FRANKONIA
EMC Test-Systems GmbH

Datasheet
FPA-2 / FPA-6A / FPA-6B

Description

The FPA-x is a general purpose broadband pre-amplifier with high gain and low internal noise. The wide frequency range up to 2/6 GHz allows measurements acc. CISPR 22. Due to the high gain and the low noise figure the system noise is nearly independent of the other components including cable and receiver. These features make the FPA-x very useful for the measurement of very low limits, as required for CISPR 25. In this case it will be connected directly to the antenna. The amplifiers FPA-2 and FPA-6A are ESD protected to prevent defects by unintentional electrostatic discharge. The FPA offers a frequency range from 9 kHz to 6 GHz. For technical reasons it cannot be ESD-protected and special care is necessary. Nevertheless pre-amplifiers are generally ESD-sensitive devices, therefore it is very important to discharge coaxial cables before being connected. This is an essential precaution to protect the extremely small semiconductor structures operating in the microwave frequency range.

It must be noted that the use of pre-amplifier is generally not recommended for the measurement of impulsive signals. Such broadband noise is typical for many EMC measurements. This means that any broadband pre-amplifier is not suitable for EMC measurement of a broadband pulse spectrum. The FPA-x has an aluminum enclosure and uses N-Type flange connectors. A standard wall plug supply with +12 VDC output can be used. A suitable power supply for 230 V with Schuko socket is included in the delivery. The use of switching power supplies is not recommendable as they may cause higher levels of interference. An internal protection circuit slows down the rising and falling edge of the power supply voltage to prevent internal components and the receiver from being damaged by voltage spikes. 12 V auxiliary supplies from receivers and analyzers or batteries are also suitable if they can provide a continuous current of 0.14 A.

Technical specifications			
Type	FPA-2	FPA-6A	FPA-6B
Frequency range	9 kHz – 2 GHz	10 MHz – 6 GHz	9 kHz – 6 GHz
Noise figure	2.5 dB (1.0 GHz)	2.5 dB (1.0 GHz)	2.5 dB (1.0 GHz)
Gain	+ 30 dB	+ 28 dB	+ 28 dB
Amplitude flatness	< ± 3 dB	< ± 3 dB	< ± 3 dB
1 dB compression point at input	≥ -20 dBm (87 dBµV)	≥ -18 dBm (89 dBµV)	> 100 dBµV
Impedance	50 Ω	50 Ω	50 Ω
VSWR input / output	< 2:1	< 2:1	< 2:1
ESD protection	yes	yes	yes
Power supply	+ 12 V (± 2 V)	+ 12 V (± 2 V)	+ 12 V (± 2 V)
Current consumption	< 120 mA	< 130 mA	< 120 mA
Dimensions	82 x 38 x 27 mm	82 x 37 x 27 mm	88 x 41 x 27 mm
Weight	150 g	141 g	160 g

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