

	TMR7	TMR7OEM	TMR7-Radio	TMR7-Mount
Main unit (with 7" touch screen 16 : 9)	•	•	•	•
Table-top frame	•	-	•	-
Table-stand	•	-	•	-

## Audio Interface

AES3 In (transf. bal., 110 Ω)	2 x	2 x	2 x	2 x
Sampling rates kHz	44.1, 48, 96	44.1, 48, 96	44.1, 48, 96	44.1, 48, 96
AES3 Out	2 x	2 x	2 x	2 x

## Connectors

XLR-F	2 x	2 x	2 x	2 x
XLR-M	2 x	2 x	2 x	2 x
4-pol. 24 V DC	•	•	•	•
RJ-45 (LAN/Ethernet)	•	•	•	•
USB-A	2 x	2 x	2 x	2 x
RJ-12 6P6C (GPIO)	•	•	•	•
VGA	•	•	-	-

## Software

Standard equipment	basic	basic	complete	complete
Modular expansion with	Licenses: SW20002 SW20003 SW20006 SW20008 SW20014	Licenses: SW20002 SW20003 SW20006 SW20008 SW20014	- - - - -	- - - - -
Presets	up to 32		up to 5	

## Instruments and Functions

### 4-channel PPM (digital AES3 input sources via XLR)

Channel layout				
- Stereo	•	•	•	•
- 2 x Stereo	•	•	•	•
- Single channels (up to 4 x)	•	•	•	•
- Multi-channel up to 4 ch.	• (no 3.1)	• (no 3.1)	-	-
Display	Peak level, Peakhold, Numerical value, Digital Over			

	TMR7	TMR7OEM	TMR7-Radio	TMR7-Mount
Functions	Gain (+20 dB, +40 dB acc. to standard), Peakhold on/off, Memory, Memory Reset			
Word width	24 bit			
Scales	Standard equipment		Scales	
- TP60: +3 .. -60 dB	•	•	•	•
- Dig60: 0 .. -60 dB	•	•	•	•
- DIN5: +5 .. -50 dB	•	•	•	•
- Nordic: +12 .. -42 dB	•	•	•	•
- BR IIa: 7 .. 1	•	•	•	•
- BR IIa ext: 7..1	•	•	•	•
- BR IIb: +12 .. -12 dB	•	•	-	-
- BRIIb ext: +12..-12 dB	•	•	-	-
Scale extension	activatable with license SW20006		not extendable	
- TP20: +3 .. -20 dB	•	•	-	-
- Dig20: 0 .. -20 dB	•	•	-	-
- Dig0: +18 .. 0 dB	•	•	-	-
- Dig18: +18 .. -18 dB	•	•	-	-
- Dig40: +20 .. -40 dB	•	•	-	-
- ARD9: +9 .. -60 dB	•	•	-	-
- DIN10: +10 .. -50 dB	•	•	-	-
- Zoom10: +10 .. -10	•	•	-	-
- Zoom1: +1 .. -1	•	•	-	-
Headroom/Headroom Ref.	adjustable in the range from 0 to -20 dB in steps of 1 dB			
Operation field	adjustable in the range from 0 to -20 dB in steps of 1 dB			
Integration time (Attack)	acc. to corresponding standard or selectable: Sample, 20 ms, 10 ms, 1 ms, 0,1 ms, 150 ms for British scales			
Gain	+20 dB, +40 dB acc. to standard			
High-pass filter	Off, 5 Hz, 10 Hz, 20 Hz			
Peakhold indicator	1 s, 2 s, 4 s, 10 s, 20 s, 30 s, manual reset or off			
Over indicator hold time	1 s or manual			
Over indicator PPM				
- Threshold	Full Scale, Full Scale -1LSB, Full Scale -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			
Over indicator TruePeak				
- Threshold	adjustable in the range from -4 to 0 dBTP in steps of 0.1 dBTP			

### Stereo Correlator

Display	Bargraph, additional spot indicator between PPM bargraphs
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	TMR7	TMR7OEM	TMR7-Radio	TMR7-Mount
Scale range	-1 r to 0 to +1 r			
Color settings	red: -1 r to -0.1 r white: 0 r (-0.1 r to +0.1 r) green: +0.1 r to +1 r			
Attack/release time	1.0 s/2.5 s			

### Audio Vectorscope

Display mode	2-channel
Inputs	L/R (Stereo signal with the input channels of the selected audio group)
AGC	fast/slow
Grid	L/R or M/S

### AES3 Status Monitor

Display	<ul style="list-style-type: none"> <li>channel data are displayed as plain text, hex or binary <ul style="list-style-type: none"> <li>Channel selectable</li> <li>Audio bit activity</li> <li>Hardware status</li> </ul> </li> </ul>
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### Global Keyboard

Functions	<ul style="list-style-type: none"> <li>simultaneous control of defined functions in multiple instruments <ul style="list-style-type: none"> <li>preset recall</li> </ul> </li> <li>external control with the integrated GPIO interface.</li> </ul>
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### Gain Reduction

Display	1 bargraph for Mono and Stereo formats, up to 4 bargraphs in multi-channel mode	-	-
Input	Date stream via TCP/IP and LAN interface	-	-
Input routing	external featured streams selectable	-	-
Marker	adjustable threshold for the definition of upper and lower display section	-	-
Colors	32 colors for each bargraph section	-	-

### Loudness

Functions	activatable with license SW20002	integrated
Instruments	<ul style="list-style-type: none"> <li>Loudness Sum (bargraphs for M, S, I; selectable)</li> <li>Loudness Num (numerical values for: M, S, I, LRA, TPmax, Mmax, Smax, I-time; selectable) <ul style="list-style-type: none"> <li>Loudness Range (LRA)</li> <li>SPL-Meter</li> </ul> </li> </ul>	

	<b>TMR7</b>	<b>TMR7OEM</b>	<b>TMR7-Radio</b>	<b>TMR7-Mount</b>
Display	Bargraphs for each single channel (can be combined with PPM bargraphs)		-	-
Implemented standards	ITU-R BS.1770-4/1771-1, EBU R128, ATSC A/85, ARIB, OP-59, AGCOM, CALM Act, LEQ(M), TASA, SAWA			
Custom mode	•	•	-	-
Loudness scales	selectable or fixed depending on Loudness standard: <ul style="list-style-type: none"> <li>• EBU+9: +9 .. -18 LU</li> <li>• EBU+3: +3 .. -18 LU</li> <li>• EBU+18: +18 .. -36 LU</li> <li>• EBU+9a: 14 .. -41 LUFS</li> <li>• EBU+18a: -5 .. -59 LUFS <ul style="list-style-type: none"> <li>• EBU0: 0 .. -60 LUFS</li> <li>• ITU+9: +9 .. -18 LU</li> <li>• ITU0: 0 .. -30 LKFS</li> <li>• ATSC0: 0 .. -60 LKFS</li> <li>• ATSC0a: 0 .. -30 LKFS <ul style="list-style-type: none"> <li>• TASA</li> <li>• SAWA</li> </ul> </li> </ul> </li> </ul>			
Weighting filter	K filter acc. to ITU BS.1770 fixed			
Target Level	only for Loudness standards <b>ITU, EBU, ATSC, ARIB, CALM, OP-59, AGCOM:</b> <ul style="list-style-type: none"> <li>• -23 LUFS; adjustable in the range from -10 to -30 LUFS in steps of 1 LUFS <b>or</b></li> <li>• -24 LKFS; adjustable in the range from -10 to -30 LKFS in steps of 1 LKFS (depending on selected standard)</li> </ul>			
Reference level	only for Loudness standards <b>Leq(M), TASA, SAWA:</b> <ul style="list-style-type: none"> <li>• Leq(M): 78 dB; adjustable in the range from 68 to 88 dB in steps of 1 dB <ul style="list-style-type: none"> <li>• TASA: 85 dB fixed</li> <li>• SAWA: 82 dB fixed</li> </ul> </li> </ul>			
Weighting filter	only for Loudness standards <b>Leq(M), TASA, SAWA:</b> linear, A (Leq(A)), C, CCIR (Leq(M)), ITU BS.1770 (k)			
Time & Gate Momentary	- Window Time	in <b>ITU, EBU, ATSC, ARIB, CALM, OP-59, AGCOM</b> fixed: 400 ms		
		in Custom mode selectable in the range from 200 ms to 1000 ms in steps of 100 ms	-	-
	- Integration Time	IEC 1000 ms slow: fixed in Leq(M), TASA, SAWA		
		in <b>Custom</b> mode selectable: IEC 125 ms Fast, 250 ms (IRT), 500 ms, 750 ms, IEC 1000 ms Slow, 1500 ms, 2000 ms	-	-

	<b>TMR7</b>	<b>TMR7OEM</b>	<b>TMR7-Radio</b>	<b>TMR7-Mount</b>
Time & Gate Short				
Integration Time	in <b>EBU, ARIB, Leq(M), TASA, SAWA</b> fixed: 3 s			
	in <b>Custom</b> mode and in <b>ITU, ATSC, CALM, OP-59, AGCOM</b> selectable in the range from 1 to 20 s in steps of 1 s	in <b>ITU, ATSC, CALM, OP-59, AGCOM</b> selectable in the range from 1 to 20 s in steps of 1 s		
Time & Gate Integrated				
- Silence Gate	in <b>EBU, AGCOM</b> fixed: -70.0 LUFS/LKFS in <b>Leq(M), TASA, SAWA</b> fixed: off			
	in <b>ITU, ATSC, ARIB, CALM, OP-59</b> selectable: -70.0 LUFS/LKFS or off			
	in <b>Custom</b> mode selectable in the range from -80.0 to -40.0 LUFS/LKFS in steps of 0.5 LUFS/LKFS, switchable	-	-	-
- Relative Gate	in <b>EBU</b> fixed: -10.0 LU in <b>AGCOM</b> fixed: -8.0 LU in <b>Leq(M), TASA, SAWA</b> fixed: off			
	in <b>ITU, ATSC, ARIB, CALM, OP-59</b> selectable: -10.0 LU or off			
	in <b>Custom</b> mode selectable in the range from -40,0 to 0 LU in steps of 0.5, switchable	-	-	-
Channel weighting	in <b>ITU, EBU, ATSC, ARIB, CALM, OP-59, AGCOM, Leq(M), TASA, SAWA</b> fixed: 0.0 dB (L, R)			
	in <b>Custom</b> mode selectable between -6 and +6 dB in steps of 0.5 dB	-	-	-
Tolerance levels				
- TP Headroom	-9.0 dB; adjustable from 0 to -20 dB in steps of 0.1 dB			
- TP Over threshold	-1.0 dBTP; adjustable from 0 to -4 dBTP in steps of 0.1 dBTP			
- M high	+1.0 LU; M tolerance above Target Level adjustable from 0 to +10 LU in steps of 0.1 LU			
- M low	-1.0 LU; M tolerance below Target Levels adjustable from 0 to -12 LU in steps of 0.1 LU			
- S high	+1.0 LU; S tolerance above Target Level adjustable from 0 to +10 LU in steps of 0.1 LU			
- S low	-1.0 LU; S tolerance below Target Levels adjustable from 0 to -12 LU in steps of 0.1 LU			
- I high	+1.0 LU; I tolerance above Target Level adjustable from 0 to +10 LU in steps of 0.1 LU			
- I low	-1.0 LU; I tolerance below Target Levels adjustable from 0 to -12 LU in steps of 0.1 LU			

	TMR7	TMR7OEM	TMR7-Radio	TMR7-Mount
<b>Test Time Control</b>				
Functions	activatable with license SW20002		integrated	
Start				
- Functions	<ul style="list-style-type: none"> <li>• Autostart after preset load</li> <li>• Autostart with gate</li> <li>• Autostart with gate and autoreset</li> <li>• manually via keys or GPI</li> </ul>			
	with license SW20008 active also:	-	-	
	<ul style="list-style-type: none"> <li>• Timecode</li> <li>• Timecode with recalculation</li> </ul>			
- Level for gate	-70.0 LUFS/LKFS; adjustable from -85 to -10 LUFS/LKFS in steps of 0.5 LUFS/LKFS			
Stop				
- Functions	<ul style="list-style-type: none"> <li>• manually via keys or GPI</li> <li>• Autostop with gate</li> <li>• Autostop with gate and time</li> </ul>			
	with license SW20008 active also:	-	-	
	Timecode			
- Level for gate	-70.0 LUFS/LKFS; adjustable from -85 to -10 LUFS/LKFS in steps of 0.5 LUFS/LKFS			
- Time for gate	1 s; adjustable from 1 to 15 s in steps of 1 s			

### Loudness Range (LRA)

Functions	activatable with license SW20002	integrated
Display	graphical display of the Loudness Range	
Mode	selectable: LRA Bar, MagicLRA, MagicLRA + I, MagicLRA + I + Num	
Scale range	selectable: 6 LU, 10 LU, 20 LU, 30 LU	
LRA low 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	
LRA high range	depends on the selected scale range and the spread of the comfort zone	
Colors	selectable for each range	

### SPL-Meter

	activatable with license SW20002	integrated
Display	<ul style="list-style-type: none"> <li>• Bargraphs for each single channel (can be combined with PPM bargraphs)</li> <li>• Bargraph for SPL sum of the channels</li> </ul>	

	<b>TMR7</b>	<b>TMR7OEM</b>	<b>TMR7-Radio</b>	<b>TMR7-Mount</b>
Reference point	adjustable in the range from 68 to 88 dB in steps of 1 dB			
Weighting	Linear, A (Leq(A)), C, CCIR (Leq(M)), k			
Integration time	Fast (125 ms), Slow (1 s)			

### RTA - Real Time Analyzer

Functions	activatable with license SW20003	integrated
	Input selection, Peakhold on/off, A-, C-weighting or Linear, Integration time, set reference, scaling, rrequency range, bargraph arrangement, display-hold	
Input sources	selectable: single channels, Stereo pairs (depending on selected mode)	
Frequency range	<ul style="list-style-type: none"> <li>• Norm: 20 Hz to 20 kHz, additional band &gt; 20 kHz switchable</li> <li>• LF: 5 Hz to 5 kHz</li> </ul>	
Number of bands	<ul style="list-style-type: none"> <li>• 1/3-octave: 31 bands, filter acc. to IEC 225 class 2</li> <li>• 1/6-octave: 61 bands</li> <li>• 1/12-octave: 120 bands</li> </ul>	
Weighting filter	selectable: Linear, A, C	
Peakhold indicator	1 s, 2 s, 4 s, 10 s, 20 s, 30 s, manual reset or off	
Measuring range	max. 45 dB	
Scaling	3, 6, 9 dB	
Integration time (ballistics)	Impulse, Fast, Slow, Peak (10 ms)	

### Moving Coil (needle instruments only available in Stereo mode)

Functions	activatable with license SW20006	integrated
Display type	PPM (L/R), PPM (M/S), VU, Loudness, PPM + Loudness (L/R; M, S or I), selectable	
PPM		
- Channel arrangement	Dual, Dual + M/S horizontal, Dual + M/S vertical, Stereo horizontal, Stereo vertical	
- Scales	<ul style="list-style-type: none"> <li>• BR IIa: 7..1</li> <li>• BR IIa ext: 7..1</li> <li>• BR IIb: +12..-12 dB</li> <li>• BR IIb ext: +12..-12 dB</li> </ul>	
- Integration time	Sample, 0,1 ms, 1 ms, 10 ms, 20 ms, 150 ms	
- Headroom Ref.	-10 dB; adjustable from 0 to -20 dB in steps of 1 dB	
- S-Mode	only available, if M/S type is selected: M3, M6	
- Peak indicator	off, Peak, True Peak, BR Peak	
- BR Peak Threshold	<ul style="list-style-type: none"> <li>• for BR IIa: 6 dB; adjustable from 4 to 7 dB in steps of 1 dB</li> <li>• for BR IIb: 6 dB; adjustable from 0 to 12 dB in steps of 1 dB</li> </ul>	
VU		
- Channel arrangement	Stereo horizontal, Stereo vertical	
- Scale	VU Digital (-20 to + 3 dB)	

	TMR7	TMR7OEM	TMR7-Radio	TMR7-Mount
- Lead	0 dB; adjustable from 0 to 12 dB in steps of 1 dB			
- Peak indicator	off, Peak, True Peak			
Loudness	available when SW20002 is active		integrated	
- Channel arrangement	Dual, Stereo horizontal, Stereo vertical			
- Scales	acc. to Loudness settings			
- Integration time	acc. to standard			
- Peak indicator	off, no selectable option available			
PPM + Loudness	available when SW20002 is active		integrated	
- Channel arrangement	Dual-PPM (as described above) with additional Loudness display (BBC mode) for M, S or I (selectable) in one instrument			
- 5 Scales	<p><b>PPM:</b></p> <ul style="list-style-type: none"> <li>• BR IIa: 7..1</li> <li>• BR IIa ext: 7..1</li> <li>• BR IIb: +12..-12 dB</li> <li>• BR IIb ext: +12..-12 dB</li> </ul> <p><b>each with Loudness:</b></p> <ul style="list-style-type: none"> <li>• +9 to -9 LU fixed (mid of scale corresponds to Target Level of selected Loudness standard)</li> </ul>			
- Integration time	Sample, 0,1 ms, 1 ms, 10 ms, 20 ms, 150 ms			
- Headroom Ref.	-10 dB; adjustable from 0 to -20 dB in steps of 1 dB			
- Peak indicator	off, Peak, True Peak, BR Peak			
- Loudness type	M, S, I, selectable			
Numerical display	switchable in all modes			

### Timecode Reader

Functions	activatable with license SW20008	-	-
Display	numerical display of LTC	-	-
Mode	Timecode as domain in separate audio group	-	-
Input	one digital channel	-	-
Colors	selectable, 32 colors	-	-

### Loudness Recalculation

Functions	activatable with license SW20002 and SW20008	-	-
Display	numerical display of <ul style="list-style-type: none"> <li>• current timecode</li> <li>• start time &lt; current timecode &lt; stop time (with activated recalculation)</li> </ul>	-	-
Start			
- Functions	additional test time control: <ul style="list-style-type: none"> <li>• control via timecode</li> <li>• control via timecode and recalculation</li> </ul>	-	-



	TMR7	TMR7OEM	TMR7-Radio	TMR7-Mount
Stop				
- Functions	additional test time control: <ul style="list-style-type: none"> <li>fixed to timecode, when start function is set to a timecode option</li> </ul>		-	-

### Logging

Functions	activatable with license SW20002 and SW20014 <ul style="list-style-type: none"> <li>Logging of Loudness and TruePeak data of two audio groups               <ul style="list-style-type: none"> <li>Data storage on USB flash drive</li> <li>Transmission to LQL PC software via IP</li> <li>Primary and secondary limits (individual markers) for Mmax, Smax, I and TPmax</li> <li>Data collection control automatically via LQL or manually via key</li> </ul> </li> </ul>	-	-
Mode	selectable: off, USB, IP	-	-
Display	Status: LQL access, USB mode, deactivated	-	-
Identification for network	definable: Device name, password	-	-
Key functions for USB	USB run, USB close (and save data)	-	-

### Chart

Functions	activatable with license SW20002 and SW20014	integrated
Bargraph	<ul style="list-style-type: none"> <li>Horizontal running for TP, M, S, I (selectable)</li> <li>Individual color selection for normal, operation range, Headroom, Over, invalid (depending on selected value)</li> <li>Color change indicates common quality of the Loudness values</li> </ul>	
Graph	<ul style="list-style-type: none"> <li>Progress (value over time) of <b>up to 4 selectable values</b> (TP, M, S and I) <b>as lines</b>, points, rectangles or <b>1 value as colored area</b> continuously drawn on a coordinate system</li> <li>individual color selection or colors of bargraphs</li> <li>Switchable tolerance indicator</li> </ul>	<ul style="list-style-type: none"> <li>Progress (value over time) of <b>the selected value</b> (TP or M or S or I) <b>as colored area</b></li> <li>Colors of bargraphs</li> <li>Tolerance indicator</li> </ul>

	<b>TMR7</b>	<b>TMR7OEM</b>	<b>TMR7-Radio</b>	<b>TMR7-Mount</b>
	<ul style="list-style-type: none"> <li>• Switchable position of the Relative Gate (when activated)</li> <li>• Switchable vertical Integrated bargraph</li> </ul>			
Time range	Time grid adjustment: increase/decrease in steps of one or ten units, or magnified to available width			
Time range presets				
- Auto stretch	Automatic stretch of a stopped loudness measurement to the available width of the instrument's window, switchable (except when controlled via timecode)		Automatic stretch of the selected time unit to the available width of the instrument's window	
- Hours	0 h; adjustable from 0 to 3 h in steps of 1 h			
- Minutes	1 m; adjustable from 1 to 59 min in steps of 1 min			
Time select	<ul style="list-style-type: none"> <li>• Marker for current time period</li> <li>• Increase or decrease of the marker in step sizes corresponding to the current time grid</li> <li>• Shift of the marker and magnification of the content</li> </ul>			
Tolerance levels	adjustable, see Loudness			