

Agilent 8347A, 8447A, and 8447D Amplifiers Data Sheet



RF & Microwave Amplifiers Specifications Summary for 8347A RF Amplifier (Discontinued) and 8447A/D Preamplifier

Maximum leveled output power ≥ +20 dBm — — — — — — — — — — — — — — — — — — …		8347A RF Amplifier (Discontinued)	8447A Preamplifier	8447D Preamplifier
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Frequency range	100 kHz to 3 GHz	0.1 to 400 MHz	100 kHz to 1.3 GHz
Output power leveling range (≥ 300 kHz): +2 to +20 dBm Gain (mean, per channel) ≥ 25 dB 20 dB ± 1.0 dB ± 10 MHz > 25 dB (20° to 30 °C) Gain flatness across Internally leveled ±1.8 dB (0° to 55 °C) ±1.5 dB ±1.5 dB full frequency range ±300 kHz: ±1.5 dB ±0.7 dB (20° to 30 °C) characteristic Noise figure 10 MHz to 3 GHz: 15 dB < 7 dB	Typical 3 dB bandwidth	_	50 kHz to 700 MHz	75 kHz to 1.7 GHz
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	Maximum leveled output power	≥ +20 dBm	_	_
(20° to 30 °C)(20° to 30 °C)(20° to 30 °C)± 1.8 dB (0° to 55 °C)± 1.5 dB± 300 kHz: ±1.5 dB± 0.7 dB (20° to 30 °C) chrarecteristicNoise figure10 MHz to 3 GHz: 15 dB< 7 dB8 below 10 MHz: 20 dBOutput power for 1 dB± 22 dBm> +6 dBm> +7 dBm typicalgain compressionThird-order intercept+ 30 dBmHarmonic distortion(at +20 dBm output)32 dB for 0 dBm output30 dB for 0 dBm outputIntercept+ 30 dBmOutput for odBm output30 dB for 0 dBm outputOutput for COutput for COutput for odBm output	Output power leveling range	(≥ 300 kHz): +2 to +20 dBm	_	_
full frequency range ± 300 kHz: ± 1.5 dB ± 0.7 dB (20° to 30 °C) characteristic Noise figure 10 MHz to 3 GHz: 15 dB < 7 dB	Gain (mean, per channel)	≥ 25 dB		> 25 dB (20° to 30 °C)
Noise figure10 MHz to 3 GHz: 15 dB Below 10 MHz: 20 dB< 7 dB< 8.5 dBOutput power for 1 dB gain compression+22 dBm> +6 dBm> +7 dBm typicalThird-order intercept+30 dBm	Gain flatness across	Internally leveled	±1.8 dB (0° to 55 °C)	±1.5 dB
Below 10 MHz: 20 dBOutput power for 1 dB+22 dBm> +6 dBm> +7 dBm typicalgain compression	full frequency range	±300 kHz: ±1.5 dB		
an compressionThird-order intercept $+30 \text{ dBm}$	Noise figure		< 7 dB	< 8.5 dB
Third-order intercept+30 dBm	Output power for 1 dB	+22 dBm	> +6 dBm	> +7 dBm typical
Third-order intercept $+30 \text{ dBm}$ Harmonic distortion $(at +20 \text{ dBm output})$ $-32 \text{ dB for 0 dBm output}$ $-30 \text{ dB for 0 dBm output}$ Internal level off (ALC off): $\leq -25 \text{ dBc}$ Internal level on (ALC on): $\leq -20 \text{ dBc}$ (typical)Maximum input for minimum -14 dBm internally leveled output -14 dBm Output for <60 dB	gain compression			
Internal level off (ALC off): $\leq -25 dBc$ Internal level on (ALC on): $\leq -20 dBc$ (typical)Maximum input for minimum internally leveled output $-14 dBm$ ——Output for <-60 dB harmonic distortion $-25 dBm$ (characteristic) $-30 dBm$ VSWR2.0: 1 input 1.5: 1 output internally leveled 2.0: 1 output unleveled below 2 GHz 3.0: 1 output unleveled 2 GHz to 3 GHz $-15 000 MHz$ Reverse isolation $60 dB$ > 30 $ dB$ > 40 $ dB$ Maximum dc voltage output— $\pm 10 V$ $\pm 10 V$ Size213 mm W x 102 mm H x 298 mm D (8.4 in x 4.0 in x 11.8 in) $(5.1 in x 3.4 in x 8.5 in)$ $(5.1 in x 3.4 in x 8.5 in)$ WeightNet, 4 kg (8 lb) Shipping, 5 kg (11 lb)Net, 1.56 kg (3.4 lb) Shipping, 2.3 kg (5.1 lb)Nhet, 1.56 kg (3.4 lb) Shipping, 2.3 kg (5.1 lb)Nhet, 3.0 kg (5.1 lb) Shipping, 2.3 kg (5.1 lb)Power requirements—110 or 230 Vac + 10%, 48 to 440 Hz, 15 W10 or 230 Vac + 10%, 48 to 440 Hz, 15 WOption 001: Dual-channel amp	Third-order intercept	+30 dBm	_	_
Maximum input for minimum internally leveled output -14 dBm	Harmonic distortion	(at +20 dBm output)	-32 dB for 0 dBm output	-30 dB for 0 dBm output
internally leveled output -25 dBm (characteristic) -30 dBm harmonic distortion -25 dBm (characteristic) -30 dBm VSWR 2.0: 1 input < 1.7		Internal level off (ALC off): ≤ -25 dBc	Internal level on (ALC on): ≤ -20 dBc	(typical)
Output for <-60 dB harmonic distortion-25 dBm (characteristic)-30 dBmVSWR2.0: 1 input 1.5: 1 output internally leveled 2.0: 1 output unleveled below 2 GHz 	Maximum input for minimum	-14 dBm		——————————————————————————————————————
harmonic distortion VSWR 2.0: 1 input 1.5: 1 output internally leveled 2.0: 1 output unleveled below 2 GHz 3.0: 1 output unleveled 2 GHz to 3 GHz Reverse isolation 60 dB 3.0: 1 output unleveled 2 GHz to 3 GHz Reverse isolation 60 dB 4.10 V 410 V 4.10 V 5.10 V 5.10 V 5.10 V 4.10 V 5.10 V 5	internally leveled output			
VSWR 2.0: 1 input < 1.7 < 2.0 input 1.5: 1 output internally leveled 1.5: 1 output unleveled below 2 GHz 2.2 output 2.0: 1 output unleveled below 2 GHz 3.0: 1 output unleveled 2 GHz to 3 GHz 1 to 1300 MHz Reverse isolation 60 dB > 30 dB > 40 dB Maximum dc voltage output - ±10 V ±10 V Size 213 mm W x 102 mm H x 298 mm D 130 mm W x 85.8 mm H x 216 mm D 130 mm W x 85.8 mm H x 216 mm D (8.4 in x 4.0 in x 11.8 in) (5.1 in x 3.4 in x 8.5 in) (5.1 in x 3.4 in x 8.5 in) Weight Net, 4 kg (8 lb) Net, 1.56 kg (3.4 lb) Net, 1.56 kg (3.4 lb) Shipping, 5 kg (11 lb) Shipping, 2.3 kg (5.1 lb) Shipping, 2.3 kg (5.1 lb) Power requirements - 110 or 230 Vac + 10%, 48 to 440 Hz, 15 W 110 or 230 Vac + 10% Qption savailable Option 001: Dual-channel amp Option 001: Dual-channel amp	Output for <-60 dB		-25 dBm (characteristic)	-30 dBm
1.5: 1 output internally leveled < 2.2 output	harmonic distortion			
2.0: 1 output unleveled below 2 GHz 1 to 1300 MHz 3.0: 1 output unleveled 2 GHz to 3 GHz 1 to 1300 MHz Reverse isolation 60 dB > 30 dB > 40 dB Maximum dc voltage output ±10 V ±10 V Size 213 mm W x 102 mm H x 298 mm D 130 mm W x 85.8 mm H x 216 mm D 130 mm W x 85.8 mm H x 216 mm D (8.4 in x 4.0 in x 11.8 in) (5.1 in x 3.4 in x 8.5 in) (5.1 in x 3.4 in x 8.5 in) Weight Net, 4 kg (8 lb) Net, 1.56 kg (3.4 lb) Net, 1.56 kg (3.4 lb) Shipping, 5 kg (11 lb) Shipping, 2.3 kg (5.1 lb) Shipping, 2.3 kg (5.1 lb) Power requirements 110 or 230 Vac + 10%, 48 to 440 Hz, 15 W 110 or 230 Vac + 10% Qption savailable Option 001: Dual-channel amp Option 001: Dual-channel amp	VSWR	2.0: 1 input	< 1.7	< 2.0 input
3.0: 1 output unleveled 2 GHz to 3 GHz Reverse isolation 60 dB > 30 dB > 40 dB Maximum dc voltage output ±10 V ±10 V Size 213 mm W x 102 mm H x 298 mm D 130 mm W x 85.8 mm H x 216 mm D 130 mm W x 85.8 mm H x 216 mm D Weight Net, 4 kg (8 lb) (5.1 in x 3.4 in x 8.5 in) (5.1 in x 3.4 in x 8.5 in) Shipping, 5 kg (11 lb) Shipping, 2.3 kg (5.1 lb) Shipping, 2.3 kg (5.1 lb) Power requirements 110 or 230 Vac + 10%, 48 to 440 Hz, 15 W 110 or 230 Vac + 10% Qption savailable Option 001: Dual-channel amp Option 001: Dual-channel amp Option 001: Dual-channel amp		1.5: 1 output internally leveled		< 2.2 output
Reverse isolation 60 dB > 30 dB > 40 dB Maximum dc voltage output ±10 V ±10 V Size 213 mm W x 102 mm H x 298 mm D (8.4 in x 4.0 in x 11.8 in) 130 mm W x 85.8 mm H x 216 mm D (5.1 in x 3.4 in x 8.5 in) 130 mm W x 85.8 mm H x 216 mm D Weight Net, 4 kg (8 lb) Shipping, 5 kg (11 lb) Net, 1.56 kg (3.4 lb) Shipping, 2.3 kg (5.1 lb) Net, 1.56 kg (3.4 lb) Shipping, 2.3 kg (5.1 lb) Power requirements - 110 or 230 Vac + 10%, 48 to 440 Hz, 15 W 110 or 230 Vac + 10% 48 to 440 Hz, 15 W Option 001: Dual-channel amp Option 001: Dual-channel amp Option 001: Dual-channel amp		2.0: 1 output unleveled below 2 GHz		1 to 1300 MHz
Maximum dc voltage output ±10 V ±10 V Size 213 mm W x 102 mm H x 298 mm D (8.4 in x 4.0 in x 11.8 in) 130 mm W x 85.8 mm H x 216 mm D (5.1 in x 3.4 in x 8.5 in) 130 mm W x 85.8 mm H x 216 mm D (5.1 in x 3.4 in x 8.5 in) Weight Net, 4 kg (8 lb) Shipping, 5 kg (11 lb) Net, 1.56 kg (3.4 lb) Shipping, 2.3 kg (5.1 lb) Net, 1.56 kg (3.4 lb) Shipping, 2.3 kg (5.1 lb) Power requirements - 110 or 230 Vac + 10%, 48 to 440 Hz, 15 W 110 or 230 Vac + 10% 48 to 440 Hz, 15 W Option 001: Dual-channel amp Option 001: Dual-channel amp Option 001: Dual-channel amp				
Size 213 mm W x 102 mm H x 298 mm D (8.4 in x 4.0 in x 11.8 in) 130 mm W x 85.8 mm H x 216 mm D (5.1 in x 3.4 in x 8.5 in) 130 mm W x 85.8 mm H x 216 mm D (5.1 in x 3.4 in x 8.5 in) Weight Net, 4 kg (8 lb) Shipping, 5 kg (11 lb) Net, 1.56 kg (3.4 lb) Shipping, 2.3 kg (5.1 lb) Net, 1.56 kg (3.4 lb) Shipping, 2.3 kg (5.1 lb) Power requirements — 110 or 230 Vac + 10%, 48 to 440 Hz, 15 W 110 or 230 Vac + 10% 48 to 440 Hz, 15 W Option savailable Option 001: Dual-channel amp Option 001: Dual-channel amp	Reverse isolation	60 dB	> 30 dB	> 40 dB
(8.4 in x 4.0 in x 11.8 in) (5.1 in x 3.4 in x 8.5 in) (5.1 in x 3.4 in x 8.5 in) Weight Net, 4 kg (8 lb) Net, 1.56 kg (3.4 lb) Net, 1.56 kg (3.4 lb) Shipping, 5 kg (11 lb) Shipping, 2.3 kg (5.1 lb) Shipping, 2.3 kg (5.1 lb) Power requirements — 110 or 230 Vac + 10%, 48 to 440 Hz, 15 W 110 or 230 Vac + 10% Option savailable Option 001: Dual-channel amp Option 001: Dual-channel amp	Maximum dc voltage output	—		±10 V
Weight Net, 4 kg (8 lb) Net, 1.56 kg (3.4 lb) Net, 1.56 kg (3.4 lb) Shipping, 5 kg (11 lb) Shipping, 2.3 kg (5.1 lb) Shipping, 2.3 kg (5.1 lb) Power requirements 110 or 230 Vac + 10%, 48 to 440 Hz, 15 W 110 or 230 Vac + 10%, 48 to 440 Hz, 15 W Option savailable Option 001: Dual-channel amp Option 001: Dual-channel amp	Size	213 mm W x 102 mm H x 298 mm D	130 mm W x 85.8 mm H x 216 mm D	130 mm W x 85.8 mm H x 216 mm D
Shipping, 5 kg (11 lb) Shipping, 2.3 kg (5.1 lb) Shipping, 2.3 kg (5.1 lb) Power requirements — 110 or 230 Vac + 10%, 48 to 440 Hz, 15 W 110 or 230 Vac + 10% Option savailable Option 001: Dual-channel amp Option 001: Dual-channel amp				
Power requirements 110 or 230 Vac + 10%, 48 to 440 Hz, 15 W 110 or 230 Vac + 10% Options available Option 001: Dual-channel amp Option 001: Dual-channel amp	Weight	Net, 4 kg (8 lb)	Net, 1.56 kg (3.4 lb)	Net, 1.56 kg (3.4 lb)
48 to 440 Hz, 15 W 48 to 440 Hz, 15 W Options available Option 001: Dual-channel amp Option 101: Dual-channel amp Option 001: Dual-channel amp		Shipping, 5 kg (11 lb)	Shipping, 2.3 kg (5.1 lb)	Shipping, 2.3 kg (5.1 lb)
Options available Option 001: Dual-channel amp Option 001: Dual-channel amp	Power requirements	—	110 or 230 Vac + 10%,	110 or 230 Vac + 10%
			48 to 440 Hz, 15 W	48 to 440 Hz, 15 W
PNC(f) connectors $PNC(f)$ connectors	Options available		Option 001: Dual-channel amp	Option 001: Dual-channel amp
				BNC (f) connectors BNC (f) connectors
Option 010: Single-channel amp				
Type-N (f) connectors				
Option 011: Dual-channel amp				Option 011: Dual-channel amp
Type-N (f) connectors				





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