10.0 SPECIFICATIONS

GENERAL

Impedances: (Terminated)	135 ,600 ,900 others upon request
(Bridging)	>100k ohms
Return Loss:	>40 dB from 200 Hz to 4000 Hz
SF Skip Range:	2450 to 2750 Hz, others on request.
Level Detector Type:	True RMS for noise, average for level.
Dimensions:	5.3"H x 14.4"W x 13.0"D(135mm x 366mm x 330mm)
Weight:	16.4 lbs. (7.3 kg.) approx.
	22.5 lbs. (10.0 kg) with battery - approx.
Operating Temperature:	32 deg. to 120 deg. F (0 deg.to 50 deg.C)
	10 to 98% relative humidity noncondensing
Connectors:	Bantam and RJ11
Power Requirements:	120 /240 VAC ± 10%
	50 to 440 Hz, 40 VA approx.
Holding Tone:	1004 Hz, -50 to 0 dBm and Quiet Termination
	(Other frequencies available on request)
DTMF Generator:	-10 dBm approx.
DTMF Receiver:	-27 dBm minimum acceptable level

TRANSMITTER

Frequency Range:	40 Hz to 150 kHz.
Resolution:	1 Hz
Accuracy:	± 0.1%
Level Range:	-50 to +13 dB at 600 ohm termination
Resolution:	0.1 dB
Accuracy:	at 0.0 dBm, 25 degrees C
	40 Hz to 100 Hz ± 0.25 dB
	100 Hz to 20 kHz ± 0.1 dB
	20 kHz to 110 kHz ± 0.5 dB
	110 kHz to 150 kHz ± 1.0 dB
Step Size:	1, 10, 100, 1000, 10,000 Hz

LEVEL MEASUREMENT

Frequency Range:	40 Hz to 150 KHz.
Level Range:	-70 to +13 dBm
Resolution:	0.1 dB
Accuracy:	at 0.0 dBm, 25 degrees C
	40 Hz to 100 Hz ± 0.25 dB
	100 Hz to 20 kHz ± 0.1 dB
	20 kHz to 110 kHz ± 0.5 dB
	110 kHz to 150 kHz ± 2.0 dB

FREQUENCY MEASUREMENT

Range:	40 Hz to 150 KHz.
Resolution:	1 Hz from 40 Hz to 9999 Hz 10 Hz from 10 KHz to 99 KHz 100 Hz from 100 KHz to 150 KHz
Accuracy:	± 1 Hz

FREQUENCY OFFSET MEASUREMENT

Reference Frequency:	See GENERAL specifications - Holding Tone
Measurement Range:	0.0 to ± 10.0 Hz
Resolution:	0.1 Hz
Accuracy:	± 0.1 Hz

CIRCUIT NOISE MEASUREMENT

Transmitter:	Quiet termination.
Receiver:	
Inherent Noise:	Less than -85 dBm at 600 ohm termination (Transmitter in Quiet Termination and C-message filter enabled.)
Range:	<5 to 100 dBrn (-85 to +10 dBm)
Resolution:	1 dB
Accuracy:	± 1 dB from 10 to 90 dBrn (-80 to 0 dBm) ± 3 dB from 5 to 10 dBrn and > 90 dBrn (-85 to -80 dBm and > 0 dBm)
Filters:	C-Message(C-MESG), 3 kHz Flat(3 KHZ), 15 kHz Flat(15 KHZ), 50 kbit(50 KBIT)

NOISE WITH TONE AND SIGNAL TO NOISE RATIO MEASUREMENT

Holding Tone:	See GENERAL specifications.
Notch:	>50 dB, 995 to 1025 Hz
Filters:	See CIRCUIT NOISE MEASUREMENT
Signal Level Range:	50 to 100 dBrn (-40 to +10 dBm)
S/N Ratio Range:	10 to 50 dB(Limited by Inherent Noise)
Resolution:	1 dB
Accuracy:	± 1 dB with S/N from 10 to 40 dB ± 3 dB with S/N from 40 to 50 dB

NOISE TO GROUND MEASUREMENT

Transmitter:	Quiet termination.
Filters:	See CIRCUIT NOISE MEASUREMENT
Range:	40 to 110 dBrn (-50 to +20 dBm)
Resolution:	1 dB
Accuracy:	+ 1 dB

ENVELOPE DELAY MEASUREMENT

Transmitter	
Reference Frequency	
Range:	300 Hz to 4000 Hz
Carrier Frequency	
Range:	300 Hz to 4000 Hz
Step Size	25 Hz, 50Hz, 100 Hz, 200 Hz, 400 Hz.
Step Rate:	0.2, 0.5, 1, 2, 5 sec / step.
Level Range:	-40 to 10 dBm
Modulation Frequency:	83.33 Hz
Receiver	
Level Range:	-40 to 0 dBm
Measurement Range:	0 to 10,000 microseconds.
Resolution:	5 microseconds
Accuracy:	± 10 microseconds
Modes:	Forward and return reference measurement Forward and return retransmit.

ATTENUATION DISTORTION MEASUREMENT

Transmitter:	See ENVELOPE DELAY SPECIFICATIONS
Receiver	
Signal Range:	-40 to 0 dBm
Measurement Range:	+12 to -20 dB
Plot Range:	+8 to - 12 dB
Resolution:	0.1 dB
Accuracy:	± 0.25 dB
Masks:	SCHED 4 TYPE 4 - Basic, A, B, C, D1 3002, C1, C2, C4, D1 (OTHER MASKS AVAILABLE UP TO A TOTAL OF 12)

PHASE JITTER MEASUREMENT

Transmitter	
Holding Tone:	See GENERAL specifications
Receiver	
Holding Tone Range:	990 Hz to 1030 Hz, -40 to +10 dBm
Jitter Range:	0 to 45 deg.
Resolution:	0.2 deg.
Accuracy:	5% of reading ± 0.2 deg.
Bandwidths:	20 to 300 Hz and 4 to 300 Hz

TRANSIENT MEASUREMENTS

Transmitter

Holding Tone:	See GENERAL specifications.

Receiver

Holding Tone Range:	995 to 1025 Hz, -40 to +10 dBm.
Counter:	0 to 9999
Timer:	1 to 60 min. and continuous
Timer Increment:	1 min.
Qualification Interval:	4 ms (gain and phase hits and dropouts)

Impulse Noise Counting (3 thresholds)

Low Threshold:	30 to 90 dBrn
Threshold Separation:	+1 to +6 dB
Blanking:	125 ms ± 25 ms
Accuracy:	± 1 dB with S/N from 10 to 40 dB
	± 3 dB with S/N from 40 to 50 dB
Filters:	See CIRCUIT NOISE MEASUREMENT

Phase Hit Counting

Threshold:	5 to 45 deg in 1 deg steps.
Accuracy:	5% of setting ± 1.0 deg.
Blanking Time:	125 ms ± 25 MS

Gain Hit Counting

Threshold:	± 1 dB to + 10 dB in 1 dB steps
Accuracy:	± 0.5 dB
Blanking Time:	125 ms ± 25 ms

Dropout Counting

Threshold:	-5 to -25 dB in 1 dB steps
Accuracy:	± 0.5 dB
Blanking Time:	1 sec

NON LINEAR DISTORTION MEASUREMENT*

Transmitter	
Signal:	4 tones as per IEEE 743
Level Range:	-40 to 0 dBm
Resolution:	0.1 dB
Accuracy:	± 0.1 dB
Receiver	
Level Range:	-40 to 0 dB
Distortion Range:	10 to 70 dB below signal level
Measured parameters:	Input Level and 2nd and 3rd order products
Filters:	As per IEEE 743
Resolution:	1 dB
Accuracy:	+ 1 dB

PEAK TO AVERAGE RATIO (P/AR) MEASUREMENT

Transmitter:	
Signal:	Pulse train of 16 tones as per IEEE 743
Level Range:	-40 to 0 dBm
Resolution:	0.1 dB
Accuracy:	± 0.5 dB
Receiver:	
Level Range:	-40 to 0 dBm
P/AR Range	0 to 120 units
Resolution:	1 P/AR unit
Accuracy:	± 2 P/AR units

In the interest of service to the customer, Consultronics reserves the right to change or upgrade the specifications at any time.

* The intermodulation distortion technique is licensed under Hekimian Laboratories, Inc. US Pat. No.3862380.