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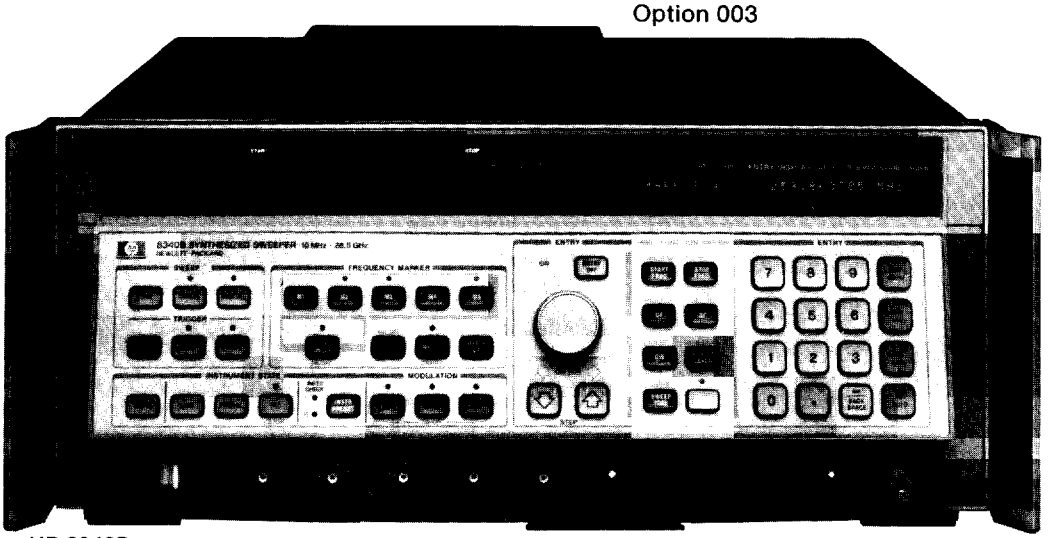
Find the *Keysight / Agilent 8340B* at our website: ***Click HERE***

SWEEP OSCILLATORS

Synthesized Sweepers

Models 8340B, 8341B

- 1 to 4 Hz frequency resolution
- Low spurious and phase noise
- +10 dBm to −110 dBm calibrated output
- Pulse, Amplitude, and Frequency Modulation
- Complete analog sweeper
- <−50 dBc harmonics 1.4 to 20 GHz on HP 8341B Option 003



HP 8340B

DESIGNED FOR HP-IB SYSTEMS

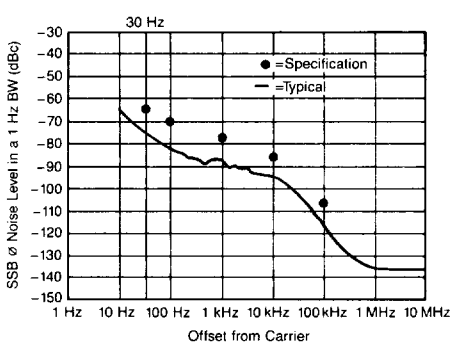
HP 8340B/8341B Synthesized Sweepers

The HP 8340B and 8341B Synthesized Sweepers deliver the combined high performance of a synthesizer and a broadband sweep oscillator in one instrument that is completely controllable via the Hewlett-Packard Interface Bus (HP-IB). This efficient combination of performance and versatility is ideal for manual or automatic test systems and in many cases enables the HP 8340B/8341B to replace a sweep oscillator, a frequency counter, an RF synthesizer, and a microwave synthesizer.

Frequency Precision and Spectral Purity

The synthesized broadband frequency coverage (10 MHz to 26.5 GHz on the HP 8340B and 10 MHz to 20 GHz on the HP 8341B) and the precise 1 to 4 Hz frequency resolution (depending on frequency band) are generated by indirect synthesis techniques, enabling the HP 8340B/8341B to achieve the same low single-sideband phase-noise performance as the HP 8671B, 8672A and 8673 series Synthesized Signal Generators. The HP 8340B/8341B long-term stability is also outstanding at 1×10^{-9}/day.

The HP 8340B/8341B feature CW switching times of better than 50 ms (typically <35 ms). Additionally, a "Fast Phase-lock" programming command can be used to reduce typical CW switching times to between 11 and 22 ms (depending on frequency step size and absolute frequency value).



HP 8340B/8341B Phase Noise performance from 2.3 to 7.0 GHz.

HP 8341B Option 003: <−50 dBc Harmonics

Option 003 on the HP 8341B delivers excellent harmonic performance, at least 50 dB below a 1.4 to 20 GHz carrier. This low-harmonics option is particularly useful for demanding EW receiver testing, and scalar analysis of frequency selective devices such as filters.

Output Power

The HP 8340B/8341B provide high output power which can be controlled down to −110 dBm with 0.05 dB resolution. High power resolution is complemented by outstanding accuracy and flatness. The HP 8340B/8341B also feature power sweep capability with >20 dB dynamic range for complete characterization of level-sensitive devices.

Pulse, Amplitude, and Frequency Modulation

The HP 8340B/8341B have a high-performance pulse modulator with ON/OFF ratio >80 dB and rise and fall times <25 ns. Pulse amplitude is leveled and can be as narrow as 100 ns. The HP 8340B/8341B also feature dc-coupled amplitude modulation with a 3 dB bandwidth of 100 kHz and a minimum depth of 90%, and frequency modulation with rates from 50 kHz to 10 MHz and peak deviations to 10 MHz. And with the HP 8340B/8341B, pulse, amplitude, and frequency modulation can be used simultaneously.

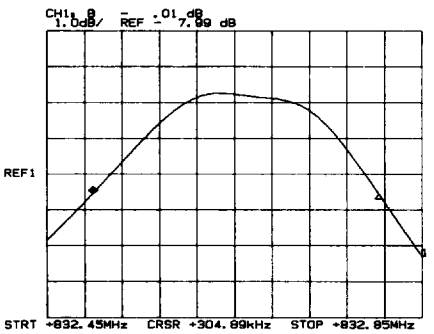
Swept Capability

Analog sweep widths as narrow as 100 Hz or as broad as the full frequency range of the HP 8340B/8341B permit rapid and thorough testing of any device within their broad frequency ranges. To simplify swept measurements, five frequency markers are provided along with useful marker functions such as marker sweep, marker to center frequency (MKR-CF), and marker difference.

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Network Analyzer Companions

Besides being excellent stand-alone general purpose sources, the HP 8340B/8341B are also ideal sources for precision microwave network analysis, where a significant part of measurement accuracy depends on the frequency accuracy, stability, signal purity, and source/analyzer interface of the sweeper used. As well as being the preferred HP 8510 vector network analyzer source, the HP 8340B/8341B can be teamed with the HP 8757/8756 Scalar Network Analyzers for precision scalar analysis, magnitude-only applications where data at accurate frequencies is needed. In addition to frequency accuracy, the HP 8340B/8341B have a "phase-locked sweep." For sweep widths of n × 5 MHz or less (n = frequency band number), one of the phase-locked loops is swept, producing synthesizer-class frequency accuracy and stability in a continuous sweep. As an example, see the figure at right, where an 832 MHz SAW resonator is swept over a width of 400 kHz by an HP 8341B with less than 60 Hz of residual FM.



HP 8341B 400 kHz sweep of 832 MHz SAW resonator

HP 8340B/8341B Specifications Summary

(see technical data sheet for complete specifications)

(All specifications apply to the 8341B up to 20 GHz)

Frequency

Range: HP 8340B, 10 MHz to 26.5 GHz
HP 8341B, 10 MHz to 20.0 GHz

Resolution (CW Mode):
1 Hz, 0.01 to <7.0 GHz
2 Hz, 7.0 to <13.5 GHz
3 Hz, 13.5 to <20.0 GHz
4 Hz, 20.0 to 26.5 GHz

Time Base: Internal 10 MHz time base. Aging rate: less than 1×10^{-9}/day and 2×10^{-7}/year after 30 day warm-up.

Swept Capability: Analog sweep, ΔF from 100 Hz to 26.49 GHz (19.99 GHz on 8341B); sweep times from 45 ms to 200 sec full span.

Spectral Purity

Harmonics (up to 26.5 GHz) of output frequency:
<−35 dBc

Subharmonics and Multiples thereof (up to 26.5 GHz) of output frequency:
<−25 dBc, 7.0 to <20.0 GHz
<−20 dBc, 20.0 to 26.5 GHz

HP 8341B Option 003 Harmonics, Subharmonics and Multiples thereof (up to 20.0 GHz):
<−35 dBc, 0.01 to < 1.4 GHz
<−50 dBc, 1.4 to 20.0 GHz

Non-Harmonically Related Spurious (CW and Manual Sweep mode only):
−50 dBc, 0.01 to <2.3 GHz
−70 dBc, 2.3 to <7.0 GHz
−64 dBc, 7.0 to <13.5 GHz
−60 dBc, 13.5 to <20.0 GHz
−58 dBc, 20.0 to 26.5 GHz

Single-Sideband Phase Noise (dBc/1 Hz Noise BW, CW Mode):

Frequency Range (GHz)	Offset from Carrier				
	30 Hz	100 Hz	1 kHz	10 kHz	100 kHz
0.01 to < 2.3	−64	−70	−78	−86	−107
2.3 to < 7.0	−64	−70	−78	−86	−107
7.0 to <13.5	−58	−64	−72	−80	−101
13.5 to <20.0	−54	−60	−68	−76	− 97
20.0 to 26.5	−52	−58	−66	−74	− 95

RF Output

Range: −110 dBm to +20 dBm
Resolution: 0.05 dB in ENTRY DISPLAY

Maximum Leveled Power:
+10.0 dBm, 0.01 to <2.3 GHz
+12.0 dBm, 2.3 to <7.0 GHz
+10.0 dBm, 7.0 to <13.5 GHz
+9.0 dBm, 13.5 to <20.0 GHz
+3.0 dBm, 20.0 to <23.0 GHz
+1.0 dBm, 23.0 to 26.5 GHz

RF Output Connector: APC-3.5 Male on HP 8340B, Type N Female on HP 8341B; nominal 50 ohm output impedance.

Modulation

Pulse Modulation
ON/OFF Ratio: >80 dB
Rise and Fall Times: ≤25 ns
Minimum Internally Leveled RF Pulse Width: ≤100 ns
Minimum Unleveled RF Pulse Width: typically ≤25 ns

Amplitude Modulation
Rates (3 dB BW): DC to 100 kHz
Depth: 0 to 90%
Sensitivity: 100%/V

Frequency Modulation
Modulation Rate (3 dB BW): 50 kHz to 10 MHz
Peak Deviation: The lesser of 10 MHz or
5 × Mod Rate, 0.01 to <7.0 GHz
10 × Mod Rate, 7.0 to <13.5 GHz
15 × Mod Rate, 13.5 to <20.0 GHz
20 × Mod Rate, 20.0 to 26.5 GHz
Sensitivity: either 1 MHz/Volt or 10 MHz/Volt, user selectable.

Ordering Information

	Price
HP 8340B Synthesized Sweeper	$57,500
Opt 001: Front RF Output without Attenuator	less $2,000
Opt 004: Rear RF Output with Attenuator	add $200
Opt 005: Rear RF Output Without Attenuator	less $1,800
Opt 008: 1 kHz Frequency Resolution	less $8,000
HP 8341B Synthesized Sweeper	$39,500
Opt 003: Low Harmonics	add $1,500
Opt 004: Rear RF Output with Attenuator	add $200

Higher power and other special options are available. Please contact your local Hewlett-Packard sales representative for specifications and ordering information.

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Microwave Instruments Division HP 8341B C06 Information

Data updated: Mon Jan 17 11:45:14 2000

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Special Option Information

PHASE DETECTOR BOARD INPUTS TO BACK PANEL

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  Status: Obsolete
Division: MID (5320)
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Detailed Description

THE 8341B OPTION C06 IS A STANDARD 8341B THAT HAS EXTERNAL PHASE LOCK CAPABILITIES ADDED TO IT. THIS OPTION ALLOWS THE USER ACCESS TO THE PHASE DETECTOR BOARD INPUTS THROUGH CONNECTORS, IF INPUT AND REF INPUT AND ACCESS TO THE A8 OSCILLATOR THROUGH REAR PANEL CONNECTOR (3.7 GHz OUTPUT). THIS OPTION ALSO REQUIRES THE ADDITION OF A SPECIAL 3.7 GHz MODULATOR TO MAINTAIN LEVELING CONTROL IN BAND 0. THE 8341B-C06 OPERATES AS A STANDARD 8341B WHEN THE IF OUTPUT TO IF INPUT, THE REF OUTPUT TO REF INPUT AND THE 3.7 GHz IN TO 3.7 GHz OUT JUMPERS ARE INSTALLED ON THE REAR PANEL.

Documentation

Online documentation for the 8341B.C06 is currently unavailable.

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Microwave Instruments Division HP 8341B C07 Information

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Special Option Information

SPECIAL SIDE PANELS AND BOTTOM COVER FOR SLIDE RACK MOUNTING

Status: Obsolete
Division: MTD (5320)

Detailed Description

THE 8341B OPT C07 IS A STANDARD 8341B WITH RECESSED SIDE COVERS AND A SPECIAL BOTTOM COVER (PERFORATED). THE RECESSED HANDLE SIDE COVERS ALLOW THE MOUNTING OF SLIDES TO THE 8341B. THE SPECIAL BOTTOM COVER PROVIDES ADDITIONAL AIR FLOW TO COMPENSATE FOR RESTRICTED AIR FLOW THROUGH THE RIGHT SIDE COVER. IN ALL OTHER RESPECTS THE 8341B-C07 IS IDENTICAL TO THE STANDARD 8341B.

Documentation

Online documentation for the 8341B.C07 is currently unavailable.

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http://mktwww.sr.hp.com/cgi-bin/Specials/SpecialDisplay/14/8341B.C07

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Microwave Instruments Division HP 8341B E69 Information

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Special Option Information

CIIL COMPATIBILITY

Status: Obsolete
Division: MID (5320)

Detailed Description

THE 8341B OPTION E69 IS A STANDARD 8341B THAT HAS ADDITIONAL SOFTWARE ADDED TO ALLOW CIIL COMPATIBILITY. IN ALL OTHER RESPECTS THE 8341B-E69 IS IDENTICAL TO A STANDARD 8341B.

Documentation

Online documentation for the 8341B.E69 is currently unavailable.

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http://mktwww.sr.hp.com/cgi-bin/Specials/SpecialDisplay/14/8341B.E69

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Microwave Instruments Division HP 8341B H12 Information

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Special Option Information

INCREASED OUTPUT POWER (RETAINS STEP ATTENUATOR)

Status: Obsolete
Division: MID (5320)

Detailed Description

THE 8341B OPTION H12 IS A STANDARD 8341B WITH INCREASED OUTPUT POWER.
IN ALL OTHER RESPECTS, IT IS IDENTICAL TO THE STANDARD 8341B.

>>> THE 8341B OPTION H12 IS NOT COMPATIBLE WITH OPTION 003. <<<

SPECIFICATION CHANGES:

MAXIMUM OUTPUT POWER (CW MODE WITH PEAKING ON)

FREQUENCY	OPTION COMBINATIONS H12	H12/004
2.3 - <13.5 GHz	12.0 dBm	11.0 dBm
13.5 - 18.6	11.5	10.0

Documentation

Online documentation for the 8341B.H12 is currently unavailable.

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http://mktwww.sr.hp.com/cgi-bin/Specials/SpecialDisplay/14/8341B.H12

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