

Specifications

Transmitter and Receiver Specifications

	Transmitter Frequency
Range	20 Hz to 110 kHz
Resolution	1Hz
Accuracy	± 0.01%
Distortion	<40 Hz to 100 Hz < 30 dB @ 0dBm 100 Hz to 3 kHz < 50 dB @ 0 dBm 3 kHz to 110 kHz < 40 dB @ 0 dBm
Stepping	1, 10, 100, 1000, 10 kHz, 100 kHz
Direct Entry	Via numeric keypad
Sweep Mode	Programmable start/stop frequency with the ability to set time duration and step size.
Gain Slope:	3 to 16 programmable frequencies
SF Skip	2130 Hz to 2430 Hz
	Transmitter Level
Range	- 40 dBm to + 13 dBm
Resolution	0.1 dB
Stepping	0.1, 1, 10 dB
Flatness	@ 600 ohms

Level (dBm)	+13		± 0.2	± 0.2	± 0.5	± 0.5	± 1.0	
	+10		± 0.2	± 0.2	± 0.5	± 0.5	± 1.0	
	0	± 1.0	± 0.2	± 0.2	± 0.5	± 0.5	± 1.0	
	-40							
		40	200	4k	15k	50k	85k	110k
								Frequency (Hz)

Receiver Frequency Measurement

- Range** 20 Hz to 110 kHz
- Resolution** 1 Hz
- Accuracy** 20 Hz to 20 kHz ± 0.01% ± 1 count
20 kHz to 110 kHz ± 0.015% ± 1 count

Receiver Level Measurement

- Range** -60 dBm to +13 dBm
- Resolution** 0.1 dB
- Accuracy** @ 600 ohms

Level (dBm)	+13		± 0.2	± 0.2	± 0.5	± 0.5	± 1.0	
	+10		± 0.2	± 0.2	± 0.5	± 0.5	± 1.0	
	0	± 1.0	± 0.2	± 0.2	± 0.5	± 0.5	± 1.0	
	-40							
	-60	± 1.5	± 0.5	± 0.5	± 1.0	± 1.0	± 1.5	
		40	200	4k	15k	50k	85k	110k
								Frequency (Hz)

- Detector** Averaging
Relative 0 dB setting
Relative TLP setting

Input/Output

RS-232C Port

Configured as DCE for printer output

30 pin conn.

For user application pack option

Connectors

- mini 310 (bantam) for 2W transmit
- mini 310 (bantam) for 2W receive
- banana jack for circuit ground
- RJ11 for butt-in set

Cables

- 2 mini 310 (bantam) to balanced CF
- RJ11 breakout block

Max. DC blocking

- 200V

Impedance/Termination

Transmit 100, 150, 600, 1200 Ohms

Receive 150, 600, 900, 1200 ohms, bridged

Normal/Reverse Switching **Hold Circuits**
Transmit or Receive

electronic, 50 ma draw each

Dial Mode /internal
Pulse dialing

Dial Mode/external
RJ11 jack for external butt in

Bridging Loss < 0.2 dB from 200 Hz to 25 kHz

Return Loss-Receiver Return Loss \geq 30 dB 200 Hz -> 80kHz @ 150 ohms
200 Hz -> 15 kHz @ 600 ohms
500 Hz -> 10 kHz @ 900 ohms
500 Hz -> 8 kHz @ 1200 ohms

Return Loss-Transmitter Return Loss \geq 30 dB 300 Hz -> 3400 Hz @ 100 ohms
300 Hz -> 6 kHz @ 150 ohms
300 Hz -> 60 kHz @ 600 ohms
300 Hz -> 15 kHz @ 1200 ohms

Longitudinal Balance

> 80 dB at 60 Hz

> 70 dB at 540 Hz

> 60 dB at 4 kHz

decreasing 6 dB per octave to 20 kHz

Monitor

Adjustable speaker volume for listening to transmit or receive, switchable.

Power Supply and Requirements

	AC Adapter
Input	220VAC 50 Hz, 19W Output
Output	10VDC 1.5Amp

Batteries

	Nicad
	rechargeable
	~ 1.25 hours operation
unit off	~ 16 hours recharge cycle
unit on	~ 50 hours recharge cycle

Size & Weight

23.0 cm x 12.5 cm x 9.0 cm
2.15 kg

Operating Conditions

Temperature

0 to 40 degrees Celsius

Humidity

10 % to 90 % relative humidity, noncondensing

Test Mode Parameters

	Noise Measurement
Range	-90 dBm to +10dBm
Resolution	1 dB
Accuracy	-70dBm to + 10dBm \pm 1 dB -90dBm to -70dBm \pm 2 dB
Filters	Psophometric, 3.1K, 15K, 275Hz to 3250Hz, sound, 50Kbit, speech
Detector	true RMS quasi-peak (for sound-programme filter only)

Noise (with Tone, only if notch filter is selected)

Range	-80dBm to +10dBm
Resolution	1 dB
Accuracy	-70dBm to + 10dBm \pm 1 dB -80dBm to -70dBm \pm 2 dB

Notch Filter

995 Hz to 1025 Hz

> 50 dB rejection

Detector	true RMS quasi-peak (for sound-programme only)
Loss of Tone	<-46 dBm

Noise to Ground Measurement

Range	-50dBm to +40dBm
Resolution	1 dB
Accuracy	\pm 2dB

Filters

Psophometric, 3.1K, 15K, 275Hz to 3250Hz, sound, 50Kbit, speech

Detector	true RMS quasi-peak (for sound-programme only)
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Signal to Noise Ratio Measurement

Signal Level Range	- 40 dBm to + 13 dBm
Ratio Range	10 dB to 45 dB
Resolution	1 dB
Notch Filter	995 Hz to 1025 Hz and 1780 Hz to 1820 Hz > 50 dB rejection switched in for noise level measurement switched out for signal level measurement

Filters

Psophometric, 3.1K, 15K, 275Hz to 3250Hz, sound, 50Kbit, speech

Detector	averaging for signal level measurement true RMS for noise level measurement
Loss of Tone	<-46 dBm

Impulse Count Measurement

Filters	Psophometric, 3.1K, 15K, 275Hz to 3250Hz, sound, 50Kbit, speech
Mid Threshold Range	-60dBm to +10dBm
Resolution	1 dB
Accuracy	± 1 dB
Low Threshold	-3 dB above mid threshold
High Threshold	+ 3 dB above mid threshold
Dead Time	125 ms ± 25 ms
Count Timer	1 to 60 minutes or continuous
Count Range	0 to 9999

Impulse Count with Tone (only if notch filter is selected)

Signal Range	- 40 dBm to + 13 dBm
Mid Threshold Range	-60dBm to +10dBm
Resolution	1 dB
Accuracy	± 1 dB
Low Threshold	-3 dB above mid threshold
High Threshold	+ 3 dB above mid threshold
Dead Time	125 ms ± 25 ms
Count Timer	1 to 60 minutes or continuous
Count Range	0 to 9999
Interruptions Threshold	-6dB, -10dB
Dropout Count	0 to 9999
Guard Interval	4 ms
Notch Filter	995 Hz to 1025 Hz > 50 dB rejection
Loss of Tone	<-46 dBm

Notes

All dB values are relative to the received value at 1.020kHz.

(+) denotes loss with respect to 1.020kHz

(-) denotes gain with respect to 1.020kHz

For specific parameters on the lines being tested, refer to the Technical Reference Publications provided by your PTT or other common carrier.

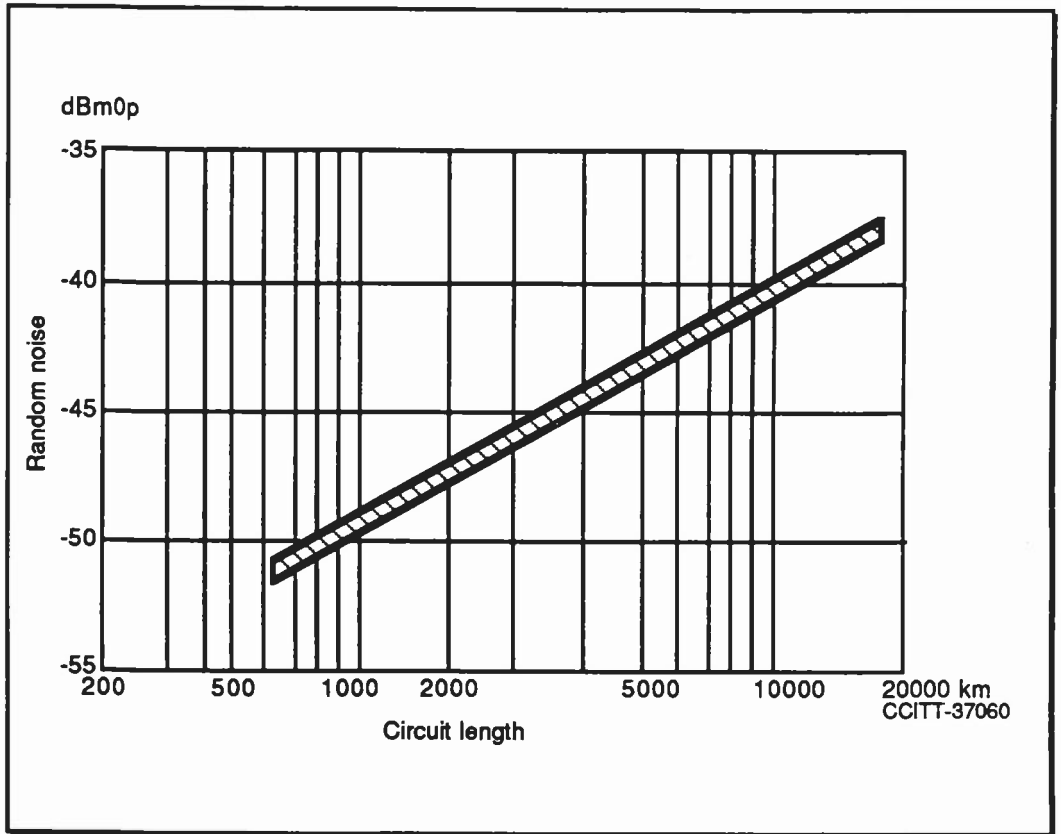


Figure 30. Random noise circuit performance (CCITT H.12)