KATHREIN

Antenna signal meter system

MSK 200/S2 21710024
MSK 200/S2 21710025

CE

The MSK 200/S2 is a compact state-of-the-art signal meter for the inspection of antenna and cable systems or even professional headend systems, which leaves nothing to be desired.

It can be used either in a lab or for the monitoring of remote-controlled headend systems as well as for final measurements on antenna and distribution systems.

Design

- Manageable portable signal meter
- High-resolution 10.4” TFT colour display to graph analogue and digital TV signals and graphics
- Backlight - thus the display is excellently readable even in bright sunlight (typ. 600 cd/m^2)
- User-friendly with 12 hard keys and an infra-red touch screen
- The touch-screen control panels can be adapted to the needs of left and right handers
- Alphanumeric touch-screen keyboard to enter numbers and text
- Shoulder strap that can be adapted in length

MSK 200/S2, Order no. 21710024

- 75 Ω BNC socket as test socket

MSK 200/S2, Order no. 21710025

- 50 Ω N-type socket as test socket

Functions

- MER measurement for all digital modulation types
- BER measurement
- Spectrum analyser with individually selectable start and stop frequencies, centre-frequency entry and span
- Simultaneous representation of spectrum and picture
- Memory oscilloscope
- Constellation analyser for all DVB standards
- MPEG and analogue TV screen
- Demodulation of analogue signals: AM (CATV, terr.), FM (satellite, radio)
- Demodulation of digital signals: DVB-C, DVB-T, DVB-S(2)
- Demodulation of the digital USA standards (J83B, DOCSIS, ATSC)
- Possibility to measure the video amplitude with line selection, S/N weighting and hum measurement
- S/N weighting: typ. 57 dB
- Channel selection in DVB-C, DVB-S, DVB-T and analogue through frequency entry, channel entry and user lists
- Remote-controlled via Ethernet, RS 232 and PCMCIA module [1)]
- Integrated user interface for data processing and office tasks
- Representation of SID, PMT-PID, PCR-PID, CA-Info, elementary current PID, service type (NIT in development)
- Data logging
- Automatic measurements for CTB and CSO (in development)
- Return path measurements
- The results of the memory oscilloscope and the numerical value are shown in large format
- Measures: dBµV, dBm

[1)] When used with MZS 200 remote control software (not included in the scope of delivery)

Signal meters

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Technical data

Type		MSK 200/S2	MSK 200/S2
Order no.		21710024	21710025
Input impedance	Ω	75	50
Spectrum analyser			
Frequency range	MHz	5-3,100	
Resolution bandwidth (-3 dB)	MHz	0.001-10	
Resolution bandwidth (-6 dB)	kHz	9, 25, 50, 120, 200	
Video bandwidths	MHz	0.00001-3	
Phase noise at 10 kHz carrier level spacing	dBc	< -90 (1 Hz), typ. -95 (1 Hz)	
Phase noise at 100 kHz carrier level spacing	dBc	< -100 (1 dB), typ. -110 (1 Hz)	
Dynamic (RBW: 100 kHz)	dB	Typ. 70	
Level measurement range	dBµV	20-130	
Accuracy of measurements	dB	< 1.5	
Measurement detector	dB	Max Peak, min peak, auto peak, sample, RMS	
Return loss (pre-attenuation 5 dB)	dB	> 16 (VSWR: 1.35)	
Repetition speed	Pic./s	Max. 10	
Reference level	dBµV	30-130	
Range of indication	dB	100, 70, 50, 30, 20, 10	
Screen resolution	Pixel	Max. 800 x 600/nominal 501 x 401	
Analogue TV receiver			
Standards		B/G, I, D/K, L/L´, M/N	
Colour standards		PAL, SECAM, NTSC	
Sound standards		IRT-A2, NICAM, BTSC, EIA-J	
Frequency increment	kHz	50	
Video-IF bandwidth		Standard-dependent	
Audio-IF bandwidth		Standard-dependent	
Video output voltage/impedance	V_{ss}/Ω	1/75 ± 1 dB	
Hum measurement	dB	> 50	
S/N weighting (to CCIR Rec. 567)	dB	> 55/typ. 57	
Analogue satellite receiver			
Standard		FM to CCIR Rec. 405	
Colour standards		PAL, SECAM, NTSC	
Sound standards	µs	De-emphasis: 50/Panda-Wegener: 75	
Frequency increment	kHz	200	
Video IF bandwidth	MHz	27/36	
Audio IF bandwidth	kHz	130/380	
Video output voltage/impedance	V_{ss}/Ω	1/75 ± 3 dB	
Hum measurement	dB	> 50	
S/N weighting (to CCIR Rec. 567)	dB	> 55/typ. 60	
Analogue input			
S/N weighting (to CCIR Rec. 567)	dB	Typ. up to 80	

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Technical data

Type		MSK 200/S2	MSK 200/S2
Order no.		21710024	21710025
Input impedance	Ω	75	50
Digital CATV receiver (J83 A, B, C)			
Modulation type		16 QAM, 32 QAM, 64 QAM, 128 QAM, 256 QAM	
Symbol frequency	MHz	2.0-6.999	
Frequency increment	kHz	50	
Video output voltage/impedance	V_{ss}/Ω	1/75 ± 1 dB	
IF bandwidths	MHz	1, 5, 6, 7, 8, 12	
MER measurement	dB	> 35/Typ. 38	
Digital terrestrial TV receiver (DVB-T, ATSC)			
Modulation type		QPSK, 16 QAM, 64 QAM, 8 VSB	
Symbol frequency		Standard-dependent	
Frequency increment	kHz	50	
Video output voltage/impedance	V_{ss}/Ω	1/75 ±1 dB	
IF bandwidths	MHz	1, 5, 6, 7, 8, 12	
MER measurement	dB	> 35	
Digital satellite receiver DVB-S(2)			
Modulation type		QPSK, 8PSK	
Symbol frequency	MHz	2-45.0	
Frequency increment	kHz	200	
IF bandwidths	MHz	8, 18, 27, 36, 54	
Video output voltage/impedance	V_{ss}/Ω	1/75 ± 1 dB	
MER measurement	dB	> 14	
Constellation analysis			
DVB-C		16 QAM, 32 QAM, 64 QAM, 128 QAM, 256 QAM	
DVB-T		QPSK, 16 QAM, 64 QAM	
DVB-S(2)		QPSK, 8PSK	
ATSC		8 VSB	
Memory oscilloscope			
Resolution	Bit	12	
Sampling rate	MHz	54	
Memory depth	Bild	1	
Remote feeding			
Switching voltage/max. current	V/mA	5-20/600	
Control signals	kHz	22, Tone Burst, DiSEqC™ 2.0, SCR single-cable system and UFO®*micro* control signals	
Power supply			
Mains (power supply unit)	V/Hz/W	100-250/50-400/100	
Rechargeable Li-Ion battery	V/Ah	11.1/6.45	
DC external	V	10.8-14.0	

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Type		MSK 200/S2	MSK 200/S2
Order no.		21710024	21710025
Input impedance	Ω	75	50
Connections			
RF input standard (impedance)	Ω	1.6/5.6 (75) Adaptor pre-mounted on BNC	N-type socket (50)
Composite colour picture input/output, RGB output		Scart socket	
Video input/output		2 x BNC socket	
Transport current input/output		2 x Sub D socket (25-pin)	
ASI input/output		2 x BNC socket	
Common Interface/card reader		1/1	
PCMCIA slot		1	
Interconnection		1 x Ethernet	
USB port		2	
External keyboard		PS-2	
External mouse		USB	
Headphone connection	mm	Phone jack 3.5	
Modem interface		RS 232/Mini DIN, 9-pin (socket)	
DC supply 12 V		XLR socket	
General			
Screen		10.4”, TFT, 800 x 600 pixels with backlight	
Touch screen		Infrared	
Temperature range	°C	+5 to +45	
Dimensions (W x H x D)	mm	374 x 294 x 124	
Weight	kg	Approx. 8