voltage / Supply Current	3.6V-5.5V (typ 5V) / typ 30mA DC via 5.5/2.5mm barrel connector	3.6V-5.5V (typ 5V) / typ 30mA DC via 5.5/2.5mm barrel connector, or supplied internally via 2.54mm pitch header

Software / Logical Specification

Firmware (all open source)	• OpenBLT boot loader • application firmware built on libopencm3 + librfn
UART Protocol/Interface	• human-readable text commands on command line interface
Firmware Upgrade	• field-upgradable over UART without any special adapter



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