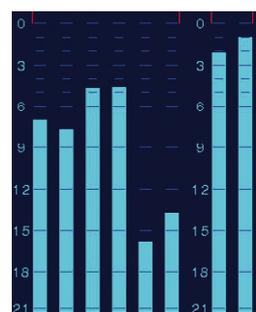
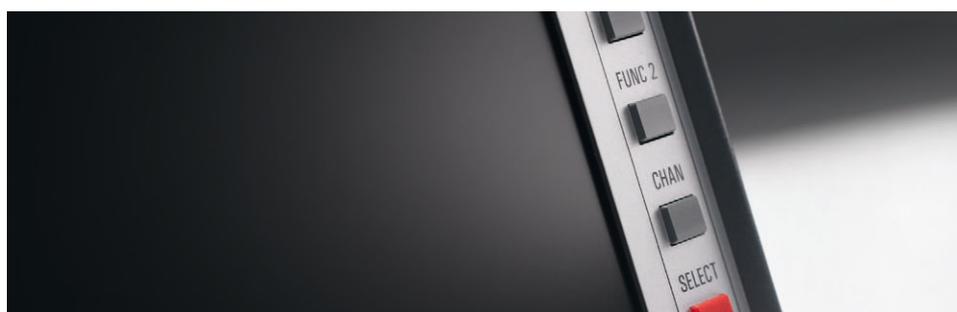


The first choice in digital surround
SurroundMonitor 10600 Series



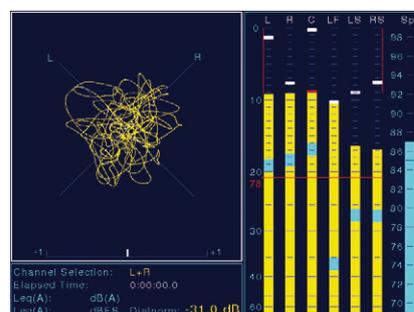
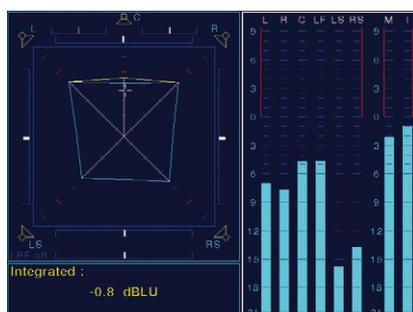
SurroundMonitor 10600 Series



Facts and Figures

Digital 6-Channel Audio Vectorscope with Surround-Sound-Analyzer, PPM and ITU BS.1771 Loudness Meter

For monitoring level, correlation, loudness, volume and balance of DIGITAL surround signals in fully-digital studio environments such as broadcast, pre and post production, music production, mastering or video editing suites and workstations.





- Up to 6-ch. peak level and loudness meters (PPM)
- Additional SPL/Leq bargraph
- ITU BS.1771 Loudness Meter for stereo and 5.1 surround
- Selectable pair of additional bargraphs for display of momentary, integrated and longterm loudness values
- Easy toggle between PPM and Loudness Meter via programmed presets
- Surround Sound Analyzer for 3/1 and 5.1 formats
- Sound balance and overall volume displays
- Center presence and phantom sound source indicators
- 10-fold correlator display with low-frequency analysis
- 2 channel real-time audio vectorscope
- 31-band audio spectrum analyzer for individual channels or channel groups
- AES3 status monitor
- Dialnorm measurement
- Stopwatch
- Numerical level display
- Remote control Interface
- VGA output for optional external VGA displays

Audio monitoring in digital environments

The SurroundMonitor was especially designed for monitoring DIGITAL stereo, multi-channel and surround audio signals. Being available as table-top unit (10600-PLUS) or half-19" plug-in module (10660-VID) for the installation next to other instruments in a video rack, the SurroundMonitor meets the requirements of even the most demanding studio engineers.

Features

The SurroundMonitor features comprehensive display capabilities for digital Stereo, Multi-Channel and Surround signals including PPM and ITU BS.1771 Loudness meter. These and all other measuring functions can easily be switched with two fast access mode keys. The key functions can be defined by an easy to use setup menu or presets.

Up to six multi-standard peak meters, the ITU BS.1771 Loudness Meter, the Surround Sound Analyzer providing a highly informative display for monitoring sound balance and the surround effect of surround programmes, the SPL(A), Leq(A)/(C) display, the RTA and the Dialnorm meter make the unit very attractive for use in DVD productions and film soundtrack mixing as well as in broadcast and TV production. Other features include status display for AES-3 signals, a numeric display of essential parameters and a stopwatch. All are presented in three sections of the large VGA display. An external VGA monitor can be connected.

The SurroundMonitor 10600-PLUS and SurroundMonitor 10660-VID are particularly budget-friendly members of RTW's SurroundMonitor family and of RTW's Loudness Family.

Specifications

Functions

	Up to 6-channel digital Peak Program Meter, ITU BS.1771 Loudness Meter, Surround Sound Analyzer, Multi Correlator, Dialnorm, Real Time Analyzer, Audio Vectorscope 2/0, Digital Over, Mute detection and AES3 status display, Stopwatch
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Digital Inputs

Quantity	3 (Stereo), AES3, transformer balanced, 110 Ohm (internal detachable), Sampling frequency range 32 kHz – 96 kHz
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Digital Outputs

Quantity	3 (Stereo), AES3, input signal looped through, unbuffered
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Program Meter: Digital Peak Program Meter (PPM)

Level display	Up to 6 ch. vertical bargraphs, Peak Hold and loudness indicator switchable
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Loudness meter	Additional spot indicator on the bargraphs: RTW mode or A, C, Leq (M) (CCIR-2k) weighting
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Display modes	2-ch. Stereo, 2 x 2-ch. Stereo, 3 x 2-ch. Stereo, 2-ch., 4-ch., 6-ch., 5.1 Surround, 3.1 Surround, Total Loudness bargraph switchable
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Peak value memory	Peak Memory, Peak Hold
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Scales	Digital 1 (0 dBFS to -60 dBFS), Digital 2 (0 dBFS to -20 dBFS), Digital 3 (-18 dB to +18 dB), Digital 4 (-2 dB to +18 dB), Digital 5 (+20 dB to -40 dB), Digital 6 (+9 dB to 0 dB to -60 dB), quasi DIN: DIN-5, DIN-10, Nordic, British IIa, IIb, Zoom 2, Zoom 20
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Headroom	Adjustable from -5 dB to -20 dB in 1 dB steps
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Integration time (Attack)	Digital 1 - 6: Sample, 0.1 ms, 1 ms, 10 ms quasi analog: Norm, Sample, 0.1 ms, 1 ms
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Fall back time	According to the selected standard (1,5 s/20 dB for DIN)
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Gain	Digital 1 - 6: +40 dB; quasi analog scales: DIN, Zoom 2, Zoom 20: +20 dB, British, Nordic: +40 dB
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DC filter	Off, 5 Hz, 10 Hz, 20 Hz
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Peak Hold indicator	Integration time same as level display (see above) or 1 sample
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Digital Over indicator	Red spot indicators above each bargraph
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Threshold	Full Scale, Full Scale-1LSB, Full Scale-2LSB, -0.1 dBFS, -0.5 dBFS, -1 dBFS, -2 dBFS, -3 dBFS
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Attack time	1 - 15 samples
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Word length	16 - 24 bit
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Mute indicator	Red spot indicators below each bargraph
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Threshold	All bits digital "0"
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Attack time	50, 100, 200, 300 ms or 5 to 80 Samples (selectable in steps of 5 samples)
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Total Loudness Meter/Leq (PPM)

Display	L + R (2-ch. Stereo), surround mode for channels 1 to 6
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Calibration	SPL reference 72 to 80 dB (single channel)
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Total loudness/SPL	70 to 98 dB (without LF channel)
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Weighting filters	Linear, A, C, Leq(M)(CCIR-2k), ITU RLB, RTW mode, all RMS (fast/slow)
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Leq	Range 70 to 98 dB (with weighting as selected above)
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Program Meter: ITU BS.1771 Loudness Meter

Display	Vertical bargraphs for each channel of the 2-ch. stereo and 5.1 surround signal, pair of additional bargraphs selectable:
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	<ul style="list-style-type: none"> ▪ "M" bargraph (momentary - summation of momentary loudness values of all channels for a short time span) ▪ "I" bargraph (integrated - loudness value of an adjustable dynamic time frame, summation of Momentary values) ▪ "L" bargraph (longterm - loudness value of a longterm reading, infinite or manual control)
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Peak value memory	max. Loudness value, max. peak
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Numeric level display	selectable, readout of "I" or/and "L" bargraphs, if selected, "L" value additionally with running measuring time period
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Correlator spot indicator	displayed with stereo channel pair, left at the bottom of the bargraphs
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Scales	Loudness scale according to ITU BS.1771: -21 to +9 dBLU or -31 to 0 LKFS
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Weighting filter	K-filter acc. to ITU BS.1770
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Reference value for "0"	-24 dBFS, range: -25 to -10 dBFS, selectable in 1 dB steps
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Headroom	0 to 9
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Integration time for "M"	125 ms (IEC), 250 ms (IRT), 500 ms, 750 ms, 1 s (IEC), 1.5 s, 2 s
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Integration time for "I"	20 s, time frame selectable between 1 s and 20 s
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Integration time for "L"	infinite or manual
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Threshold for adoption of "M" values into "I"/"L" reading	-20, selectable between 0 and -39
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Alarm threshold	+8, selectable between 0 and +9
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Alarm period	1 s, selectable between 1 s and 9 s, can also be disabled
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Level adjustment for the summation of the stereo signal	0.0 dB, selectable between -3 dB and +3 dB in 0.5 dB steps
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Other Instruments

	Surround Sound Analyzer
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	Multi Correlator
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	Real Time Analyzer
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	Audio Vectorscope
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	AES3 Statusmonitor
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General

Supply voltage	24 V DC (21 V - 30 V DC)
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Current consumption	290 mA (24 V DC) nominal, switch-on current is much higher
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Power consumption	6,5 W maximum
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Operating temperature range	0° to 45° C
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Storage temperature range	-30° C to +85° C
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Display

Type	color TFT, 6.5", VGA (640 x 480 pixel), visible area 132 x 99 mm
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Connectors

Digital input, Digital output	25-pin Sub-D-F socket each
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Monitor output	15-pin Sub-D-F socket (VGA)
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Remote	15-pin Sub-D-F socket
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DC connector	Type "Binder 710" locking 4-pin low voltage connector
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Design, Dimensions

10600-PLUS (table-top unit)	Case: graphite grey (RAL 7024), Scale, front: silver, labeling: black
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Dimensions	176.5 x 125,5 x 61.5 mm (W x H x D excl. table stand)
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Weight	approx. 1050 g incl. table stand
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10660-VID (half-19"/3U module)	Case: graphite grey (RAL 7024), Scale, labeling: grey white
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Dimensions	213.8 x 132.6 x 242.5 mm (W x H x D, without adapter bars)
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Weight	approx. 1200 g
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Items delivered

	10600-PLUS: manual, table stand, mains adapter
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	10660-VID: manual, mounting adapter bars, DC counter plug
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Optional Accessories

	1163 Snake cable 25-pin Sub-D-M to 8 XLR-M (output fan-out)
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	1186 Snake cable 25-pin Sub-D-M to 8 XLR-F (input fan-out)
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	13711 Adapter frame for mounting into 190 mm systems
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	13713 Panel mounting kit (for mounting 10600 in panel cut-outs)
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	1171-R wide voltage power supply 90 - 264 V AC/24 V DC, 0.63 A
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	1175-R wide voltage power supply 100 - 240 V AC/24 V DC, 2.7 A
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