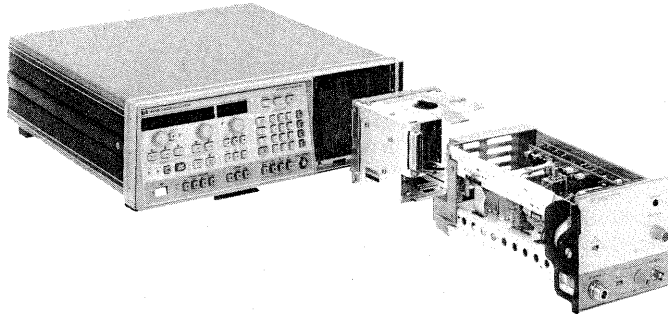


SWEEP OSCILLATORS

HP 8350 Series: RF Plug-ins



HP 11869A Adapter

The HP 11869A adapter provides the electrical and mechanical interface between the HP 8350 and 86200 series plug-ins. All of the HP 8350's standard operating features, including HP-IB remote programming, are available. However, specific plug-in functions (output power level, RF on/off, etc.) cannot be controlled or remotely programmed by the HP 8350 mainframe.

See page 423 for HP 86200 series plug-in specifications.

Plug-ins Compatible With The HP 11869A Adapter

The HP 11869A adapter attaches to the back of the HP 8620 series plug-in and is equipped with a switch for setting the specific interface code for the plug-in being used.

The following plug-ins will operate in the HP 8350 by using the HP 11869A.

HP 86220A ^{1,2}	HP 86240A/B/C	HP 86250A ¹ /B ¹ /C/D ²
HP 86222A/B	HP 86241A ¹	HP 86251A ³
HP 86230B ^{1,2}	HP 86242A ¹ /C/D ²	HP 86260A ¹ /B ^{1,3} /C ^{1,3}
HP 86235A	HP 86245A	HP 86290A ² /B/C

Ordering Information

HP 11869A adapter

Price

Options

Opt 004 Extension cables for plug-ins with rear panel RF output

Opt 006 Type N aux out interface connector for HP 86251A and 86290A²/B/C

Opt W30 Extended repair service. See page 723.

¹ Not compatible with 27.8 kHz square wave modulation.

² Models HP 86220A, 86230B, 86290A, 86250A/B/C, and 86242A/C are obsolete. However, existing models can interface to HP 8350B mainframe via the HP 11869A adapter.

³ Requires a special PROM for the HP 11869A, which is shipped with every HP 86251A, 86260B/C.

RF Plug-in Summary

	HP Model number	Frequency range (GHz)	Leveled power output	CW Frequency accuracy (MHz)	Complete specifications on page
Broad-band Plug-ins	HP 83597A	0.01-40	1 mW	±20	419
	HP 83596A	2.4-40	1 mW	±20	419
	HP 83595A	0.01-26.5	2.5 mW	±12	417/418
	HP 83595C	0.01-26.5	10 mW/20mW ¹	±12	417/418
	HP 83594A	2-26.5	2.5 mW	±12	417/418
	HP 83592A/B	0.01-20	10 mW/20 mW ¹	±10	417/418
	HP 83592C	0.01-20	2.5 mW/4 mW ²	±10	417/418
	HP 83590A	2-20	10 mW	±10	417/418
	HP 83525A/B	0.01-8.4	20 mW/10 mW	±15/12	420
	HP 83522A	0.01-2.4	20 mW	±5	420
	HP 86222A/B	0.01-2.4	20 mW	±10	423
	HP 86290B	2-18.6	10 mW	±30	423
	HP 86290C	2-18.6	20 mW	±30	423
Straddle-band Plug-ins	HP 83540A/B	2-8.4	40 mW/20 mW	±12	420
	HP 86240A	2-8.4	40 mW	±25	423
	HP 86240B	2-8.4	20 mW	±25	423
	HP 86240C	3.6-8.6	40 mW	±25	423
	HP 86251A	7.5-18.6	10 mW	±20 ³	423
	HP 83550A	8.0-20.0	100 mW/63 mW ⁴	±20	420
Single-band Plug-ins	HP 86235A	1.7-4.3	40 mW	±20	423
	HP 86241A	3.2-6.5	5 mW	±30	423
	HP 86242D	5.9-9	10 mW	±35	423
	HP 83545A	5.9-12.4	50 mW	±20	420
	HP 86245A	5.9-12.4	50 mW	±40	423
	HP 86250D	8.0-12.4	10 mW	±40	423
	HP 86260B	10-15.5	10 mW	±50	423
	HP 86260A	12.4-18	10 mW	±50	423
	HP 86260C	17-22	10 mW	±50	423
	HP 83570A	18-26.5	10 mW	±30	420
	HP 83572C	26.5-40	4 mW (Opt 001)	±100	420

NOTE: The HP 11869A Adapter is required to interface HP 86200 series plug-ins with the HP 8350B mainframe.

¹ 20 mW to 18 GHz (HP 83592B) and 20mW to 20 GHz (HP 83595C).

² HP 83592C: 4 mW to 18.6 GHz.

³ When installed in HP 8350 with HP 11869A Adapter.

⁴ HP 83550A: 100 mW to 18.6 GHz.

SWEEP OSCILLATORS

HP 8350 Series RF Plug-Ins

HP 83500 Series Plug-Ins: Specifications Summary	Broadband			Straddle-Band			Single-Band		
	HP 83522A ¹	HP 83525A ¹	HP 83525B ¹	HP 83540A	HP 83540B	HP 83550A	HP 83545A	HP 83570A ²	HP 83572C ³
Frequency Characteristics									
Range (GHz)	0.01-2.4	0.01-8.4	0.01-8.4	2-8.4	2-8.4	8-20	5.9-12.4	18-26.5	26.5-40
Accuracy (MHz, 25°C)									
CW Mode	±5	±15 ⁴	±12 ⁴	±12	±12	±20	±20	±30	±100
All Sweep Modes (sweep time >100 ms)	±15	±20 ⁴	±20 ⁴	±20	±20	±50	±35	±55	±150
Residual FM (kHz peak, 10 Hz-10 kHz bandwidth)	<5	<9 ⁴	<7 ⁴	<7	<7	<25 ¹³	<15	<30	<60
Output Characteristics									
Maximum Leveled Power (mW, 25°C)	>20	>20	>10	>40	>20	>100 ⁶	>50	>10	>5 ⁶
Power Level Accuracy (dB)									
Internally Leveled	±1	±1.5	±1.5	±1.5	±1.5	±1.5	±1	±1.8	±1.5 ⁷
Power Variation (dB, at max specified power)									
Internally Leveled	±0.25	±1	±1	±1	±1	±1.25	±0.6	±1.4	±3 ⁶
Externally Leveled, typical (excluding coupler/detector variations)	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.2
Spurious Signals (dBc, at max specified power)									
Harmonically Related	<-25	<-20	<-45 ⁴	<-20	<-45	<-20 ⁹	<-30 ¹⁰	<-25	<-20
Non-harmonics	<-25	<-60 ⁸	<-60 ⁸	<-60	<-60	<-50	<-60	<-50	<-50
Source SWR, typical (50 ohms nominal, internally leveled)	<1.5	<1.6 ⁸	<1.6 ⁸	<1.6	<1.6	<2.5	<1.6	<2.5	<1.5 ⁷
Modulation Characteristics									
External Pulse, typical									
Rise/Fall Time (ns)	n/a	20 ⁴	20 ⁴	20	20	25	15	20	300/50 ¹¹
Minimum RF Pulse Width									
Leveled (μs)	n/a	1 ⁴	5 ⁴	1	5	1	1	1	n/a
Unleveled (ns)	n/a	100 ⁴	100 ⁴	100	100	100	100	100	500 ¹¹
External FM									
Maximum Deviation (MHz)									
DC to 100 Hz Rates	±75	±75	±75	±75	±75	±75	±75	±75	±150
100 Hz to 200 kHz Rates	±7	±7	±7	±7	±7	±12	±7	±7	±3.5
200 kHz to 1 MHz Rates	±7	±7	±7	±7	±7	±12	±7	±7	n/a
1 MHz to 2 MHz Rates	±5	±5	±5	±5	±5	±12	±5	±5	n/a
2 MHz to 6 MHz Rates	±1	±1	±1	±1	±1	±12	±1	±1	n/a
6 MHz to 10 MHz Rates	±1	±1	±1	±1	±1	±1	±1	±1	n/a
Sensitivity (MHz/volt), typical	-20/-6	-20/-6	-20/-6	-20/-6	-20/-6	-20/-6	-20/-6	-20/-6	-20/-6
External AM									
Frequency response (kHz), typical	100	100	100	100	100	100	100	100	10
Range (dB), typical	>15	>15	>15	>15	>15	>20	>15	>11	>11 ⁷
Sensitivity (dB/volts)	+1	+1	+1	+1	+1	+1	+1	+1	+1 ⁷
Internal AM (1 kHz/27.8 kHz square wave)									
On/Off Ratio (dB)	>30	>30	>30	>30	>30	>30	>40	>25	>20 ¹¹
Prices									
Plug-in	\$8,400	\$13,100	\$14,300	\$9,900	\$10,750	\$16,500	\$10,100	\$13,000	\$19,200
With Opt 001 (Calibrated External Leveling)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	+ \$1,600
With Opt 002 (70 dB Attenuator)	+ \$1,005	+ \$1,105	+ \$1,105	+ \$1,105	+ \$1,105	+ \$1,305 ¹²	+ \$1,105	n/a	n/a
With Opt 004 (Rear Panel RF Output)	+ \$200	+ \$200	+ \$200	+ \$200	+ \$200	+ \$200	+ \$200	n/a	n/a
With Opt 006 Int. Sq. Wave Mod. & Ext. Pulse Mod.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	+ \$1,800
With Opt W30 (Two Years Extended Service)	+ \$190	+ \$285	+ \$285	+ \$215	+ \$215	+ \$380	+ \$250	+ \$320	+ \$425
With Opt W32 Calibration Service See Pg 723	+ \$1300	+ \$1265	+ \$1420	+ \$1135	+ \$970	+ \$1405	+ \$1215	+ \$800	+ \$895

¹ Enhanced frequency accuracy is provided by internal crystal markers of 10 MHz and 50 MHz (over full range for HP 83522A, and below 2 GHz for HP 83525A/B). 1 MHz harmonic markers are available below 1 GHz.

² WR42 waveguide RF output connector type.

³ WR28 waveguide RF output connector type.

⁴ Specifications apply from 2-8.4 GHz only. 0.01-2 GHz specifications are the same as the HP 83522A plug-in.

⁵ 63 mW from 18.6-20 GHz.

⁶ Unleveled output power.

⁷ Externally leveled (requires option 001 which consists of a calibrated crystal detector, external coupler, and BNC cable).

⁸ Specifications apply only from 2-8.4 GHz.

⁹ -15 dBc from 8-11 GHz.

¹⁰ -17 dBc from 5.9-7 GHz.

¹¹ Requires option 006 which provides internal square wave modulation and external pulse and square wave modulation capabilities.

¹² 50 dB step attenuator.

¹³ 20 Hz - 15 kHz bandwidth.