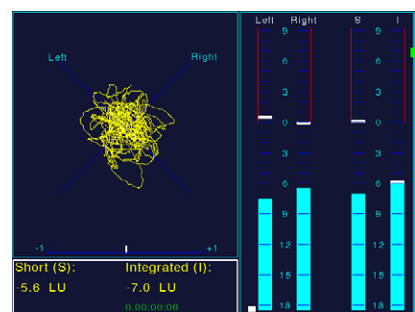


Data Sheet

DigitalMonitor 10500X-PLUS



DigitalMonitor 10500X-PLUS



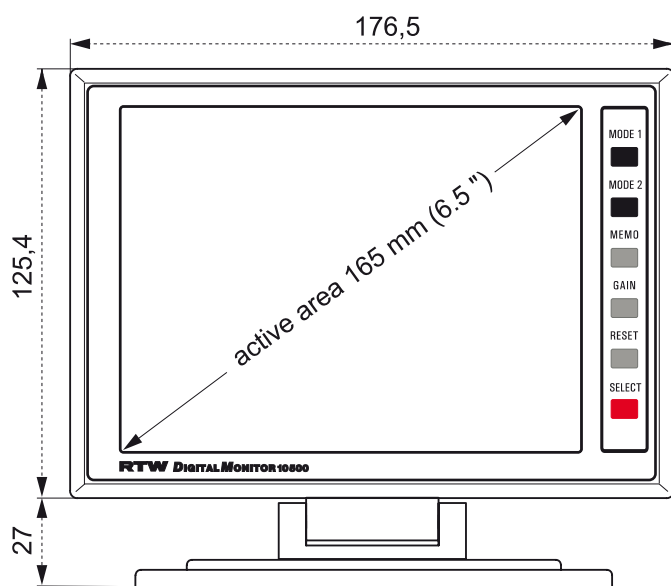
2-Channel Digital Peakmeter ▪ **ITU/EBU Loudness** ▪ **Loudness/Leq** ▪ **Audio Vectorscope** ▪ **RTA** ▪ **Correlator**
Stereo Sound Analyzer ▪ **AES/EBU Status Monitor** ▪ **Stopwatch**

The RTW DigitalMonitor 10500X-PLUS is the ideal choice for visualizing 2-channel digital audio in several professional audio applications such as broadcast, pre and post production environments, music production and mastering. Its bright 6.5" color TFT VGA display provides the

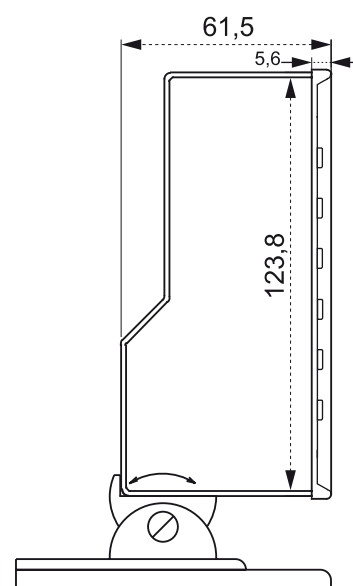
measuring functions selected by the user in up to three display sections. Parameters are stored in up to eight user presets that can be used for fast switching between the Peak Program Meter and the ITU/EBU Loudness Meter as well.

- 2-channel multi-standard peakmeter (PPM)
- Additional SPL/Leq bargraph
- Loudness functions acc. to EBU R128 without True Peak and without Loudness Range
- Parameter for other standards adjustable
- Additional selectable pair of bargraphs for display of the momentary, short and integrated loudness values
- Easy change between PPM and Loudness meter via programmed presets
- Stereo audio vectorscope and phase meter
- Real Time Analyzer
- AES/EBU status monitor
- AES3 input via XLR-F socket, 24 bit, 32 to 96 kHz
- Output via XLR-M socket, signal looped through
- VGA-output for an optional external VGA display
- Compact table-top unit with 6.5" color TFT display (VGA)

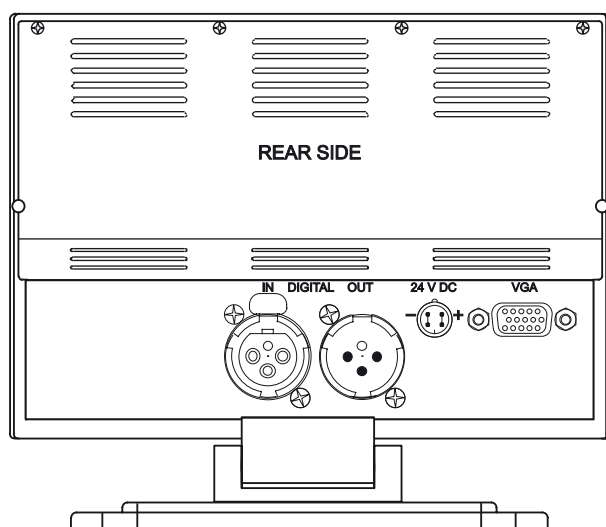
Dimensions



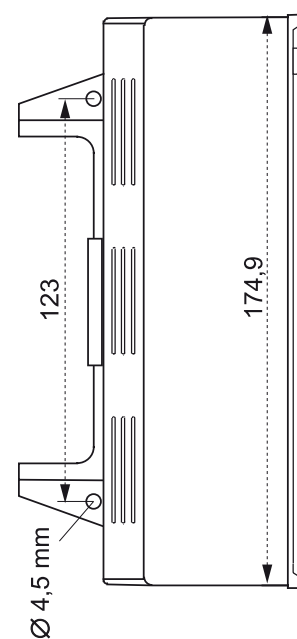
1 | Front view (dimensions in mm)



2 | Side view (dimensions in mm)



3 | Rear view (dimensions in mm)



4 | Top view (dimensions in mm)

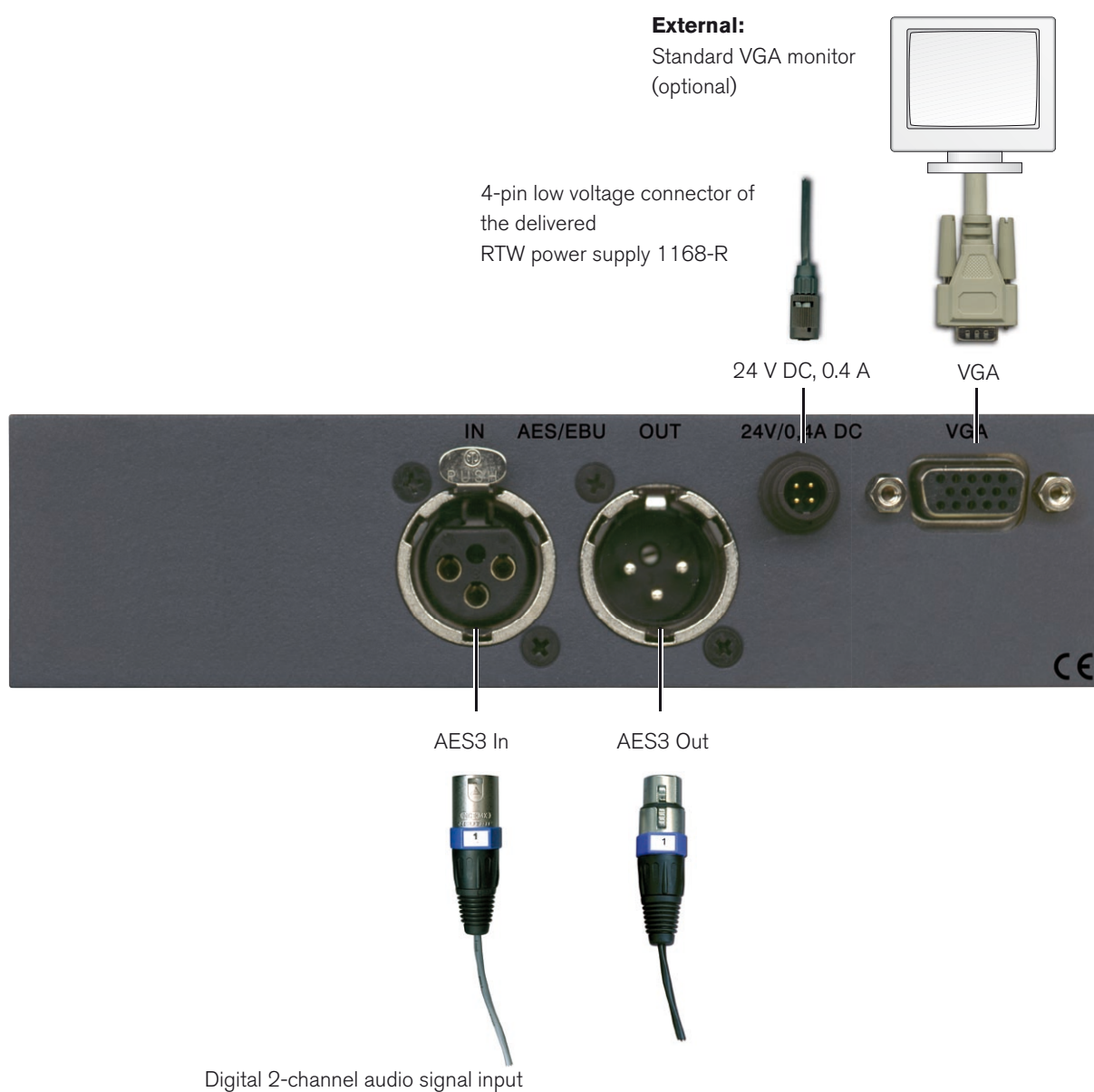
Connection

Connectors

Note:



For operating the 10500X-PLUS an adapted mains adapter is required. RTW recommends the use of the RTW wide voltage power supply 1168-R (100 - 240 V AC/24 V DC, 2.7 A) included in the package.

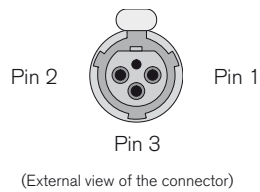


Pin Assignment

AES/EBU IN (3-pin XLR-F)

Pin: Function:

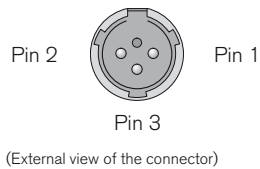
- 1 Shield/chassis
- 2 +, hot
- 3 -, cold



AES/EBU OUT (3-pin XLR-F)

Pin: Function:

- 1 Shield/chassis
- 2 +, hot
- 3 -, cold



24 V - 0,4 A (4-pin low voltage connector, type Binder 710)

Pin: Function:

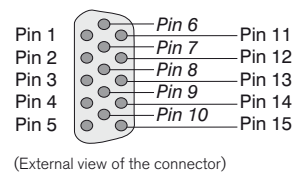
- 1 +24 V DC
- 2 +24 V DC
- 3 0 V
- 4 0 V



VGA (15-pin Sub-D-F)

Pin: Function:

- 1 R | Video Signal
- 2 G |
- 3 B |
- 4 do not wire
- 5 GND
- 6 GND
- 7 GND
- 8 GND
- 9 do not wire
- 10 GND
- 11 do not wire
- 12 do not wire
- 13 H-sync
- 14 V-sync
- 15 do not wire



Note: The VGA cable shall be of 10 to 15 m maximum length!

Specifications

General

Supply voltage:	+24 V DC
Current drain nominal:	290 mA (power-up current is much higher)
Power consumption:	max. 6.5 W
Operating temperature range:	0° to +45° celsius
Storage temperature range:	-30° to +85° celsius
Weight:	approx. 1080 g (with table-stand)
Connectors:	1 x 3-pin XLR-F 1 x 3-pin XLR-M 1 x 15-pin Sub-D-F (VGA) 1 x 4-pin low voltage connector Binder 710 (DC)
Dimensions:	176,5 x 125,5 x 61,5 mm (without table stand)

Digital Inputs

Digital inputs:	1 (Stereo), AES-3, transformer balanced
Input impedance:	110 Ω or Hi-Z
Sample rate:	32 kHz to 96 kHz

Digital Outputs

Digital output:	1 (Stereo), AES-3, input signal looped through, unbuffered
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Display

Display:	VGA color TFT, 640 x 480 pixel, 132 x 99 mm
Colors:	8
Reversal direction:	12 o'clock
Viewing angle:	horizontal 60° typ., vertical 60° typ.
Contrast:	250 at reversal direction

Program Meter: Digital Peakmeter (PPM)

Level display:	up to 2 channels, peak hold indicator switchable, vertical display orientation
Loudness meter:	additional spot indicator displayed on the bargraphs of the level display, RTW mode or A-, C-, CCIR-2k-, ITU BS.1770(k)-weighting, RMS
Display modes:	Stereo, Stereo + SPL bargraph
Peak value memory:	maximum peak level, peak hold
Numeric level display:	selectable, shown on the lower left side of the display
Correlator spot indicator:	switchable (at the left bottom of bargraph pair)
Scales digital:	Dig60dB: -60 to 0 dB FS, Dig20dB: -20 to 0 dB FS, Dig+18..-2 dB (+18 dB = 0 dB FS), Dig+18..-18dB (+18 dB = 0 dB FS), Dig+20..-40dB (+20 dB = 0 dB FS), ARD+9..-60dB (+9 dB = 0 dB FS)
Scales quasi analog:	qARD+9..-60dB, qDIN+10, qDIN+5, qNordic, qBR IIa, qBR IIb, qZoom +/-10 dB, qZoom +/-1 dB)
Headroom:	-5 to -20 dB, adjustable in steps of 1 dB
Integration time (Attack):	Scales digital: Sample, 0.1 ms, 1 ms, 10 ms; Scales quasi analog: according to standard or sample, 0.1 ms, 1 ms

Fall back time:	according to selected standard (1.5 s/20 dB for DIN)
Gain:	<ul style="list-style-type: none"> Scales digital: +40 dB; Scales quasi analog: +20 dB (qDIN scales, qZoom scales), +40 dB (qBritish, qNordic)
High pass filter:	OFF, 5 Hz, 10 Hz, 20 Hz
Peak hold indicator:	integration time same as level display or 1 sample (selectable)

Total Loudness Meter (PPM)

Display:	for channels L + R
Calibration:	SPL reference 72 to 80 dB (single channel)
Total loudness/SPL:	70 to 98 dB
Weighting filters:	linear, A, C, CCIR-2k, ITU BS.1770(k), RTW loudness, all RMS (fast or slow)
Leq:	range 70 to 98 dB (with weighting as selected above)

Digital Errors (PPM)

Digital Over indicator:	red spot indicators above each bargraph
Threshold:	FS, FS-1LSB, FS-2LSB, -0.1, -0.5, -1.0, -2.0 or -3.0 dB FS
Attack time:	1 to 15 samples
Word width:	16 to 24 bit
Mute indicator:	red spot indicators below each bargraph
Threshold:	all bits digital „0“
Attack time:	50, 100, 200, 300 ms
Threshold level:	5 to 80 samples, adjustable in steps of 5 samples

Program Meter: ITU/EBU Loudness Meter

Loudness display acc. to ITU BS.1771/EBU R128 without True Peak and	
Loudness Range:	<ul style="list-style-type: none"> bargraphs vertical for 2 channels M bargraph (Momentary - summation of momentary loudness values of all channels for a short span of time) S bargraph Short - Loudness value of an adjustable dynamic time frame, summation of Momentary values) I bargraph (Integrated - Loudness value infinite or with manual control)
Weighting filter:	ITU BS.1770 (k)
Peak value memory:	max. Loudness-value/max. peak
Numeric level display:	switchable, displayed in the lower left area of the display (Multi Instrument 2) showing a combination of two of M, S, I Loudness values displayed with the Stereo channel pair (at the bottom of the bargraph pair on the left)
Correlator spot indicator:	
Scales:	Loudness scale according to <ul style="list-style-type: none"> EBU R128: EBU+9: +9..-18 LU ITU BS.1771: LKFS: 0..-30 LKFS
Target level:	-23 LUFS, selectable in steps of 1 LUFS in the range from -25 LUFS to -10 LUFS



Specifications (continued)

Operation field:	0 dB, selectable in steps of 1 dB in the range from 0 dB to 15 dB
Integration time (Response) for	
Momentary:	Window Time 400 ms, 125 ms (IEC), 250 ms (IRT), 500 ms, 750 ms, 1000 ms (IEC), 1500 ms, 2000 ms
Integration time for	
Short:	3 s, time frame selectable between 1 s and 20 s
Integration time for	
Integrated:	infinite
Silence gate:	-70 LUFS, selectable in steps of 1 LUFS in the range from -40 LUFS to -74 LUFS, Off
Relative gate:	-8, selectable in steps of 1 LU in the range from 0 LU to -39 LU, Off
Alarm threshold:	-15 LUFS, selectable in 10 steps of 1 LUFS above Target Level
Alarm period:	1 s, selectable between 1 s and 9 s, Off
Level adjustment for the summation of the	
Stereo signal L + R:	0.0 dB, selectable between -3 dB and +3 dB in steps of 0.5 dB

Digital Errors (ITU/EBU)

Digital Over indicator:	red spot indicators above each bargraph
Threshold:	FS, FS-1LSB, FS-2LSB, -0.1, -0.5, -1.0, -2.0 or -3.0 dB FS
Attack time:	1 to 15 samples
Word width:	16 to 24 bit
Mute indicator:	red spot indicators below each bargraph
Threshold:	all bits digital „0“
Attack time:	50, 100, 200, 300 ms
Threshold level:	5 to 80 samples, adjustable in steps of 5 samples

Stereo Sound Analyzer

Function:	weighted loudness display: <ul style="list-style-type: none"> ▪ PPM mode: A, C, Leq(M) CCIR-2k, ITU BS.1770(k), RTW loudness ▪ ITU/EBU mode: ITU BS.1770(k)
Indicators:	<ul style="list-style-type: none"> ▪ graphics display indicating the single channel and total program loudness (Total Volume Indicator - TVI), ▪ switchable displays of position and width of phantom sources (color shows correlation) (Phantom Source Indicator - PSI) ▪ switchable displays of correlation of adjacent channels, ▪ position of dominant sound event (Dominance Vector - DMI)

Phase Meter (Correlator)

Display mode:	spot indicator or bargraph
Scale range:	-1 r to +1 r
Standard color setting:	red: -1 r to -0.1 r yellow: 0 r green: 0.1 r to +1 r
Colors:	selectable
Attack time:	fast: 1.0 s, slow 2.5 s
Negative peak	
correlation memory:	included in Peak Memory
Memory accuracy:	better 0.1 r

Audio Vectorscope (Lissajous)

Display colors:	8
AGC:	auto
Modes:	x/y or M/S
Time of persistence:	fast, medium, slow

Real Time Analyzer

Bands:	31, 1/3 octave
Frequency range:	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, RMS or Peak
Peak hold indicator:	switchable

AES/EBU status display

Display:	<ul style="list-style-type: none"> ▪ Overview in Multinstrument 2 (lower left frame of the screen) ▪ Detailed in Multinstrument 1 (tall frame on the left of the screen)
Status information:	locked, decoded AES/EBU status, parity, validity

Controls and Display Elements

Keys:	Mode 1 (Set), Mode 2 (Set), Func 1, Func 2, Chan, Select
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Items delivered

DigitalMonitor 10500X-PLUS:	<ul style="list-style-type: none"> ▪ DigitalMonitor RAL 7024 graphite grey ▪ Table stand RAL 7024 graphite grey ▪ Mains adapter ▪ Operating manual
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Order number: 10500XPLUS

