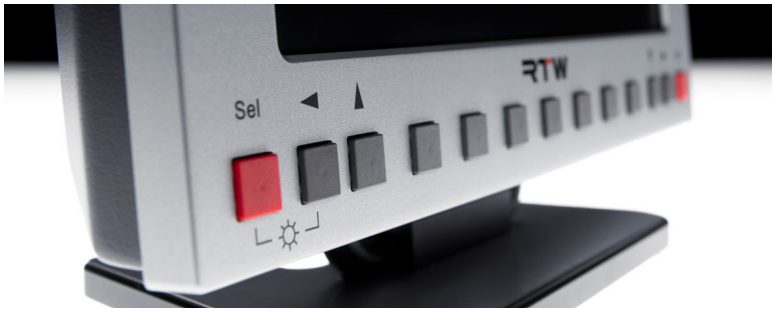
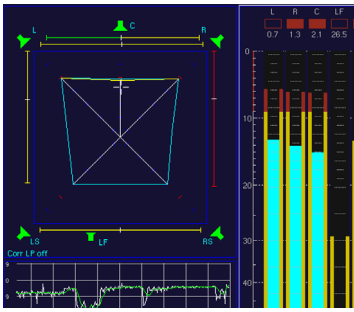
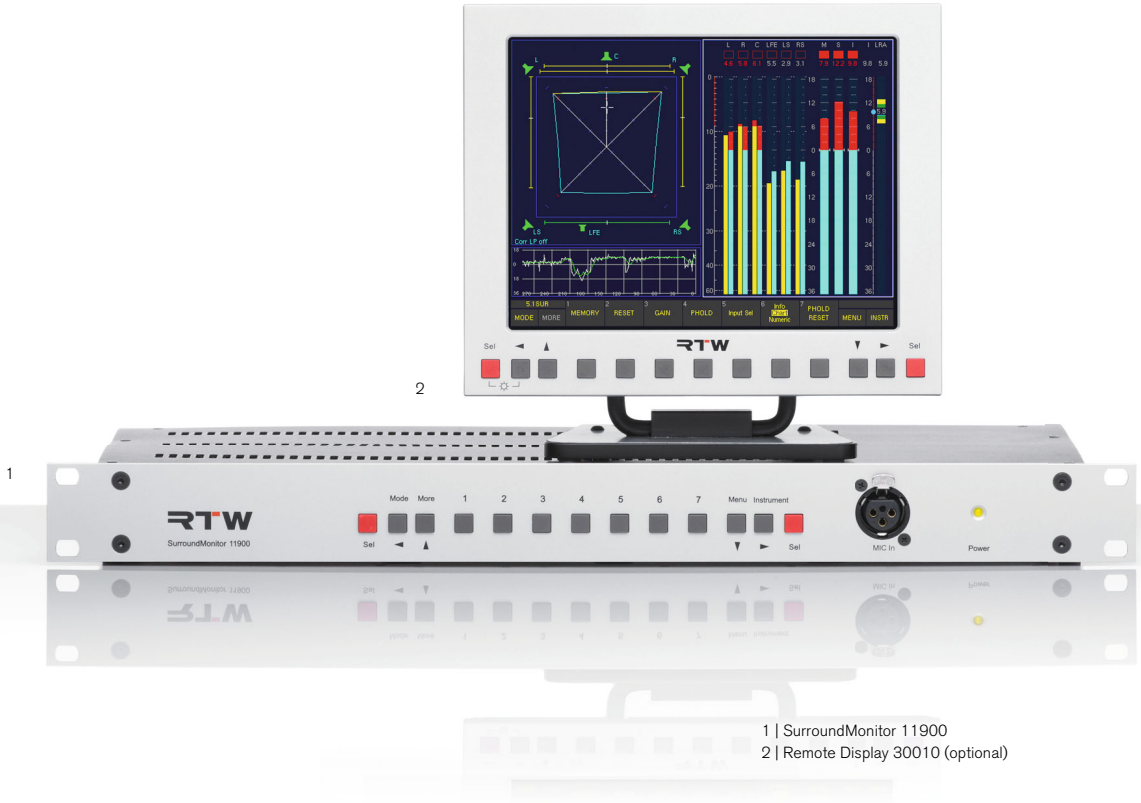
Data Sheet

SurroundMonitor 11900 Series





1 | Overview



1 | SurroundMonitor 11900
2 | Remote Display 30010 (optional)

8-channel Multistandard PPM ▪ Surround Sound Analyzer ▪ Loudness ▪ Loudness Leq ▪ LRA ▪ PPM ▪ Dialnorm Vectorscope ▪ Correlator ▪ RTA ▪ Downmix ▪ AES3 Status ▪ SPL Meter ▪ BLITS ▪ 3G-SDI ▪ Dolby® Decoder

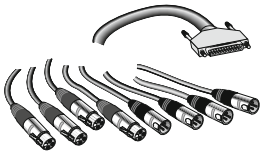
The 11900 series is RTW's prime solution using external displays for measuring and analyzing multi-channel and surround sound audio programs. It meets top-level demands in terms of functionality, channel count, system integration and networking. All functions can be controlled using the control keys on the front panel of the 19"/1U case. For display, the optional RTW Remote Display 30010 (VGA monitor with function keys) or a standard VGA display can be used.

Features:

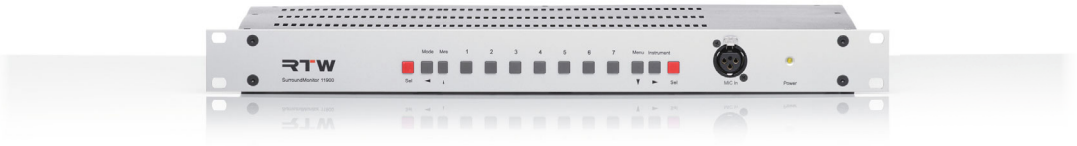
- Multistandard PPM up to 7.1
- Loudness meter according to current standards (single channels, Momentary, Shortterm, Integrated)
- Loudness Range instrument (LRA)
- Chart recorder
- Surround Sound Analyzer
- 10-fold correlator with LFE mode
- 1/3 and 1/6 octave RTA
- Downmix meter
- 2- and 4-channel audio vectorscope
- SPL meter
- Dialnorm eter
- AES3 status monitor
- BLITS analyzer
- Test signal and BLITS /EBU generator

2 | Accessories

8-pair snake cable, 4 m
1186
- distributes 25-pin Sub-D connector to 8 XLR-F cable connectors
- “Meter In analog” and “Analog In” fan-out



8-pair snake cable, 4 m
1167
- distributes 25-pin Sub-D connector to 4 XLR-F and 4 XLR-M cable connectors
- “Digital In/Out” fan-out

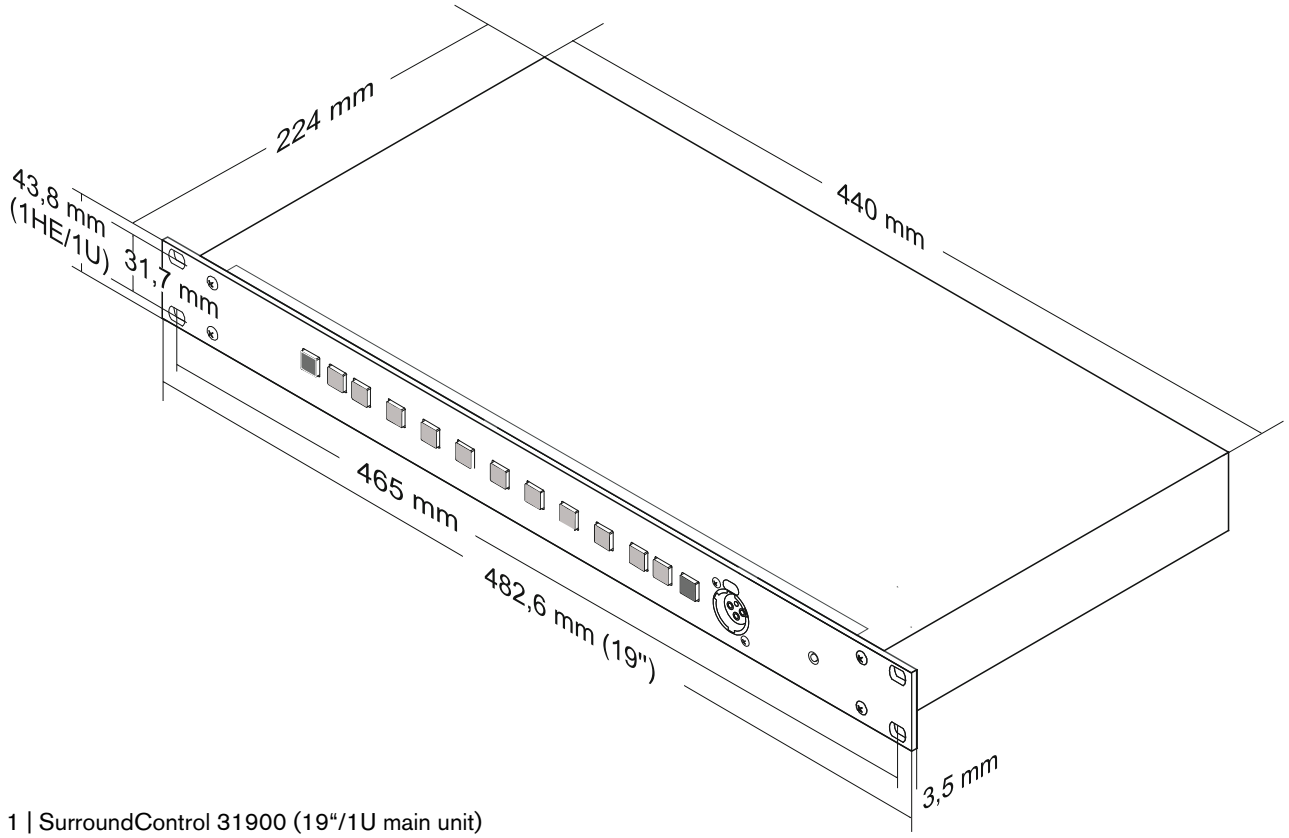


SurroundMonitor 11900 Series
19“/1U main unit with control keys

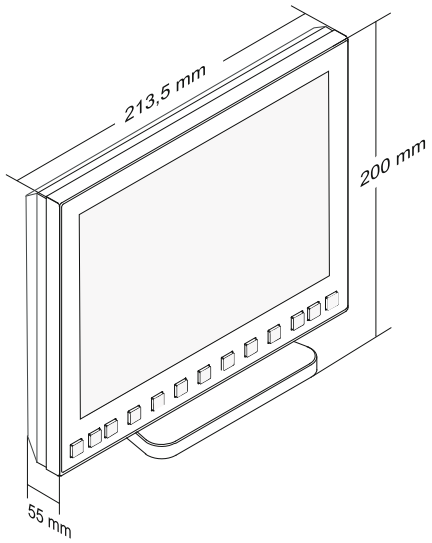
Measuring microphone MM1
13720
- 3-pin XLR-M connector
- for SPL measurement via MIC In connector on the front side

Remote Display
30010
- 8.4“ VGA color TFT monitor (640 x 480 pixel)
- function keys on the front side
- mains adapter and 5 m VGA connecting cable (all pins wired) included

3 | Dimensions



1 | SurroundControl 31900 (19“/1U main unit)

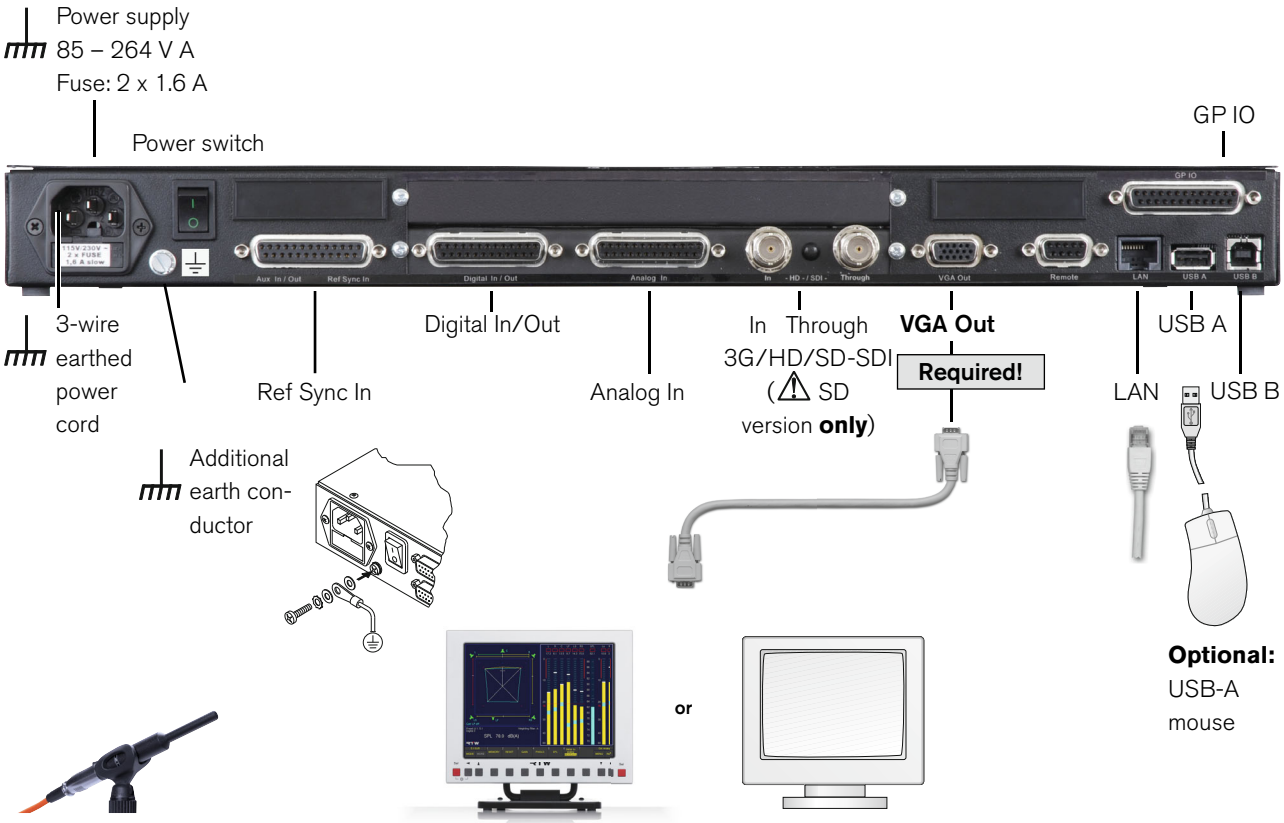


2 | Remote Display 30010 (optional)

4 | Connection

4.1 | Connectors

ATTENTION
Never operate the unit without a properly earthed power supply cord!
According to EN 61010 standard an additional earth conductor is required, if the unit is mounted into 19” racks!



Measuring microphone 13720:
optional RTW accessory
(XLR-F connector on the front side)

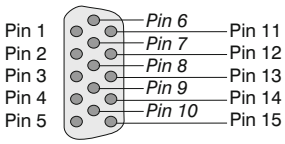
RTW Remote Display 30010:
optional RTW accessory

Optional:
standard VGA monitor

4.2 | Pin Assignment

VGA Out (15-pin Sub-D-F)

Pin:	Function:
1	R | video signal
2	G |
3	B |
4	don't wire, for future use
5	GND
6	GND
7	GND
8	GND
9	don't wire, for future use
10	GND
11	Tx – Remote Display 30010
12	Rx – Remote Display 30010
13	H-sync
14	V-sync
15	don't wire, for future use



(External view of the connector)

NOTE - The VGA cable shall be 10 to 15 m maximum length! When connecting an RTW Remote Display 30010 all pins of the VGA connecting cable must be wired!

USB-A

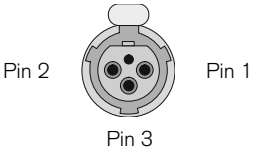
Standard USB 1.1 interface for connecting a computer mouse

LAN

RJ-45 standard network connector

MIC In (3-pin XLR-F on the front panel)

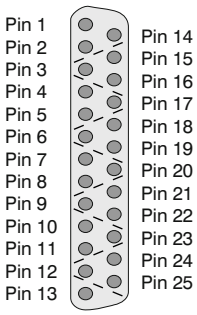
Pin:	Function:
1	Shield/chassis
2	+, hot
3	–, cold



(External view of the connector)

Analog In (25-pin Sub-D-F)

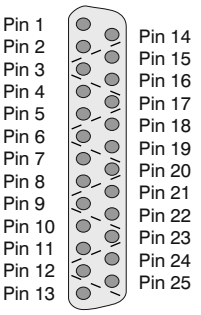
Pin:	Function:
1	Input Analog 8 (+, hot)
14	Input Analog 8 (-, cold)
2	Shield/chassis
15	Input Analog 7 (+, hot)
3	Input Analog 7 (-, cold)
16	Shield/chassis
4	Input Analog 6 (+, hot)
17	Input Analog 6 (-, cold)
5	Shield/chassis
18	Input Analog 5 (+, hot)
6	Input Analog 5 (-, cold)
19	Shield/chassis
7	Input Analog 4 (+, hot)
20	Input Analog 4 (-, cold)
8	Shield/chassis
21	Input Analog 3 (+, hot)
9	Input Analog 3 (-, cold)
22	Shield/chassis
10	Input Analog 2 (+, hot)
23	Input Analog 2 (-, cold)
11	Shield/chassis
24	Input Analog 1 (+, hot)
12	Input Analog 1 (-, cold)
25	Shield/chassis



(External view of the connector)

Digital In/Out (25-pin Sub-D-F)

Pin:	Function:
1	Audio Output digital 4 (+, hot)
14	Audio Output digital 4 (-, cold)
2	Shield/chassis
15	Audio Output digital 3 (+, hot)
3	Audio Output digital 3 (-, cold)
16	Shield/chassis
4	Audio Output digital 2 (+, hot)
17	Audio Output digital 2 (-, cold)
5	Shield/chassis
18	Audio Output digital 1 (+, hot)
6	Audio Output digital 1 (-, cold)
19	Shield/chassis
7	Audio Input digital 4 (+, hot)
20	Audio Input digital 4 (-, cold)
8	Shield/chassis
21	Audio Input digital 3 (+, hot)
9	Audio Input digital 3 (-, cold)
22	Shield/chassis
10	Audio Input digital 2 (+, hot)
23	Audio Input digital 2 (-, cold)
11	Shield/chassis
24	Audio Input digital 1 (+, hot)
12	Audio Input digital 1 (-, cold)
25	Shield/chassis



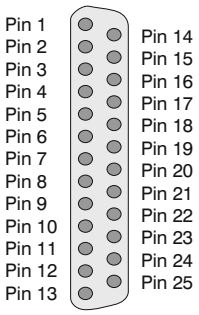
(External view of the connector)

NOTE - The AES3 inputs are permanently terminated with 110 Ω.

Pin Assignment (continued)

GP IO (General-purpose Input/Output) (25-pin Sub-D-F)

Pin:		Function:
1	IN	Function key 1
2	IN	Function key 2
3	IN	Function key 3
4	IN	Function key 4
5	IN	Function key 5
6	IN	Function key 6
7	IN	Function key 7
8	IN	Control key MODE
9	IN	Control key MENU
10	IN	Control key MORE
11	IN	Control key INSTR(UMENT)
12	IN	Select key SEL(ECT)
13	IN	Stop watch key START
14	IN	Stop watch key RESET
15	IN	Stop watch key STOP
16	IN	don't wire, for future use
17	OUT	Output 1
18	OUT	Output 2
19	OUT	Output 3
20	OUT	Output 4
21	OUT	Output 5
22	OUT	Output 6
23	OUT	Output 7
24	OUT	Output 8
25		Common potential and shield/chassis



(External view of the connector)

NOTE - The pins each have to be switched to pin 25 for activating the corresponding function. All GP IO inputs are active low. All GP IO are set to active low by factory, but logic state and switching function can be changed. Refer to paragraph **External control via GP IO connector** included in the PDF version of the operating manual for more detailed information.

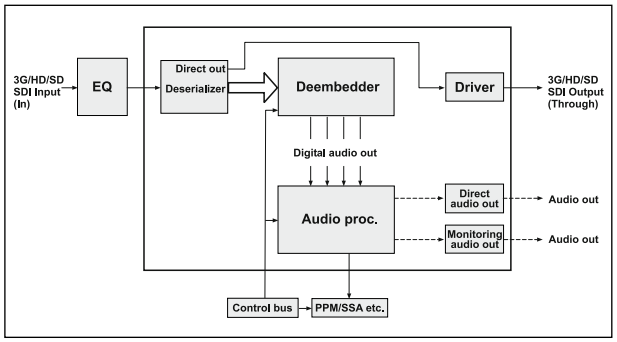
3G/HD/SD-SDI In Through (BNC-F; SD version only)

Pin:	Function:
Pin:	Signal
Ring:	Shield/chassis

(External view of the connector)

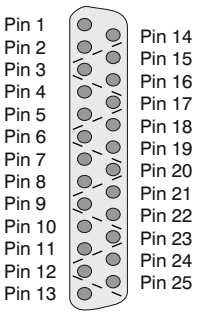
NOTE - Input signals are active looped through without processing.

Block diagram of the 3G/HD/SD-SDI interface



Ref Sync In (25-pin Sub-D-F)

Pin:	Function:
1	Ref Sync In (AES3), (+, hot)
14	Ref Sync In (AES3), (–, cold)
2	Shield/chassis
15	don't wire, for future use
3	don't wire, for future use
16	Shield/chassis
4	don't wire, for future use
17	don't wire, for future use
5	Shield/chassis
18	don't wire, for future use
6	don't wire, for future use
19	Shield/chassis
7	don't wire, for future use
20	don't wire, for future use
8	Shield/chassis
21	don't wire, for future use
9	don't wire, for future use
22	Shield/chassis
10	don't wire, for future use
23	don't wire, for future use
11	Shield/chassis
24	don't wire, for future use
12	don't wire, for future use
25	Shield/chassis



(External view of the connector)

Note: The AES3 Sync Input is permanently terminated with 110 Ω.

5 | Specifications

General

Power requirements:	85 to 264 V AC
Rated mains frequency:	50/60 Hz
Mains voltage rated value:	115/230 V AC
Rated power:	35 VA
Connectors:	1 x 15-pin Sub-D-F (VGA out) 1 x LAN 1 x USB A, 1 x USB B 4 x 25-pin Sub-D-F 1 x XLR-F (measuring microphone) 1 x 6,35 mm jack plug (phones) 2 x BNC (SDI: with SD version)
Dimensions:	19"/1U rack-mount housing, depth 225 mm
Weight:	3.7 kg
Operating temperature range:	0° to +45° C

Functions

- multi format surround peakmeter (5.1, 6.1, 7.1) with True Peak
- 2-channel peakmeter with True Peak
- Multi-channel peakmeter with True Peak
- Loudness meter acc. to current standards
- Selectable Loudness Range instrument (LRA)
- selectable SPL meter
- Surround Sound Analyzer
- 10-fold multi phase meter with LFE mode
- 1/3- and 1/6-octave spectrum analyzer
- 2- and 4-channel audio vectorscope
- Dialnorm meter
- Downmix meter
- AES3 status monitor
- Audio test signal generator
- BLITS analyzer and generator
- EBU 3304 surround ident generator
- GLITS, EBU 3304, ARD-WDR Stereo ident generator
- 3G/HD/SD-SDI deembedder (31900SD)
- Dolby® E/Dolby® AC-3/Dolby® DD+ decoder (31900SD)
- Alarm functions

Analog Inputs

Metering:	8 analog inputs, Sub-D-F connector, 25-pin
- Adjustment range:	Level Offset via software: ±8 dB
- Maximum input level:	+24 dBu
- Impedance:	> 10 kΩ, electronically balanced
- Frequency response:	20 Hz to 22 kHz, ±0.25 dB @ 48 kHz
- THD+N:	< 105 dB @ 48 kHz
- Crosstalk:	< 105 dB (Frequency range 22 Hz to fs/2)
Measuring microphone input:	balanced, phantom powered, XLR-F connector for measuring microphones with open circuit voltage of 15 mV/Pa @ 1 kHz

Digital Inputs

Metering:	4 AES3 inputs, Sub-D-F connector, 25-pin, connector features 4 in- and 4 outputs
3G/HD/SD-SDI (option):	2 x BNC (In, Through; SD version only)
External clock signal:	AES3 signal, Sub-D-F connector, 25-pin
Sampling rates:	44.1, 48, 96 kHz, synchronisation via digital input signal or Ref Sync input

Digital Outputs

Monitoring:	4 AES3 outputs, Sub-D-F connector, 25-pin, connector features 4 in- and 4 outputs
Sampling rates:	referenced to digital inputs or internal clock, 44.1, 48, 96 kHz

Program Meter: Peak Program Meter (PPM)

General (PPM)

Input sources:	Metering input, analog/digital selectable
Surround peakmeter:	for all formats up to 7.1
Track layout:	selectable for 5.1 surround: ▪ SMPTE-TV (ITU, SSF), ▪ SMPTE-Film, ▪ DTS, ▪ Film (L, C, R, LF, LS, RS) selectable for 7.1 DD+: ▪ L, C, R, LS, RS, LSR, RSR, LFE ▪ L, R, C, LFE, LS, RS, LSR, RSR
Multi-channel peakmeter:	up to 8 single channels or up to 4 x 2-channel stereo pairs
2-Channel peakmeter:	for the defined stereo channel pair L and R
additional 2-Ch. PPM:	selectable, for external signals or internal generated Lo/Ro signals (2-Ch. Downmix),
SPL meter:	selectable, indication of the total sound pressure level calculated from the individual channels
Indicators:	▪ Peak level, ▪ RMS level (linear, A-, C-, M-, CCIR-, K-weighted), ▪ Peak hold, ▪ Numerical value of the peak hold level, ▪ Digital Over,
Functions:	▪ Gain (+20 dB, +40 dB acc. to standard), ▪ Peak hold on/off, ▪ RMS on/off, ▪ Memory, ▪ Reset, ▪ Alarm (threshold over, silence)

Specifications (continued)

Analog Peakmeters (PPM)

Analog scales:
- DIN5dB,
- DIN10dB,
- Nordic (N9, IEC 268 Type I),
- British (Type IIa, IEC 268-10A),
- British (Type IIb, IEC 268-10A),
- VU,
- Zoom +/–10dB,
- Zoom +/–1dB,
- SMPTE 24 dB – abs,
- SMPTE 20 dB – rel,
- NHK

Integration time: according to standard or 300 ms, 150 ms, 20 ms, 10 ms, 1 ms, 0.1 ms

Reference level (PML): according to standard:
+6 dBu (DIN, Nordic), +8 dBu (British)
- NHK: 0 dB @ system reference level
- SMPTE 24 dB – abs: 0 dB @ 0 dBu
- SMPTE 20 dB – rel: 0 dB @ +4 dBu

selectable offset (± 8 dB)

Digital Peakmeters (PPM)

Word width: 24 bit

Digital scales:
- TP60 (+3 to –60 dB)
- TP20 (+3 to –20 dB)
- Dig60dB (0 dBFS to –60 dBFS absolute),
- Dig20dB (0 dBFS to –20 dBFS absolute),
- Dig+18dB..0dB (18 dB to 0 dB relative, 0 dB @ –18 dBFS),
- Dig+18dB..0..–18dB (18 dB to –18 dB rel., 0 dB @ –18 dBFS),
- Dig+20..0..–40dB (20 dB to –40 dB rel., 0 dB @ –20 dBFS),
- ARD +9 dB to –60 dB (0 dB @ –9 dBFS)
- <q>DIN5dB,
- <q>DIN10dB,
- <q>Zoom +/–10dB,
- <q>Zoom +/–1dB (0 dB @ headroom setting),
- <q>Nordic (+6 dB @ headroom setting),
- <q>British IIa (“6” @ headroom setting),
- <q>British IIb (+8 dB @ headroom setting),

Headroom: selectable in 1 dB steps from 0 dBFS to –20 dBFS

Integration time (Attack): acc. to corresponding standard or selectable: sample or 150 ms, 20 ms, 10 ms, 1 ms, 0.1 ms

Additional Gain: 40 dB

High-pass filter: Off, 5 Hz, 10 Hz, 20 Hz

Peak Hold indicator: integration time sample or same as level indication

Over indicator (Clip):
- Operating threshold: FS, FS-1LSB, FS-2LSB, -0.1 dBFS, –0.5 dBFS, –1 dBFS, –2 dBFS, –3 dBFS
- Attack time: 1 to 15 samples
- Word width: 16 to 24 bit selectable

Program Meter: Loudness Meter

General (Loudness)

Standards: EBU R128, ITU-R BS.1770-2/1771, ATSC A/85, ARIB, Custom mode (parameter adjustable)

Display:
- Bargraphs vertical for each single channel
- M bargraph (Momentary - summation of momentary loudness values of all channels for a short span of time)
- S bargraph (Shortterm - loudness value of an adjustable danymic time frame, summation of Momentary values)
- I bargraph (Integrated - integrated loudness value), infinite or manual control

Bargraph display:
- Loudness only
- Loudness + PPM

Numerich display: for shortterm (S) and integrated (I) values

Chart display: für momentary (M) and shortterm (S) values

Weighting filter: K filter acc. to ITU BS.1770

Alarm threshold: adjustable, from 0 to 9 in steps of 0.5

Alarm hold: 1 s, 5 s (default), or manual reset

EBU R128

Scales: EBU+9, EBU+18, EBU+9a, EBU +18a

ITU-R BS.1770-2/1771

Scales: ITU+9, ITU0

ATSC A/85

Scales: ATSC0, ATSC0a

ARIB

Scales: ATSC0

Custom-Modus (parameter adjustable)

Scales (Range/ Target Level):
- EBU+9 (–18 to +9 LU/–23 LUFS)
- EBU+18 (–36 to +18 LU/–23 LUFS)
- EBU+9a (–41 to –14 LUFS/–23 LUFS)
- EBU+18a (–59 to –5 LUFS/–23 LUFS)
- EBU0 (–60 to 0 LUFS/–23 LUFS)
- ITU+9 (–18 to +9 LU/–24 LKFS)
- ITU0 (–30 to 0 LKFS/–24 LKFS)
- ATSC0 (–60 to 0 LKFS/–24 LKFS)
- ATSC0a (–30 to 0 LKFS/–24 LKFS)

Reference value for 0 display of LU/LUFS- scales: adjustable, 1-dB-Schritte von –30 bis –10 LU/LUFS

LUFS/LKFS Headroom: adjustable, 1-dB-Schritte von 0 bis –30 LUFS/LKFS

Window Time Momentary: selectable: 200 ms, 300 ms, 400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms, 1000 ms

Integration time Short: 3 s, time frame selectable from 1 to 20 s

Specifications (continued)

Integrated Silence Gate: –70.0 LUFS; adjustable in ther range from –80.0 LUFS to –40.0 LUFS in steps of 0.5 LUFS, detachable

Integrated Relative Gate: –10.0 LU; adjustable in the range from –40.0 LU to 0 LU in steps of 0.5 LU, detachable

Level adjustment for the summation:
- 0.0 dB (L, R, C), adjustable between –3 and +3 dB in steps of 0.5 dB
- +1.5 dB (LS, RS), adjustable between –3 and +3 dB in steps of 0.5 dB
- Off (LFE), selectable: Off, 0 dB, 10 dB

Loudness Range Instrument (LRA)

Display: switchable

Mode: selectable: LRA Bar, MagicLRA, MagicLRA + I, MagicLRA + I + Num

Scale range: selectable: 6 LU, 10 LU, 20 LU, 30 LU

Center range: 2 LU; adjustable in the range from 1 to 20 LU in steps of 1 LU

Comfort zone: 4 LU; adjustable in the range from 1 to 20 LU in steps of 1 LU

Warning range: depends on the selected scale range and the spread of the comfort zone

Colors: selectable for each range

SPL Meter

Measuring range: Low: 50 – 78 dB(SPL)
Mid: 70 – 98 dB(SPL)
High: 90 – 118 dB(SPL)

Input sources: internal (mix of the surround channels), external (MIC In measuring input, XLR-F connector)

Weighting: linear, A, C, CCIR, K

Integration time: F (125 ms), S (1 s)

Surround Sound Analyzer

(available in surround mode only)

Indicators:
- graphics display indicating the single channel and total program loudness acc. to selected weighting filter (Total Volume Indicator)
- correlation of adjacent channels
- position and width of phantom sound sources (PSI)
- Dominance indicator (DMI)

Multi-fold Phase Meter

Surround mode
- Display mode:
  - for each channel pair in 5.1/7.1 DD+ format
  - LFE mode to display the correlation between each single channel and LFE channel
- Filter: low pass filter switchable (300 Hz)

Multi-channel mode
- Display mode: for the defined stereo channel pair

2 Channel Stereo mode
- Display mode: for the defined stereo channel pair L and R and the external channels Lext and Rext

Audio Vectorscope

Surround mode
- Modes:
  - 2-channel
  - 4-channel
    (fixed: L-R upper part, LS[R]-RS[R] lower part)
- Input sources: in 2-channel mode selectable (e. g. 5.1): L-R, LS-RS, L-LS, R-RS, L-C, C-R, Lext-Rext, Lo-Ro
- Auto Gain: fast/slow
- Functions:
  - Indication: Fast - Slow
  - Display: Normal - M/S
- Phase meter: in 2- and 4-ch. mode for displayed channel pairs

Multi-Channel mode
- Input sources: defined and selected stereo channel pair

2 Channel Stereo mode
- Input sources: L-R
- Auto Gain: fast/slow
- Functions:
  - indication: Fast - Slow
  - display: Normal - M/S
- Phase meter: for the defined stereo channel pair L and R and the external channels Lext and Rext

Spectrum Analyzer (RTA)

Input sources: Selectable: all channels without LF, Rear, L/R, single channels, measuring input

Frequency range:
- Norm: 20 Hz to 20 kHz, add-on band > 20 kHz to fs/2
- LF: 5 Hz to 5 kHz

Number of bands:
- 1/3-octave: 31 bands, Filter acc. to IEC 225 class 2
- 1/6-octave: 61 bands

Measuring range: 45 dB

Resolution: 1, 2, 3 dB

Functions:
- Input select
- Peak hold on
- Display hold
- Cursor readout
- A-, C-weighting
- Integration time
- Set reference
- Scaling
- Frequency range

Integration time: I (impulse), F, S, peak (10 ms)

Downmix Meter

(available in surround mode only)

Input sources: internal generated downmix signals, external 2-channel signals or internal decoded downmix

Indicators:
- Peak level
- Peak hold
- RMS
- Audio vector scope
- Phase meter

for scales and standards see analog/digital peakmeter

Test Signal Generator (1)

Signals:
- pink noise: 20 Hz to 20 kHz, 200 Hz to 20 kHz
- octave-band noise
- sine wave

Level:
- 3 selectable levels: –9, –18 , –20 dBFS RMS
- variable in 1 dB steps: from 0 to –99 dBFS

Outputs: digital direct out

Test Signal Generator (2)

Signals: noise/sine wave

Level: 0 dBFS to –60 dBFS

Frequency: 20, 25, 50, 100, 250, 500, 1k, 2k, 4k, 8k, 10k

Outputs: digital direct out

Specifications (continued)

Test Signal Generator (3)

Surround identification:
- BLITS or EBU 3304
- optional intro from stored wav-file
- digital or analog offset, selectable in steps of 1 dB in the range from –12 to +12 dB
- selectable 10 dB LF boost for EBU 3304

Stereo identification:
- GLITS, EBU 3304 or ARD-WDR
- optional intro from stored wav-file
- digital or analog offset, selectable in steps of 1 dB in the range from –12 to +12 dB

Outputs: digital direct out

BLITS Analyzer

Surround identification: automatic detection and analysis of incoming BLITS test tones

Displays:
- incoming channels
- channel allocation
- level with difference
- phase resp. delay
- polarity
- test duration
- number of runs

Errors will be displayed in red

Alarm displays: for channel allocation, level, phase resp. delay, polarity

AES3 Status Monitor

Indicators:
- channel data are displayed as plain text, hex or binary
- channel selectable
- audio bit activity
- hardware status

Dolby® option (11900SD)

Decoder modes:
- Dolby® DD+
- Dolby® E
- Dolby® AC-3
- Dolby® Pro Logic I

Decoder inputs: analog, digital, 3G/HD/SD-SDI
Decoder outputs: to metering and/or direct out
Downmix modes: Lt/Rt, Lo/Ro, Mono, Mute

3G/HD/SD-SDI option (11900SD)

Inputs: 1 x BNC, display of any combination of max. 8 channels, no video signals
Outputs: 1 x BNC Through, selected input signals are active looped through without processing

System

GP IO (parallel):
- 16 inputs, functions selectable,
- 8 outputs for indication of alarm events (threshold over, silence, Digital Over), or as defined in Sub Presets.

Sub-D-F connector, 25-pin
- GP IO inputs: active low, pulse or momentary
- GP IO outputs: active high or low, (0.1 s, 0.5 s, 1 s, 2 s, manual)

USB: for connecting a computer mouse, USB 1.1, I_{max} 0.5 A
Network: Software update, export and import of User Presets, wav file upload
Video: VGA, 640 x 480, 256 colours, 60 Hz, for connecting the optional 8.4-inch Remote Display 30010 or a standard VGA monitor

Remote Display 30010 (optional accessory)

Power requirements: +24 V DC
Current drain (nominal): 630 mA (power-up current is much higher!)
Display: 8.4" VGA TFT (640 x 480 pixel, 256 colors, 60 Hz)
Connectors: 1 x 4-pin low voltage connector type 710 (DC)
1 x 15-pin Sub-D-F (VGA)
Control panel: keys for controlling the instrument functions and the menus
Dimensions: 213.5 x 200 x 55 mm (W x H x D, with table stand)
Weight: 2.5 kg
Operating temperature range: 0° to +45° C

Items supplied:

SurroundMonitor 11900:
- 19"/1U main unit with control keys
- Remote Control 30050
- mains supply cable
- operating manual

Order number: 11900

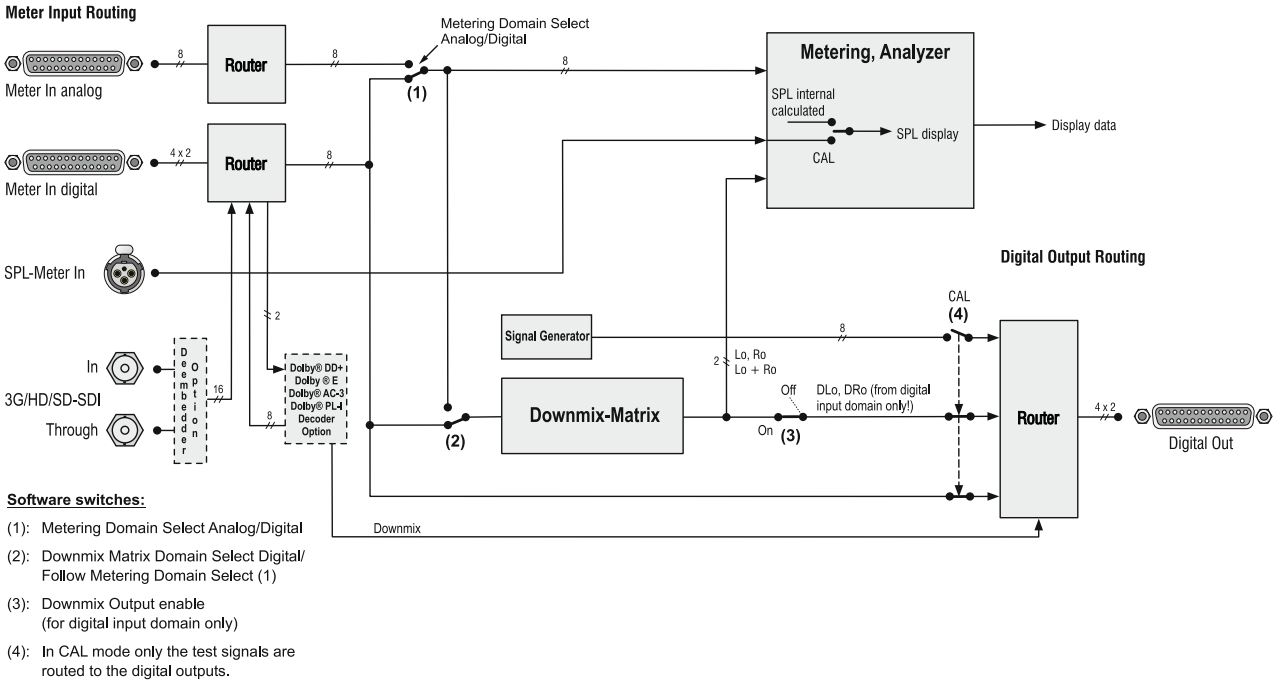
SurroundMonitor 11900SD:
- 19"/1U main unit with control keys
- 3G/HD/SD-SDI deembedder interface
- Dolby® E/Dolby® AC-3/Dolby® DD+ decoder
- mains supply cable
- operating manual

Order number: 11900SD

Optional accessories

- Remote Display **30010** (VGA monitor with function keys)
- snake cable **1186** (8 x XLR-f connector to Sub-D-m connector, 25-pin, length 4 m)
- snake cable **1167** (4 x XLR-m and 4 x XLR-f connector to Sub-D-m connector, 25-pin, length 4 m)
- Measuring microphone **13720** (3-pin XLR-M connector

Block Diagram



Software switches:

(1): Metering Domain Select Analog/Digital

(2): Downmix Matrix Domain Select Digital/ Follow Metering Domain Select (1)

(3): Downmix Output enable (for digital input domain only)

(4): In CAL mode only the test signals are routed to the digital outputs.

RTW GmbH & Co. KG
Am Wassermann 25 | 50829 Köln | Germany
Phone: +49 221. 70 913-0 | Fax: +49 221. 70 913-32
Internet: www.rtw.de | E-Mail: rtw@rtw.de