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3.3 GHz Portable Spectrum Analyzer

HM5033



HAMEG[®]
Instruments

Specifications of HM5033

Frequency section

Frequency range	50 kHz to 3.3 GHz
Center frequency	
– Setting resolution	100 kHz, allows Rotary encoder, numeric key and function key
– Accuracy (kHz)	within $\pm(30 + 100 \times t) \pm 1$ dot t: Sweep time (s) (frequency span: 200 kHz to 10 MHz, RBW: 30 kHz, 23 °C ± 5 °C) within $\pm(100 + 700 \times t) \pm 1$ dot t: Sweep time (s) (frequency span: 20 MHz to 3.3 GHz, RBW: 100 kHz, 23 °C ± 5 °C)
– RBW frequency error	within $\pm 6\%$ of RBW (RBW: 3 kHz, 30 kHz) within $\pm 30\%$ of RBW (RBW: 100 kHz to 3 MHz)
Frequency span	
– Setting range	0 Hz (zero span), 200 kHz to 2 GHz (1-2-5 step) and 3.3 GHz (full span)
– Accuracy (kHz)	within $[\pm 3\% (20 \times t)] \pm 1$ dot (frequency span: 200 kHz to 10 MHz, 23 °C ± 5 °C) within $[\pm 3\% (200 \times t)] \pm 1$ dot (frequency span: 20 MHz to 3.3 GHz, 23 °C ± 5 °C) t: Sweep time (s)
Display resolution	LCD: Frequency span/250 PC Monitor (max.): Frequency span/1000 (via RS-232C)
Display dot number	LCD: 251 dots, PC Monitor (max.): 1001 dots (via RS-232C) (The unit displays data as 251 horizontal dots, but it internally captures the signal as 1001 dots)
Resolution bandwidth	3 dB bandwidth
– Setting range	3 kHz to 3 MHz (1-3 step) and AUTO
– Accuracy	within $\pm 20\%$
– Selectivity	1 : 12 (typical, 3 dB : 60 dB)
Video bandwidth	100 Hz to 300 kHz (1-3 step), OFF and AUTO
SSB phase noise	–90 dBc/Hz (typical, 100 kHz offset, RBW: 3 kHz, VBW: 100 Hz, Sweep time: 0.3 s)
Spurious response	less than –60 dBc
Harmonics	less than –40 dBc (50 kHz to 100 MHz) less than –45 dBc (100 MHz to 3.3 GHz)

Amplitude section

Reference level	
Setting range	+10 to –60 dBm (1 dB step)
Accuracy	within ± 0.8 dB ± 1 dot (center frequency: 100 MHz, RBW: 3 MHz, VBW: OFF, ATT: 0 dB, 23 °C ± 5 °C)
Unit	dBm, dBV, dBmV, dB μ V, dB μ V/m, dB μ A/m (dB μ V/m and dB μ A/m is used as the measuring function)
Average noise level	–110 dBm (typical, center frequency: 100 MHz, RBW: 3 kHz, VBW: 100 Hz)
Frequency Characteristic	within ± 2.0 dB ± 1 dot (50 kHz to 100 MHz) within ± 1.0 dB ± 1 dot (100 MHz to 3.3 GHz)
Input impedance	50 Ω
Input VSWR	less than 2.0
Input attenuator	
– Operating range	0 to 25 dB (1 dB step), coupled with reference level
– Switching error	within ± 0.6 dB
RBW switching error	within ± 0.6 dB
Display resolution	0.4 dB (10 dB/div), 0.08 dB (2 dB/div)
Display dot number	200 dots
Display scale	
– Scale	10 dB/div, 2 dB/div
– Accuracy	within ± 0.2 dB / 2 dB ± 1 dot within ± 0.8 dB / 10 dB ± 1 dot within ± 1.6 dB / 70 dB ± 1 dot
Input damage level	+20 dBm (CW average power), 25 VDC

Sweep section

Sweep time	
– Setting range	10 ms to 30 s (1-3 step, frequency span: 0 to 2 GHz) and AUTO 30 ms to 30 s (1-3 step, frequency span: full span) and AUTO
– Accuracy	within $\pm 0.1\%$ ± 1 dot (frequency span: 0 to 2 GHz) within $\pm 1.5\%$ ± 1 dot (frequency span: full span)
Trigger mode	AUTO (frequency span: zero span)
Detection mode	Positive peak, Negative peak, Sample (When sweep time is 10 ms or 30 ms, only Sample can be set)

Functions

Marker	NORM: displays frequency (7 digits max) and level (4 digits max) at marker point. DELTA: displays differential frequency and level between 2 markers.
Peak search	NORM: searches a peak point within 10 div. Available NEXT peak (10 max). ZONE: searches a peak point within a zone designated by center and width. Marker moves to a peak point each sweep.
Calculation	NORM, MAX HOLD, MIN HOLD, AVERAGE, OVER WRITE MAX/MIN HOLD: 2 to 1024 times, AVERAGE: 2 to 256
Measuring	Channel power, Adjacent channel leakage power, Occupied frequency bandwidth, Electric field strength (optional antenna), Magnetic field strength (optional magnetic field probe) measurement.
AUTO tuning	When pushing AUTO TUNE key, the maximum level spectrum within 3.3 GHz bandwidth is adjusted to center, and reference level, RBW, VBW and sweep time are adjusted to optimum values.
Save/Load	
– Save	Saves 100 traces and 100 setups
– Load	Loads 1 trace and 1 setup

General

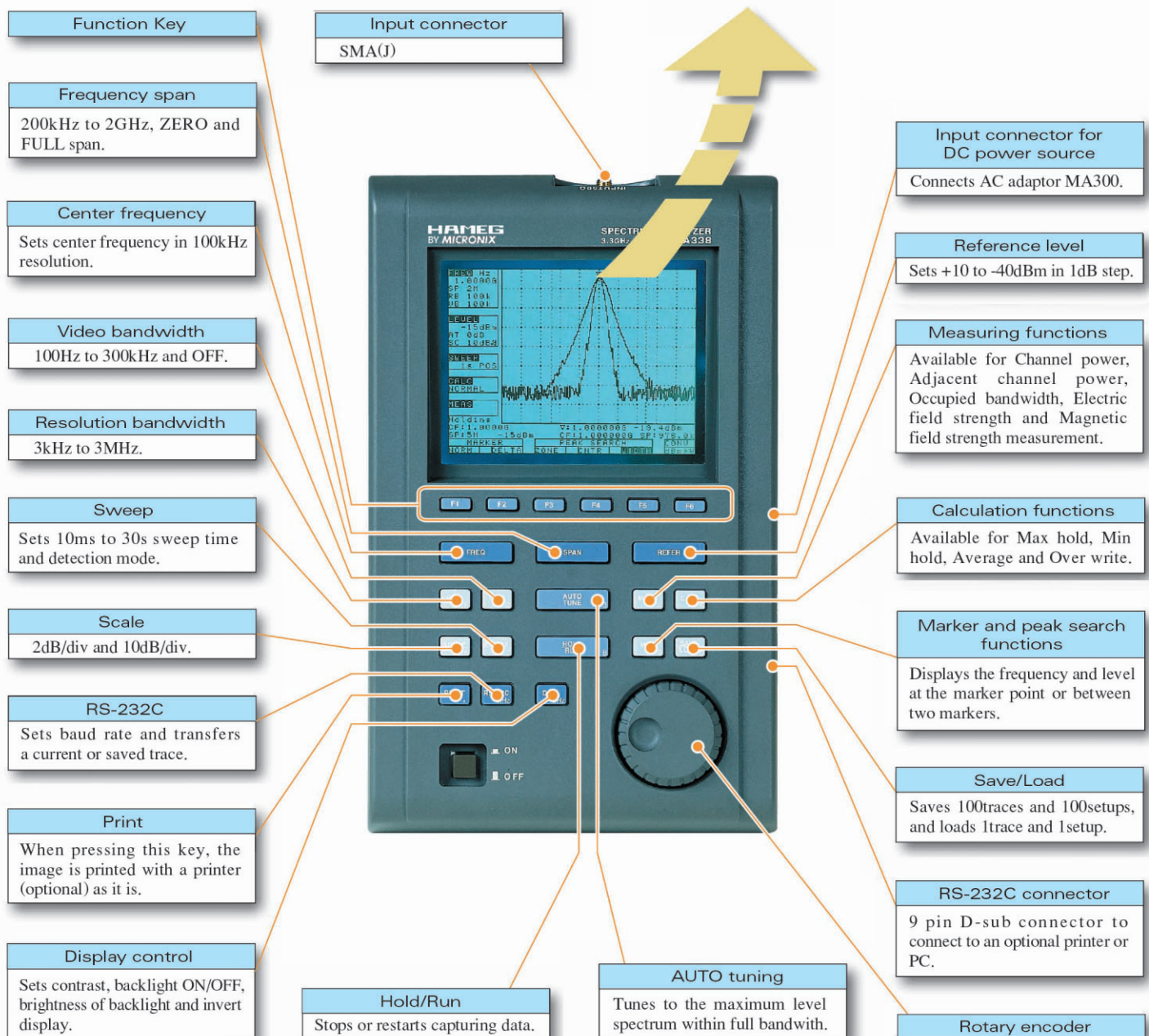
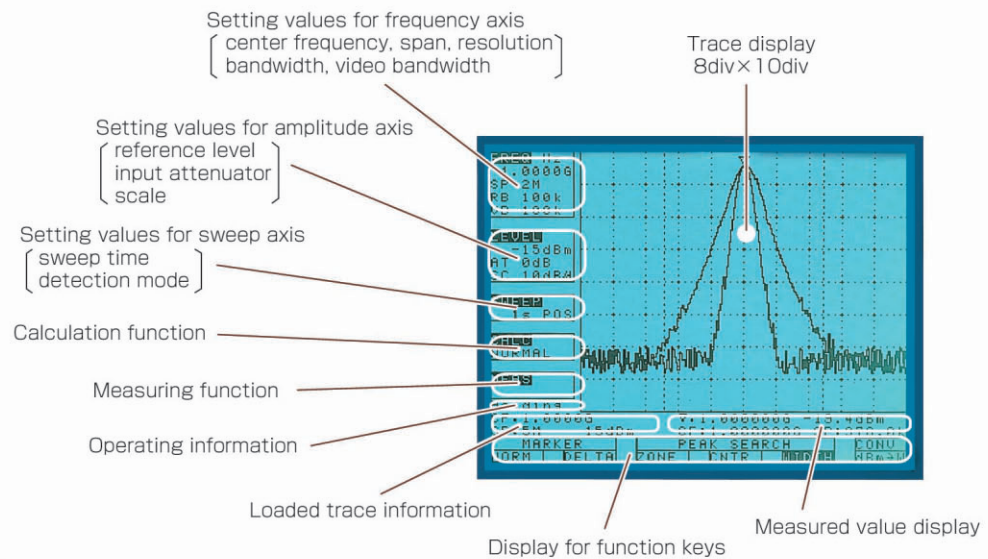
Input connector	SMA(J)
Communication	
– Interface	RS-232C
– Baud rate	2400 to 38400 bps
Hard copy	Allows direct hard copy with an optional printer.
Display	
– Display	LCD
– Backlight	CFL backlight
– Resolution	320 (H) x 240 (V) dots
Power source	
– Battery	Ni-MH battery (optional)
– External DC source	Pin jack, DC5V/4A

Other

Operating temperature	0 °C to 40 °C (Guaranteed at 23 °C ± 10 °C, without soft carrying case)
Operating humidity	less than 40 °C / 80% RH (Guaranteed at less than 33 °C / 70% RH, without soft carrying case)
Storage temperature	–20 °C to 60 °C, less than 60 °C / 70% RH
Dimensions (WxHxD)	162 x 70 x 260 mm (exclude projections and stand)
Weight	approx. 1.7 kg (include battery), approx. 1.5 kg (without battery)

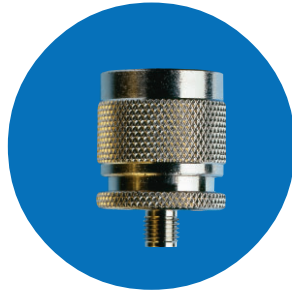
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Definitive edition of handy type spectrum analyzer

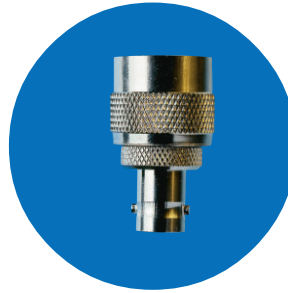


The new 3,3 GHz Spectrum Analyzer HM5033 incl. the below mentioned accessories

Standard



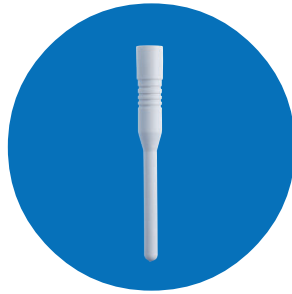
HZ19
Adapter SMA-jack
to N-plug



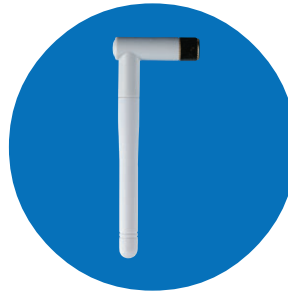
HZ21
Adapter N-plug
to BNC-jack



HZ29
Adapter N-jack
to SMA-jack



HZ521
Sniffer-antenna
with SMA-plug



HZ522
Sniffer-antenna
with SMA-plug



HZ37
Cable SMA-plug
to SMA-plug (length 40 cm)



AC adaptor HM5033



Soft carrying case HM5033



Ni-MH battery HM5033

Optional



Software CD MAS300 1.03C
for Microsoft® WIN 95, WIN 98,
Me, 2000 and XP

HAMEG®

Instruments

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