

Test Equipment Solutions Datasheet

Test Equipment Solutions Ltd specialise in the second user sale, rental and distribution of quality test & measurement (T&M) equipment. We stock all major equipment types such as spectrum analyzers, signal generators, oscilloscopes, power meters, logic analysers etc from all the major suppliers such as Agilent, Tektronix, Anritsu and Rohde & Schwarz.

We are focused at the professional end of the marketplace, primarily working with customers for whom high performance, quality and service are key, whilst realising the cost savings that second user equipment offers. As such, we fully test & refurbish equipment in our in-house, traceable Lab. Items are supplied with manuals, accessories and typically a full no-quibble 2 year warranty. Our staff have extensive backgrounds in T&M, totalling over 150 years of combined experience, which enables us to deliver industry-leading service and support. We endeavour to be customer focused in every way right down to the detail, such as offering free delivery on sales, covering the cost of warranty returns BOTH ways (plus supplying a loan unit, if available) and supplying a free business tool with every order.

As well as the headline benefit of cost saving, second user offers shorter lead times, higher reliability and multivendor solutions. Rental, of course, is ideal for shorter term needs and offers fast delivery, flexibility, try-before-you-buy, zero capital expenditure, lower risk and off balance sheet accounting. Both second user and rental improve the key business measure of Return On Capital Employed.

We are based near Heathrow Airport in the UK from where we supply test equipment worldwide. Our facility incorporates Sales, Support, Admin, Logistics and our own in-house Lab.

All products supplied by Test Equipment Solutions include:

- No-quibble parts & labour warranty (we provide transport for UK mainland addresses).
- Free loan equipment during warranty repair, if available.
- Full electrical, mechanical and safety refurbishment in our in-house Lab.
- Certificate of Conformance (calibration available on request).
- Manuals and accessories required for normal operation.
- Free insured delivery to your UK mainland address (sales).
- Support from our team of seasoned Test & Measurement engineers.
- ISO9001 quality assurance.

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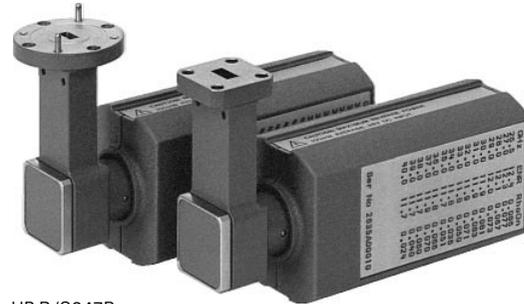
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HP 346A, 346B, 346C



HP R/Q347B

HP 346A
HP 346B
HP 346C
HP R347B
HP Q347B

HP 346A/B/C Broadband Noise Sources

The ideal companion to HP's noise figure meter and systems is the HP 346 family of noise sources. Since they are broadband (10 MHz to either 18 or 26.5 GHz), they eliminate the necessity for several sources at different frequency bands. Each source has individually-calibrated ENR values at specific frequencies. The calibration is printed on its label (see illustration) for easy loading into the HP 8970B. The low SWR of each noise source reduces a major source of measurement uncertainty—reflections of test signals. In addition, the variety of available connectors reduces the need for degrading accuracy with connector adapters.

The HP 346 family of noise sources are designed for a broad range of measurement applications. The HP 346C covers the broadest frequency range—10 MHz to 26.5 GHz. The HP 346B's high ENR, low SWR, and variety of connectors make it a general-purpose noise source. The HP 346A is designed especially for accurate characterization of input-impedance-sensitive devices (like GaAsFETs and many UHF amplifiers). Its very small change in reflection coefficient (<0.01) from ON to OFF minimizes errors when measuring noise figure and gain as a function of input impedance.

HP 346A/B/C Partial Specifications

(See Technical Data Sheet for complete specifications.)

Frequency Range:

HP 346A/B: 10 MHz to 18 GHz

HP 346C: 10 MHz to 26.5 GHz

Excess Noise Ratio (ENR) Limits:

HP 346A: 5 to 7 dB

HP 346B: 14 to 16 dB

HP 346C: 12 to 16 dB (10 MHz to 12 GHz) and 14 to 17 dB (12.0 to 26.5 GHz)

Maximum SWR (reflection coefficient) On and Off:

HP 346A/B: 10 to 30 MHz – 1.3 (0.13); 30 to 5000 MHz – 1.15 (0.07); 5 to 18 GHz – 1.25 (0.11)

HP 346C: 10 MHz to 18 GHz – 1.25 (0.11); 18 to 26.5 GHz – 1.35 (0.15)

Power Required: 28 ±1 Vdc

Size: 21 mm W x 140 mm H x 30 mm D (0.8 in x 5.5 in x 1.2 in)

Weight: net, 0.108 kg (3.5 oz); shipping, 0.5 kg (1 lb)

Standard Connector: APC-3.5 (male)

HP 346C Option K01 Broadband Noise Source

This coaxial noise source features coverage from 1 to 50 GHz with the 2.4-mm coaxial connector. ENR is nominally 20 dB at 1 GHz and 7 dB at 50 GHz. Contact Hewlett-Packard for technical specifications.

HP 346B Option H01 High ENR Noise Source

The HP 346B Option H01 has high ENR (21 dB typical), suitable for measuring high noise figure devices. Contact Hewlett-Packard for technical specifications.

HP 346B Option H42 DBS Noise Source

The 346B Option H42 was developed especially to test low noise block converters (LNB) used for Direct Broadcast Satellite (DBS). WR75 waveguide output, 5 dB ENR, low ENR calibration uncertainty, and low SWR improve the noise figure measurement accuracy of DBS LNBs. Contact HP for technical specifications.

HP R347B and Q347B Noise Sources Partial Specifications

(See Technical Data Sheet for complete specifications.)

Frequency Range:

HP R347B: 26.5 to 40 GHz

HP Q347B: 33 to 50 GHz

Excess Noise Ratio (ENR) Range:

HP R347B: 10 to 13 dB

HP Q347B: 10 to 13 dB (33 to 42 GHz); 6 to 12.5 dB (42 to 50 GHz)

Maximum SWR (reflection coefficient):

HP R347B: <1.42 (0.17)

HP Q347B: <1.57 (0.22)

Key Literature

HP 346A/B/C Broadband Noise Sources Technical Data, p/n 5953-6452

Ordering Information

HP 8970B Noise Figure Meter

Opt 020 2047 MHz Upper Frequency

Opt 907 Front-Panel Handle Kit (5061-9689)

Opt 908 Rackmounting Flange Kit (5061-9677)

Opt 909 Both Options 907 and 908 (5061-9683)

Opt 915 Service Manual (08970-90023)

Opt 916 Additional Operating Manual (08970-90048)

Opt 700 External Mate Translator

Opt W30 Extended Repair Service

Opt W32 Calibration Service

HP 8971C Noise Figure Test Set

Opt 001 Add L.O. Power Amplifier

Opt 002 Delete RF Preamp

Opt 907 Front-Panel Handle Kit (5062-3988)

HP 8970S Noise Figure Measurement System

HP 8970V Noise Figure Measurement System

(10 MHz to 20 GHz)

Opt W30 Extended Repair Service

Opt W32 Calibration Service

HP 346A Noise Source

Opt 001 Type-N (male) Connector

Opt 002 APC-7 Connector

Opt 004 Type-N (female) Connector

Opt 910 Extra Operating Manual

Opt W30 Extended Repair Service

Opt W32 Calibration Service

HP 346B Noise Source

Opt 001 Type-N (male) Connector

Opt 002 APC-7 Connector

Opt 004 Type-N (female) Connector

Opt H01 High ENR

Opt H42 DBS Noise Source

Opt 910 Extra Operating Manual

Opt W30 Extended Repair Service

Opt W32 Calibration Service

HP 346C Noise Source

Opt 910 Extra Operating Manual

Opt W30 Extended Repair Service

Opt W32 Calibration Service

HP 346C Opt K01 Noise Source

HP R347B Noise Source

HP Q347B Noise Source