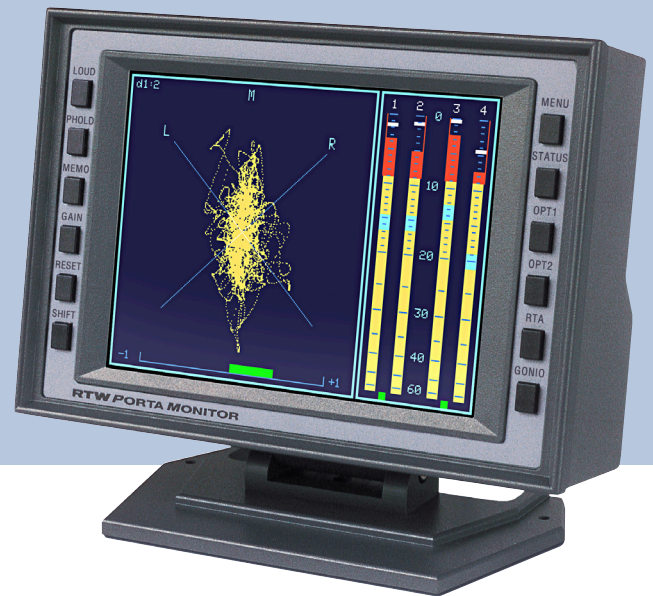


# PortaMonitor X-Serie

## Digital and Analog 2 to 4-Channel Audio Vectorscope with Surround-Display

For monitoring peak level, loudness, correlation, volume and balance of analog and digital signals in mobile or stationary audio applications or other tasks.



- For monitoring levels, phase correlation and spectrum of analog and digital audio signals
- Analog and AES/EBU inputs, digital outputs
- 2-channel or 4-channel Peak Program Meter
- Supports current metering standards, including VU
- Peak value memory, peak hold, loudness indicator and Over detector for all channels
- 2-ch. resp. 4-ch. Audio Vectorscope with phase correlation meters and 2/0 and 3/1 surround display

- Numeric level display
- AES/EBU status monitor
- 31-band real-time analyzer (RTA) with additional PPM
- Color TFT display with brightness control

For direction, outside broadcast units, production or dubbing, for video, audio or other applications, mobile or stationary: the proven X-series PortaMonitor is the ideal instrument for monitoring the level, the loudness, the frequency response and the phase of analog and digital signals. The PortaMonitor supports you to evaluate the main technical aspects of your program that might otherwise not be audible.

### Features

All the units of the X-series PortaMonitor have analog and digital inputs, level displays with peak hold indicators and peak level memory, an audio vectorscope, phase correlation meter and the AES/EBU status monitor.

The numeric dB value display allows precise level adjustment, and you can also meter sum and difference levels. A standard feature of the PortaMonitor always was and still is the loudness

display which is generated by analyzing the two predominant audio signal parameters, frequency and impulse, by applying physiological aspects like taken place in the human ear. Several weighting filters like linear, A, C, CCIR and RTW mode are available.

### Design and Connections

All the units of the PortaMonitor are available as table-top unit or as half-19" plug-in modules for standard 19" rack mount cabinets for waveform monitors. The 2-channel versions have XLR socket connectors for analog and digital signals; the 4-channel models have a 25-pin sub-D connector. An adapter cable for conversion to XLR-F plug connectors is available as an accessory. The units are powered by an external 24 V PSU, which is also available as an accessory.

# RTW

# Specifications:

<b>Functions</b>	
	2 or 4 channels, analog and digital peakmeter, audio vectorscope, AES/EBU status display, numeric display, Digital Over and Mute detection. Real time analyzer (RTA), surround monitor (only available with certain versions, see tables below)
<b>Analog Inputs</b>	
Quantity	2 channels (1 x Stereo) or 4 channels (2 x Stereo), electronically balanced
Maximum input level	+24 dBu
Adjustable range for reading reference	+1 dBu to +16 dBu
CMRR	> 60 dB
Input impedance (30 Hz to 20 kHz)	> 10 k $\Omega$
<b>Digital Inputs</b>	
Quantity	1 (Stereo) or 2 (Stereo), AES/EBU, transformer balanced, 110 $\Omega$ or High-Z
Sampling frequency range	32 kHz - 96 kHz
<b>Digital Outputs</b>	
Quantity	1 (Stereo) or 2 (Stereo), AES/EBU, input signal looped through, unblurred
<b>Peakmeter general</b>	
Level display	Up to 4 channels, Peak Hold indicator selectable, vertical display
Length of bargraph	78 mm
Display modes	2-channel Stereo analog or digital, 2 x 2-channel Stereo analog, digital or mixed, 3.1 Surround, (availability depending on the model, see below)
OP-Field	Operation field below reference: 0 dB to 15 dB in steps of 1 dB
Peak value memory	Peak Memory, Peak Hold
Gain	Digital: +40 dB; quasi analog and analog: DIN, Zoom 2, Zoom 20: +20 dB / British, Nordic: +40 dB
Fall back time	According to selected standard (1,5 s/20 dB for DIN)
Numeric level display	Selectable, shown on the left side of the display
Correlator spot indicator	Switchable
Loudness meter	Additional spot indicator display on the bargraphs of the level display, RTW mode or A-, C-, CCIR-2k weighting, RMS
<b>Peakmeter analog</b>	
Scales	Analog: DIN+5 (-50 to +5 dB), DIN+10 (-50 to +10dB), Nordic (-42 to +12 dB), British 1la (*1" to *7"), 1lb (-12 to +12 dB), VU (-21 to +3 dB), Zoom $\pm$ 1 dB, Zoom $\pm$ 10 dB, smpte20rel (-40 to +20 dB), smpte40abs (-35 to +24 dB)
Reference levels	+6 dBu (DIN+5, DIN+10, Nordic and VU with lead 0 to 10 dB in steps of 1 dB), +8 dBu (British 1la, 1lb)
Integration time	according to standard or selectable values 1 ms or 0.1 ms
<b>Peakmeter digital</b>	
Scales	0 dB FS to -60 dB FS, 0 dB FS to -20 dB FS, 0 dB to +19 dB, -18 dB to +18 dB, +20 dB to -40 dB, +9 dB to 0 dB to -60dB, quasi analog: DIN -5, DIN-10, Nordic, British 1la, 1lb, Zoom 2, Zoom 20
Headroom	Adjustable from -5 dB to -20 dB, selectable in steps of 1 dB
Integration time (Attack)	Digital: Sample, 0.1 ms, 1 ms, 10 ms quasi analog: Norm, Sample, 0.1 ms, 1 ms
DC filter	Off, 5 Hz, 10 Hz, 20 Hz
Peak hold indicator	Integration time same as level display or 1 sample (selectable)
Digital Over indicator	Red spot indicators above each bargraph
Threshold	Full Scale, Full Scale-1LSB, Full Scale-2LSB, -0.1 dB FS, -0.5 dB FS, -1 dB FS, -2 dB FS, -3 dB FS
Attack time	1 - 15 samples
Word length	16 - 24 bit
Mute indicator	Red spot indicators below each bargraph
Threshold	All bits digital "0"
Attack time	50, 100, 200, 300 ms

Instrumentation	Inputs	In/Out	RTA	Surround
1061X	2-CH	XLR-F/XLR-M	Opt	—
1061X-PLUS	2-CH	XLR-F/XLR-M	Opt	—
10611X-VID	2-CH	XLR-F/XLR-M	Opt	—
1062X	2-CH	XLR-F/XLR-M	•	—
1062X-PLUS	2-CH	XLR-F/XLR-M	•	—
10621X-VID	2-CH	XLR-F/XLR-M	•	—
1063X	4-CH	Sub-D-F	Opt	Opt
1063X-PLUS	4-CH	Sub-D-F	Opt	Opt
10631X-VID	4-CH	Sub-D-F	Opt	Opt
1064X	4-CH	Sub-D-F	•	•
1064X-PLUS	4-CH	Sub-D-F	•	•
10641X-VID	4-CH	Sub-D-F	•	•

Threshold	5-80 samples (selectable in steps of 5 samples)				
<b>Audio Vectorscope</b>					
Modes	X/Y or M/S				
Visible area	70 x 70 mm				
AGC	Auto or manual				
Persistence	Fast, medium, slow				
<b>Surround display</b>					
VSC surround modes	3/1, 3/0 or 2/1, display of LF channel in peakmeters only				
AGC	Fast, slow				
Vectorscope refresh rate	Fast, slow				
Indicators	Display of L/R signals, internal calculated or external input				
<b>Phase Meter</b>					
Display mode	Bargraph (horizontal, -1 r to +1 r)				
Attack time	Fast: 1 s, Slow: 2,5 s				
Memory	negative peak correlation, included in Peak Memory				
Memory accuracy	better 0.1 r				
<b>Real Time Analyzer</b>					
Bands/frequency range	31, 1/3-octave, 20 Hz to 20 kHz (IEC-225 ANSI class 2)				
Measuring/display range	selectable: 15 dB, 30 dB, 45 dB				
Integration time	Fast, Medium, Slow, Average or Peak				
Peak hold indicator	switchable, reset after 2.5 s, 4.0 s or manual				
Memory	8 plus peak hold				
Level meter	2-channel, selectable				
<b>AES/EBU Status Monitor</b>					
Status information	locked, decoded AES/EBU status				
Display	hex, binary, active bits, audio bits				
<b>General</b>					
Supply voltage	24 V DC (21 V - 30 V DC)				
Current consumption	260 mA (24 V DC) nominal, switch-on current is considerably higher				
Temperature ranges	Operating: 0° to 45° C, storage: -30° C to +85° C				
<b>Display</b>					
Type	1 color TFT display, 5.7", 320 x 240 pixel, 111 x 83 mm				
<b>Connectors</b>					
2-channel units	3 x XLR-F and 1 x XLR-M sockets, 1 x 15-pin Sub-D-F (Remote)				
4-channel units	2 x 25-pin Sub-D-F sockets, 1 x 15-pin Sub-D-F (Remote)				
DC connector	Type "Binder 710" locking 4-pin low voltage connector				
<b>Design, Dimensions</b>					
Table-top units 106nX/106nX-PLUS	Case: graphite grey semi gloss RAL 7024 scale: front: silver, labelling: black				
Dimensions	176,5 x 125,5 x 61,5 mm (W x H x D without table-stand)				
Weight	approx. 750 g without table-stand, approx. 1050 g with table-stand				
Rack-mount modules 106n1X-VID	Case: graphite grey semi gloss RAL 7024 scale/labelling: grey white				
Dimensions	213,8 x 132,6 x 242,5 mm (W x H x D without mounting adapter)				
Weight	approx. 1200 g				
<b>Items delivered</b>					
106nX:	Table-top unit, DC connector (counter plug) for power supply, operating manual				
106nX-PLUS:	Table-top unit, table-stand, mains adapter, operating manual				
106n1X-VID:	Half-19"/3U plug-in module for standard 19" installation cabinets for waveform monitors, rack-mounting adapters for cases with 407 mm mounting depth, DC connector (counter plug) for power supply, operating manual				
<b>Optional Accessories</b>					
1171-R	wide voltage power supply 90 – 264 V AC/24 V DC				
13719	table stand				
1186	snake cable 25-pin Sub-D-M to XLR-F, 4 m for input connector				
13711	adapter frame for mounting into 190 mm- systems				
13713	Panel mounting kit for front panel cut-outs				

Optional Accessories	1171-R	13719	1186	13711	13713
1061X	•	•	—	•	•
1061X-PLUS	PoD	PoD	—	—	—
10611X-VID	•	—	—	—	—
1062X	•	•	—	•	•
1062X-PLUS	PoD	PoD	—	—	—
10621X-VID	•	—	—	—	—
1063X	•	•	•	•	•
1063X-PLUS	PoD	PoD	•	—	—
10631X-VID	•	—	•	—	—
1064X	•	•	•	•	•
1064X-PLUS	PoD	PoD	•	—	—
10641X-VID	•	—	•	—	—

Technical changes without prior notice! 08/2008

08384.02



RTW GmbH & Co. KG  
 Elbeallee 19 • 50765 Köln • Germany  
 Phone: +49 (0)221 70913-0 • Fax: +49 (0)221 70913-32  
 Internet: www.rtw.de • E-Mail: rtw@rtw.de