

PROLINK-4/4C *Premium*



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

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

LEVEL MEASUREMENT

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

MEASUREMENTS IN TV MODE

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

SPECTRUM ANALYSER MODE

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

MONITOR DISPLAY

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

BASE BAND SIGNAL

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

CONFIGURATION FOR MEASURING DIGITAL PARAMETERS

TUNING

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

LEVEL RANGE

COFDM	45 dB μ V to 100 dB μ V.
QAM	45 dB μ V to 110 dB μ V.
QPSK	44 dB μ V to 114 dB μ V.

IMPEDANCE 75 Ω

MEASUREMENTS

COFDM

Parameters	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.
Presentation	Numeric and level bar. Graph (Constellation).

QAM

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

QPSK

Parameters	BER before FEC. BER after Viterbi. MER selectable.
Presentation	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

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

QAM SIGNAL PARAMETERS

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

QPSK SIGNAL PARAMETERS

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

VIDEO

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

BASE BAND SIGNAL

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

TELETEXT Decodes at 1.5 level

RS-232C INTERFACE

EXTERNAL UNITS POWER

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

DiSEqC GENERATOR According to DiSEqC 1.2 standard

POWER SUPPLY

Internal

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

External

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

OPERATING ENVIRONMENTAL CONDITIONS

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

MECHANICAL FEATURES

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

INCLUDED ACCESSORIES

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

OPTIONAL ACCESSORIES

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