

## SPECTRUM ANALYZER

## Spectrum Analyzer Protek A133



## Features

- Bench type Spectrum Analyzer
- 8.0 inch TFT color LCD
- Frequency Range : 9KHz to 3 GHz
- Frequency Resolution : Min. 1Hz
- 12 steps Resolution Bandwidth
- Amplitude accuracy : Max 1.5dB
- RS 232/USB (2)/LAN/Printer/Vide/Keyboard/Mouse/GPIB Interface (option)

## Specifications

MODEL	A 133
Frequency	9KHz to 3 GHz
Frequency Resolution	Min 1Hz
Frequency Span	300Hz to 3GHz, Zero Span Full Span
RBW	300Hz to 1MHz, (1-3-5 sequences) Total 12 step
VBW	10Hz to 1MHz (1-3 sequences)
Phase Noise	-100dBC/Hz
Measuring Range	-110dB to 30 dBm
Maximum Input Level	+ 30 dBm
Attenuation	0 to 70 dB ( 5dB step)
Total Level Accuracy	$\leq \pm 1.5$ dB (typical)
Average Noise Floor	-110dBm @ RBW 1kHz
Trigger Mode	Free Run, Line, Video, Ext. TV.
Sweep Mode	Repeat Single, AVG, Peak Hold
Demodulation	AM/FM only Audio Demodulation
RF Input Connector	N type Female, 50Q VSWR <15:1
External Ref. Input	10MHz, BNC Female
Ref. Clock Output	
	RS 232 (D-sub 9pin)
	USB (Plug A) x 2
	LAN
Interface	
Connector type	Printer (D-sub 25 pin)
	Video (VGA 15pin)
	PS2-Keybaord, mouse
	GPIB(option)
Marker	Normal Delta Mode
Unit	dBm, dBmv, dB $\mu$ V, V, mV, $\mu$ V
Trace	Trace (1234)Peak Hold, Average, Freeze, Math
Detection Mode	Auto(normal), Positive, Negative, RMS, Sample, Quasi Peak Mode
Power Measurement	ACPR, OCBW, Channel Power, TOI, Harmonic, Time domain Power
Display	8 inch TFT Color LCD, resolution 800x600
Operating temp.	0 to 50 $^{\circ}$ C (storage Temp.-40 $^{\circ}$ C to 70 $^{\circ}$ C)
Power	100 to 240 VAC, Automatic, Selection 48 to 60Hz
Mass Storage	USB Memory Stick, Internal Flash Memory
Marking	CE, WEEE, RoHS

**Handheld Spectrum Analyzer - Protek 7830 /3290N /3201N /G632 (7830)**

- 100 KHz to 2.9 GHz measurement range
- Measures and demodulates W-FM /N-FM /AM /SSB Signals
- Sweep modes (Free Run, Single Run, Squelch Run)
- 100 Saves and loads for waveforms and settings
- Marker /Delta Marker /Squelch Adjustment Functions
- Peak Search Function
- Marker to Center Function
- Channel Power Measurement Function
- RS 232 Interface



Model	7830	3290N	3201N	G632(7830)
<b>Frequency</b>				
Range	100 KHz to 2900 MHz		100KHz to 2000 MHz	30 MHz to 2.9 GHz
Resolution	3.125 KHz (Multiple of 3.125 KHz)			
Accuracy	TXO: $\pm 3$ PPM, Display $\pm 1.5$ PPM			
Modulation	Wide FM: Approx. 180 KHz (-6dB)			
Bandwidth	Narrow FM: Approx. 12.5 KHz			
	AM / SSB : Approx. 2.4 KHz (-6dB)			
Step Range	6.25 KHz			
Frequency Selection	Start, Stop, Center span setup			
<b>Amplitude</b>				
Measurement Range	-20 dBm to -110 dBm	-45 dBm to -110 dBm		-55 dBm to -65 dBm /5dB steps
Average Noise Level	Wide FM/ AM / SSB: -100 dBm; Narrow FM: -110 dBm			
Amplitude Units	dBm, dBmV, dB $\mu$ V			
Reference Level Accuracy	Wide FM /AM /SSB Typical $\pm 1.5$ dB (20°C ~ 30°C); Narrow FM Typical $\pm 1.5$ dB (25°C)	Wide FM /AM /SSB Typical $\pm 2.0$ dB (20°C ~ 30°C); Narrow FM Typical $\pm 2.0$ dB (25°C)		$\pm 2.0$ dB (Typical-95%) (@20°C to 30°C)
Ref. Level Ranges	0 dBm to -80 dBm			
Log Scale	0.2 dB /div Min. in 0.25 dB steps ( 5 Display Division )			
Internal Atten	10 dB, 20 dB, 30 dB, 35 dB		10 dB	
<b>Sweep</b>				
Speed	Min. 500 m.sec.			
Trigger Source	Narrow FM /Wide FM /AM /SSB			
Trigger Mode	Free Run / Single Run / Continuous Wave /Squeich Run			
Trigger Level	TTL Level			
Marker Modes	Marker /Delta marker / Peak search / Marker to center / Channel Power	Marker /Delta marker / Single Power Meter / Multi Power Meter		
<b>Memory</b>				
Trace Storage / Setup Storage Type	Max 100 Waveforms and 100 States			
<b>Display</b>				
Type	Mono STN LCD			
Display Resolution	192 x 192 pixels			
LCD Backlight	ON / OFF			
<b>Input</b>				
RF Input Connector	N Type Female, 50 Ohms			N Type connector
Max. Input Power	Max +10 dBm, 5V RMS			
<b>Frequency</b>				
Range	35 MHz to 2900 MHz		35 MHz to 2000 MHz	
RF Input Connector				

**SPECTRUM ANALYZER**

<b>General Specifications</b>		
Operation Temperature	0° to 40°C	
Humidity	35 RH to 85 RH	
Storage Temperature	10° to 50°C	
<b>Power</b>		
Power Source	AA type Ni-MH Rechargeable Battery x 6 pcs	
Power Adaptor	SMPS type AC adaptor DC12V, Car adaptor DC 12V	SMPS type AC adaptor DC 12V
Auto Power	OFF / 5 min /10 min /20 min /30 min	
<b>Dimensions and Weight</b>		
Size (W x H x D)	102mm x 229mm x 45mm	60 x 135 x 40 mm
Weight	Aprox. 2.2 lmb / 700 gms (except Antenna)	About 200 gms
<b>Others</b>		
Speaker	0.5W into 8 ohms Speaker	
Antenna	Dipole Antenna (Receive only)	
RS 232C Interface	9600 bps, 19200 bps, 38400 bps, 57600 bps and 115200 bps	RS 232

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