

Preamplifier (Low Noise Amplifier) Selection Guide

Definitions






Frequency - is the range the preamplifier will work over and where the specification is given are measured and guaranteed. Small margins outside the frequency band may be usable, but parameters are no longer guaranteed and should be used.











Gain – is the increase in dB expected of the test signal. This number is usually given as a minimum. With delivery, a gain curve and data table are provided as this changes over the frequency range.








N.F. (Noise Figure) – is the overall Noise the amplifier will generate. A preamplifier increases the “noise” seen on your receiver. A smaller N.F. is better. This is an important specification as any added noise reduces the overall effectiveness of the added gain. This number is given in a generic dB rating and, depending on your measurement resolution bandwidth (RBW), will determine the actual dB loss in sensitivity of the receiver’s noise floor.





P1dB – is the power level where the amplifier starts to saturate. At higher output levels, the amplifier should not be used as gain error becomes an issue. Above the p1dB level, the amplifier produces harmonics and possible intermodulation. These intermodulations signals are not real and may mislead the user to troubleshoot “ghost” signals. This value also shows the overall dynamic range of the amplifier. A higher value is better.

Comb Generator Selection Guide

	Product	Frequency	Gain	N.F.	P1dB	Specifications	Accessories
EMC9135		9 kHz – 1 GHz	35 dB +/-2.0 dB	2.5 dB	+13 dBm	Connector: in/out-N(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm 2.8kg	Optional Pulse ESD Protector EMC9135SE – amp module w/ external HQ power supply EMC9135SEE -amp module w/ external low-cost power supply
EMC9145		9 kHz – 1 GHz	45 dB +/-2.0 dB	2.5 dB	+13 dBm	Connector: in/out-N(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm 2.8kg	Optional Pulse ESD Protector EMC9145SE – amp module w/ external HQ power supply EMC9145SEE -amp module w/ external low-cost power supply
EMC1150		10 kHz – 1 GHz	50 dB +/-2.0 dB	2.5 dB	+13 dBm	Connector: in/out-N(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm 2.8kg	Optional Pulse ESD Protector EMC9135SE – amp module w/ external HQ power supply EMC9135SEE -amp module w/ external linear power supply
BBV 9745		9 kHz - 2 GHz	30 dB +/- 3 dB	2.5 dB	+10 dBm	Connector: in-N(m), out-N(f) Power: + 12V (+/-2V) 82 x 38 x 27 mm 150 g	Improved ESD immunity Required Power Supply PS 120/12 or battery pack from Absolute EMC
EMC330N		20 MHz - 3 GHz	30 dB +/-1.5 dB	5 dB	+15 dBm	Connector: in/out-N(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm 2.8kg	Optional Pulse ESD Protector EMC330SE – amp module w/ external HQ power supply EMC330SEE -amp module w/ external low-cost power supply

	Product	Frequency	Gain	N.F.	P1dB	Specifications	Accessories
EMC001330		9 kHz - 3 GHz	30 dB +/-1.5 dB	6 dB	+14 dBm	Connector: in/out-N(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm 3kg	Optional Pulse ESD Protector EMC001330SE – amp module w/ external HQ power supply EMC001330SEE -amp module w/ external low-cost power supply
EMC001340		9 kHz - 3 GHz	40 dB +/-1.5 dB	6 dB	+14 dBm	Connector: in/out-N(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm 3kg	Optional Pulse ESD Protector EMC001340SE – amp module w/ external HQ power supply EMC001340SEE -amp module w/ external low-cost power supply
EMC03640		30 MHz - 6 GHz	40 dB +/-2.5 dB	2.5 dB	+10 dBm	Connector: in/out-N(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm 3kg	Optional Pulse ESD Protector EMC03640SE – amp module w/ external HQ power supply EMC03640SEE -amp module w/ external low-cost power supply
BBV 9743 B		10 MHz - 6 GHz	28 dB +/-3.0 dB	2.7 dB	+10 dBm	Connector: in-N(m), out-N(f) Power: + 12V (+/-2V) 82 x 38 x 27 mm 150 g	Improved ESD immunity Required Power Supply PS 120/12 or battery pack from Absolute EMC
EMC01640AP		10 MHz - 6 GHz	40 dB +/-2.0 dB	2.5 dB	+15 dBm	Connector: in/out-N(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm 3kg	Optional Pulse ESD Protector EMC01640APSE – amp module w/ external HQ power supply EMC01640APSEE -amp module w/ external low-cost power supply
BBV 9744		9 kHz - 6 GHz	28 dB +/-3.0 dB	2.5 dB	+8 dBm	Connector: in-N(m), out-N(f) Power: + 12V (+/-2V) 82 x 38 x 27 mm 150 g	Required Power Supply PS 120/12 or battery pack from Absolute EMC
EMC1640		500 MHz - 6 GHz	40 dB +/-3.0 dB	2.5 dB	+10 dBm	Connector: in/out-N(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm 2.8kg	Optional Pulse ESD Protector EMC1640SE – amp module w/ external HQ power supply EMC1640SEE -amp module w/ external low-cost power supply
BBV 9718 C		0.5 -20 GHz	30 dB +/-5 dB	2 dB	+17 dBm	Conn: in-SMA(f), out-N(f) Power: 3.7 V / 3.1Ah Lithium 1555 x 80 x 67 mm, 1000 g Mount to 22m antenna shaft	Includes: SMA-N Coax 0.5m, USB-AC Charger
EMC003835B		30 MHz - 8 GHz	35 dB +/-2.0 dB	3.0 dB		Connector: in/out-SMA(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm, 3kg 145 x 75 x 158 mm, 628g	SE Version mounts to antenna With remote power supply 


	Product	Frequency	Gain	N.F.	P1dB	Specifications	Accessories
EMC0031830SE		30 MHz - 18 GHz	30 dB +/-3.0 dB	3.0 dB	+15 dBm	Connector: in/out-SMA(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm, 3kg 145 x 75 x 158 mm, 628g	3 versions for clamping on mast boom or antenna EMC0031830B - Benchtop Version EMC0031830SEE - Low-Cost Version
EMC051835SE		500 MHz - 18 GHz	35 dB +/-3.0 dB	3.0 dB	+10 dBm	Connector: in/out-SMA(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm, 3kg 145 x 75 x 158 mm, 628g	3 versions for clamping on mast boom or antenna EMC051835B - Benchtop Version EMC051835SEE - Low-Cost Version
EMC051845SE		500 MHz - 18 GHz	45 dB +/-4.0 dB	3.0 dB	+15 dBm	Connector: in/out-SMA(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm, 3kg 145 x 75 x 158 mm, 628g	3 versions for clamping on mast boom or antenna EMC051845B - Benchtop Version EMC051845SEE - Low-Cost Version
EMC118A45SE		1 - 18 GHz	36-45 dB +/-3.0 dB	3-10 dB	+20 dBm	Connector: in/out-SMA(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm, 3kg 145 x 75 x 158 mm, 628g	3 versions for clamping on mast boom or antenna EMC118A45B - Benchtop Version EMC118A45SEE - Low-Cost Version
EMC12630SE		1 – 26.5 GHz	30 dB +/-2.0 dB	4.0 dB	+13 dBm	Connector: in/out-SMA(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm, 3kg 145 x 75 x 158 mm, 628g	3 versions for clamping on mast boom or antenna EMC12630B - Benchtop Version EMC12630SEE - Low-Cost Version
EMC12635SE		1 – 26.5 GHz	35 dB +/-2.5 dB	4.0 dB	+15 dBm	Connector: in/out-SMA(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm, 3kg 145 x 75 x 158 mm, 628g	3 versions for clamping on mast boom or antenna EMC12635B - Benchtop Version EMC12635SEE - Low-Cost Version
EMC012645SE		100 MHz – 26.5 GHz	45 dB +/-4.0 dB	4.5 dB	+10 dBm	Connector: in/out-SMA(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm, 3kg 145 x 75 x 158 mm, 628g	3 versions for clamping on mast boom or antenna EMC012645B - Benchtop Version EMC012645SEE - Low-Cost Version

	Product	Frequency	Gain	N.F.	P1dB	Specifications	Accessories
BBV 9721	 Antenna not included	12 - 40 GHz	35 dB +/-4 dB	5.5 dB	>+15 dBm (122dBμV)	Conn: in/out-2.92 mm (f) Power: +15 V / 600 mA DC 370 x 95 x 65 mm, 860 g	Includes: short cable with 2.92 plugs Option PS 9721, AC power Option PS 9721, Battery with charger Works well with BBHA 9170 antenna
EMC184040SE		18 - 40 GHz	40 dB +/-4.5 dB	5 dB	+8 dBm	Connector: in/out-SMA(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm, 3kg 145 x 75 x 158 mm, 628g	3 versions for clamping on mast boom or antenna EMC184040B - Benchtop Version EMC184040SEE - Low-Cost Version
EMC184045SE		18 - 40 GHz	45 dB +/-4.5 dB	3 dB		Connector: in/out-SMA(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm, 3kg 145 x 75 x 158 mm, 628g	3 versions for clamping on mast boom or antenna EMC184045B - Benchtop Version EMC184045SEE - Low-Cost Version
EMC184055SE		18 - 40 GHz	55 dB +/-4.5 dB	3 dB		Connector: in/out-SMA(f) Power: 110 Vac / 230 Vac *Built-in AC grounding detection 217 x 254 x 100 mm, 3kg 145 x 75 x 158 mm, 628g	3 versions for clamping on mast boom or antenna EMC184055B - Benchtop Version EMC184055SEE - Low-Cost Version

Use preamplifier to:

- Compensate for Cables losses at high frequencies
- Compensate for high antenna factors
- Increase the sensitivity of receivers and spectrum analyzers
- Read smaller RF and Microwave signals
- Increase your usable dynamic range
- Place near the measurement instrumentation or close to the antenna

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<p>Built AC input main power grounding detect circuit</p>	
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Most EMCxxx units offered in a low cost SEE version:

SE – System with amplifier moduel, power supply, power cable. Amplifier moduel to be located on or near antenna with high quality external power supply can be located on chamber floor

SEE – Low Cost system with amplifier moduel, low cost power supply, power cable. Amplifier moduel to be located on or near antenna with high quality external power supply can be located on chamber floor.