



The result of uniting PROMAX ELECTRONICA's long experience in the design of TV signal analysers with the latest in technological progress, the **PROLINK-4/4C *Premium*** brings together the functions installers seek most, all in one small, light\_weight, portable instrument.

## CONFIGURATION FOR MEASURING LEVEL AND POWER

<b>TUNING</b>	Digital frequency synthesis. Continuous tuning from 5 to 862 MHz and from 900 to 2150 MHz
<b>Tuning modes</b>	Frequency, Channel or Memory. Channel plan configurable on demand
<b>Resolution</b>	
<b>5-862 MHz</b>	50 kHz
<b>900-2150 MHz</b>	500 kHz (span FULL-500-200-100-50-32-16 MHz)
	50 kHz (span 10-5 MHz)
<b>Automatic search</b>	Threshold level selectable
<b>Memory</b>	99 positions for measurement configurations
<b>RF INPUT</b>	
<b>Impedance</b>	75 $\Omega$
<b>Connector</b>	Universal, with BNC or F adapter
<b>Maximum signal</b>	130 dB $\mu$ V
<b>Maximum input voltage</b>	
<b>DC to 100 Hz</b>	50 V rms (powered by the AL-103 power charger)
	30 V rms (not powered by the AL-103 power charger)
<b>5 MHz to 2150 MHz</b>	130 dB $\mu$ V

## LEVEL MEASUREMENT

<b>Measurement range</b>	
<b>Terrestrial TV &amp; FM bands</b>	20 dB $\mu$ V to 120 dB $\mu$ V (10 $\mu$ V to 1 V)
<b>Satellite TV band</b>	30 dB $\mu$ V to 120 dB $\mu$ V (31.6 $\mu$ V to 1 V)
<b>Reading</b>	Auto-range, reading is displayed on an OSD window
<b>Digital</b>	Absolute value calibrated in dB $\mu$ V, dBmV or dBm
<b>Analogue</b>	Relative value through an analogue bar on the screen
<b>Measurement bandwidth</b>	230 kHz (Terrestrial band) + 4 MHz (Satellite band) (maximum band ripple 1 dB).
<b>Audible indicator</b>	LV audio. A tone with pitch proportional to signal strength.
<b>Accuracy</b>	
<b>Sub-band</b>	$\pm 1.5$ dB (30-120 dB $\mu$ V, 5-45 MHz) (22 $^{\circ}$ C $\pm 5$ $^{\circ}$ C)
<b>Terrestrial bands</b>	$\pm 1.5$ dB (30-120 dB $\mu$ V, 48.25-861 MHz) (22 $^{\circ}$ C $\pm 5$ $^{\circ}$ C)
<b>Satellite band</b>	$\pm 1.5$ dB (40-100 dB $\mu$ V, 900-2150 MHz) (22 $^{\circ}$ C $\pm 5$ $^{\circ}$ C)
<b>Overrange indication</b>	$\uparrow$ , $\downarrow$

## MEASUREMENTS IN TV MODE

<b>Terrestrial bands</b>	
<b>Analogue channels</b>	Level, Video-Audio ratio and Carrier-Noise ratio (Auto and Referenced).
<b>Digital channels</b>	Channel power (Auto) and Carrier-Noise ratio (Auto and Referenced).
<b>Satellite band</b>	
<b>Analogue channels</b>	Level and Carrier-Noise ratio (Auto and Referenced)
<b>Digital channels</b>	Channel power (Auto) and Carrier-Noise ratio (Auto and Referenced).
<b>DATALOGGER function</b>	Automatic acquisition of up to 9801 measurements

## SPECTRUM ANALYSER MODE

<b>Satellite band</b>	20 dB $\mu$ V to 120 dB $\mu$ V (10 $\mu$ V to 1 V)
<b>Terrestrial bands</b>	20 dB $\mu$ V to 120 dB $\mu$ V (10 $\mu$ V to 1 V)
<b>Measurement bandwidth</b>	
<b>Terrestrial</b>	50 kHz, 230 kHz, 1 MHz selectable
<b>Satellite</b>	50 kHz, 230 kHz, 4 MHz selectable
<b>Span</b>	
<b>Terrestrial</b>	Full span (full band), 500, 200, 100, 50, 32, 16, 8 MHz selectable.
<b>Satellite</b>	Full span (full band), 500, 200, 100, 50, 32, 16, 10, 5 MHz selectable.
<b>Markers</b>	2 with level, frequency, level difference and frequency difference indications.
<b>Detection</b>	By peak or average.
<b>Measurements</b>	
<b>Terrestrial bands</b>	
<b>Analogue channels</b>	Level and Carrier-Noise ratio (Referenced)
<b>Digital channels</b>	Channel power (Integration method) and Carrier-Noise ratio (Referenced).
<b>Satellite band</b>	
<b>Analogue channels</b>	Level and Carrier-Noise rate (Referenced)
<b>Digital channels</b>	Channel power (Integration method) and Carrier-Noise ratio (Referenced).

## MONITOR DISPLAY

<b>Monitor</b>	TFT colour 5 inches ( <b>PROLINK-4C Premium</b> ) B & W 4 ½ inches ( <b>PROLINK-4 Premium</b> ).
<b>Colour system</b>	PAL, SECAM and NTSC
<b>TV standard</b>	M, N, B, G, I, D, K and L
<b>Synchronism and Burst</b>	Graphic representation over the picture
<b>Spectrum mode</b>	Variable span, dynamic range and reference level
<b>Sensibility</b>	40 dB $\mu$ V for correct synchronism
<b>Synchronism 50/60 Hz</b>	Automatic selection according to the system

## BASE BAND SIGNAL

<b>VIDEO</b>	
<b>External video input</b>	Scart (automatic or selectable)
<b>Sensibility</b>	1 Vpp (75 $\Omega$ ) positive video
<b>Video output</b>	Scart (75 $\Omega$ )
<b>SOUND</b>	
<b>Input</b>	Scart
<b>Outputs</b>	Built in speaker, Scart
<b>Demodulation</b>	AM, FM, TV and NICAM (for PAL B/G, PAL I and SECAM L standards), selectable
<b>De-emphasis</b>	50 $\mu$ s
<b>Subcarrier</b>	Digital frequency synthesis
<b>Variable</b>	From 4 to 9 MHz, 10 kHz resolution
<b>Fixed</b>	
<b>Terrestrial</b>	According to the active standard: 4.50 - 5.50 - 5.74 - 6.00 - 6.26 - 6.50 - AM - FM - LV - OFF.
<b>Satellite</b>	5.80 - 6.50 - 6.65 - 6.80 - 7.02 - LV - OFF

## CONFIGURATION FOR MEASURING DIGITAL PARAMETERS

### TUNING

<b>COFDM</b>	From 40 to 862 MHz.
<b>Resolution</b>	166 kHz (BW = 8 MHz) / 125 kHz (BW = 7 MHz and 6 MHz).
<b>QAM</b>	From 47 MHz to 862 MHz.
<b>Resolution</b>	50 kHz.
<b>QPSK</b>	From 950 MHz to 2150 MHz.
<b>Resolution</b>	500 kHz.
<b>DAB</b>	Terrestrial band – III From 174 to 240 MHz (channels 5A to 13F)
<b>Decoding</b>	Transmission modes 1, 2, 3 and 4 (ETS 300 401)

### LEVEL RANGE

<b>COFDM</b>	45 dB $\mu$ V to 100 dB $\mu$ V.
<b>QAM</b>	45 dB $\mu$ V to 110 dB $\mu$ V.
<b>QPSK</b>	44 dB $\mu$ V to 114 dB $\mu$ V.

**IMPEDANCE**     75  $\Omega$

## MEASUREMENTS

### COFDM

<b>Parameters</b>	BER after Viterbi. BER before FEC (Forward Error Correction). MER selectable and Constellation Diagram. CSI (Channel Status Information) selectable. Qualitative measurement about channel quality. Measures from 0 to 100 %. 0 % value corresponds to maximum quality.
<b>Presentation</b>	Numeric and level bar. Graph (Constellation).

### QAM

<b>Parameters</b>	BER before FEC (Forward Error Correction). MER (Modulation Error Ratio) and Constellation Diagram.
<b>Presentation</b>	Numeric and level bar. Graph (Constellation).

### QPSK

<b>Parameters</b>	BER before FEC. BER after Viterbi. MER selectable.
<b>Presentation</b>	Numeric and level bar.

### WRONG PACKETS

Number of non-correctable packets accumulated during the measurement time, and indicates when the fault was produced. Identification according to levels 1.1, 1.2, 1.3 and 2.1 of TR 101 290 ETSI standard.

### DCI FUNCTION

DVB channel identifier. Provides information on the channel whose BER is being measured.

## COFDM SIGNAL PARAMETERS

<b>Carriers</b>	2k / 8k (Selected by the user).
<b>Guard Interval</b>	1/4, 1/8, 1/16, 1/32 (Selected by the user).
<b>Code Rate</b>	1/2, 2/3, 3/4, 5/6, 7/8.
<b>Modulation</b>	QPSK, 16-QAM, 64-QAM.
<b>Spectral inversion</b>	Selectable: ON, OFF.
<b>Hierarchy</b>	Indicates hierarchy mode.
<b>FEC</b>	Reed-Solomon (204, 188) and Viterbi.

## QAM SIGNAL PARAMETERS

<b>Demodulation</b>	16/32/64/128/256 QAM.
<b>Symbol rate</b>	1000 to 7000 kbauds.
<b>Carrier frequency deviation</b>	$\pm 0.08 \times$ Symbol rate.
<b>Roll-off (<math>\alpha</math>) factor of Nyquist filter</b>	0.15.
<b>Spectral inversion</b>	Selectable: ON, OFF

## QPSK SIGNAL PARAMETERS

<b>Bandwidth IQ signals</b>	Variable: 10 MHz to 30 MHz in 2.5 MHz steps.
<b>Symbol rate</b>	2 to 45 Mbauds.
<b>Carrier frequency deviation</b>	$\pm 0.05 \times$ Symbol rate.
<b>Roll-off (<math>\alpha</math>) factor of Nyquist filter</b>	0.35.
<b>Code Rate</b>	1/2, 2/3, 3/4, 5/6, 7/8 and AUTO.
<b>Spectral Inversion</b>	Selectable: ON, OFF

## VIDEO

<b>Format</b>	MPEG-2 / DVB (MP@ML).
<b>Conditional access types</b>	Common interface, according to available user CAM. (Patent pending). Uncoded FTA standard.

## BASE BAND SIGNAL

<b>Transport Stream</b>	
<b>Interface</b>	DVB-PI
<b>Maximum frequency</b>	50 Mb/s
<b>Output</b>	Parallel LVDS. D-25 Connector
<b>Amplitude (differential)</b>	
<b>Maximum</b>	450 mV.
<b>Minimum</b>	250 mV.
<b>Input</b>	Parallel LVDS. D-25 Connector
<b>Amplitude (differential)</b>	
<b>Minimum</b>	100 mVpp.

<b>TELETEXT</b>	Decodes at 1.5 level
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## RS-232C INTERFACE

### EXTERNAL UNITS POWER

<b>SUPPLY</b>	Through the RF input connector
<b>Terrestrial</b>	External or 13/15/18/24 V
<b>Satellite</b>	External or 13/15/18 V
<b>22 kHz signal</b>	Selectable
<b>Voltage</b>	0.6 V $\pm$ 0.2 V
<b>Frequency</b>	22 kHz $\pm$ 4 kHz
<b>Maximum power</b>	5 W

<b>DiSEqC GENERATOR</b>	According to DiSEqC 1.2 standard
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## POWER SUPPLY

### Internal

<b>Batteries</b>	7.2 V 13 Ah Li-Ion battery
<b>Autonomy</b>	> 2 hours in continuous mode.
<b>Recharging time</b>	4 hours starting of completely discharged (instrument off).

### External

<b>Voltage</b>	12 V
<b>Consumption</b>	51 W
<b>Auto power off</b>	After 15 minutes without operating on any control. Deactivable.

## OPERATING ENVIRONMENTAL CONDITIONS

<b>Altitude</b>	Up to 2000 m
<b>Temperature range</b>	From 5 to 40 °C (Automatic disconnection by excess of temperature).
<b>Max. relative humidity</b>	80 % (up to 31 °C), lineally up to 50% at 40 °C.

## MECHANICAL FEATURES

<b>Dimensions</b>	294 (W) x 106 (H) x 274 (D) mm (without holster)
<b>Weight</b>	5 kg

## INCLUDED ACCESSORIES

1x <b>CB-044</b>	Rechargeable Li+ battery 7.2 V, 13 Ah
1x <b>AD-055</b>	"F"/F-BNC/F adapter
1x <b>AD-056</b>	"F"/F-"DIN"/F adapter
1x <b>AD-057</b>	"F"/F-"F"/F adapter
1x <b>AL-103</b>	External DC charger
1x <b>DC-261</b>	Carrying bag
1x <b>AA-103</b>	Car lighter charger
1x <b>CA-005</b>	Mains cord

## OPTIONAL ACCESSORIES

<b>CI-23</b>	Portable printer
<b>RM-104</b>	Remote control software
<b>RM-204</b>	Monitoring and alarm software
<b>RM-304</b>	Monitoring and alarm system via SMS
<b>RP-050</b>	IF simulator for TCI tests
<b>CV-245</b>	Wi-Fi band converter
<b>TI-125</b>	DC converter to power supply DVB-T antennas