Waves WLM

The battle for the hearts and ears of viewers has focused of late on the need to control loudness. Waves is the latest to join the fray with a metering tool to help. ROB JAMES

*A*fter more than 30 years of debate loudness control is now well established. In some countries there is even legislation governing loudness levels and delivery requirements now include loudness targets and weighting parameters routinely. EBU Recommendation (R128) based on ITU-R BS.1770, is now being adopted by European broadcasters. In the US the ATSC has implemented A/85 loudness measurement also based on ITU-R BS.1770. The EBU gold-plated the ITU standard by adding Programme Loudness, True-Peak Level and Loudness Range to the requirements. As a result of all this activity a rash of loudness metering devices and loudness legalisers have appeared and Waves has now brought the WLM, or Waves Loudness Meter, to the party (native US$299).

Available in TDM, RTAS and Audio Units versions with individual modules for mono, stereo and 5.1, WLM supports the main current loudness standards; EBU R-128, ITU-R BS.1770-2 and ATSC A/85. Three measurement methods are available: EBU uses foreground sound as the loudness 'anchor'; LM1 measures and averages loudness across the entire programme; and Dial uses dialogue as the loudness anchor i.e. it only measures and averages loudness when the algorithm detects dialogue.

I auditioned WLM on a PC running Pyramix. Within the wrapper provided by the host application all versions appear the same with the familiar WaveSystem Toolbar at the top. The Waves icon opens the 'about' box, undo and redo icons operate on the 32 most recent actions, the left and right arrows load the previous or next preset, Load and Save do just that for presets, the '?' opens the user manual and the minus and plus buttons hide or show the settings panel at the bottom. Factory presets are permanent and cannot be overwritten, User presets can be overwritten or deleted. There is also a Setup file option and a Setup file can contain many presets. This is useful when there are multiple instances of WLM and also for moving presets between systems.

In the metering section three large numeric displays show Short Term, Long Term and Range. Below these, two counters show the number of Short Term Unders and Overs that deviate from the specified values. The Play and Pause buttons determine when measurements will be integrated into the long-term loudness range i.e. when 'Play' is active, loudness is measured and averaged for contribution to the Range display. If the Follow Transport button is lit then the Loudness Range measurement and elapsed time counter start and stop following the host application transport controls. The timer counter shows the length of time measurement and integration have been active since the last reset. The Reset button resets the Long Term, Range, Momentary and True Peak counters and the Overs and Unders counters and sets the timer back to zero.

Momentary and True Peak values are displayed as horizontal bargraphs with numeric maximum counters to the right. These meters and counters show the overall value taking into account all channels measured. At the bottom of the user interface the Settings Panel can be collapsed when not required.

Method offers the choice of EBU, LM1 and Dial while a drop-down list shows the available weightings (ITU 1770, Leq A, B, C and M) and Channel determines which channel(s) are being measured. Short Max sets the Short term maximum loudness threshold. When this value is exceeded the relevant display turns red for the duration of the over and remains red for five seconds after loudness returns below the threshold. Similarly, Short Term Min sets the minimum acceptable loudness. In this case the counter display turns light blue when the value is not met or exceeded. True peak Max sets the maximum permissible True Peak level while Target sets the desired loudness level. On the right, the Custom Pre Filtering section offers low pass and high pass filters that operate before the metering. This can be useful when considering material for devices with restricted bandwidth.

The Momentary Scale drop-down enables the bargraph scale to be determined from a choice of: LKFS -6 to -54; LU 18dB 17 to -31; LUFS 18dB -6 to -54; LU 9dB 9 to -18; and LUFS 9dB -14 to -41.

Logging gives the choice of Real-Time CSV File or Off-Line CSV file and logging in this way produces data that can be analysed in a spreadsheet and graphed or used by other applications. If the Real-Time option is chosen, a file to contain the data must be created in advance. Logging information is written to the file in Real-Time during measurement. This option is intended for logging on-going material, e.g. a transmission stream.

The off-line option also requires a file to be created in advance of measurement. In this case, the file is only populated when the plug-in instance is terminated. Up to four hours of information will be logged and this method is best suited to checking premixed files.

Waves has addressed the issue of providing a Loudness History graph by interacting with the host application's automation system. If the user displays the 'Loudness Warning' parameter on an automation track or lane then a line in the middle indicates loudness within range. Deviations are shown as blocks above or below this line for overs and unders respectively. This is a very useful display since it enables the user to see at a glance exactly where there are loudness problems with the mix and to quickly locate and fix the problems. Conversely, it doesn't give precise loudness values, just indicates over or under.

WLM is a well thought out loudness meter. However, I hope Waves will use this development as the jumping off point for developing a complete solution that can also fix loudness problems. While I can see the logic in single Momentary and True Peak bargraphs I would like to have seen the option of per channel True Peak display. Although the link to the transport controls is useful what is really needed is a linkage to host transport timecode so that the time integrated displays are useful in a postproduction environment during rock-and-roll mixing i.e. they show the final loudness result as this is built up during mixing. In defence of the WLM I am unaware of any alternative that offers this yet.

The road to hell is, they say, paved with good intentions. Loudness control is obviously a good thing but let's not kid ourselves. Although the standards provide a toolkit to enable the well intentioned to improve the listening experience of audiences it is possible to work within the rules but not the spirit and still be loud. Loudness monitoring and control is here to stay. Waves WLM is a relatively painless way of checking compliance. ■

PROS Easy to use; clever use of host automation to display loudness deviation; covers the bases.

CONS No separate loudness graph; no per channel True Peak metering; requirement to create file before logging.

EXTRAS Producer/engineer/mixer Jack Joseph Puig has again joined forces with Waves

to introduce the PuigChild Hardware Compressor. Modelled on a rare, pristine Fairchild 670 from Puig's personal collection, the PuigChild captures the nuances of the original. Featuring dual mono, linked and lateral vertical stereo modes, 16/24-bit digital I-O and A-D/D-A convertors it is housed in a rugged 2U.

The NLS Non-Linear Summing plug-in brings users the analogue summing sound of three legendary consoles. NLS captures the sound of the SSL 4000G of Mark 'Spike' Stent, the EMI TG12345 Mk 4 of Mike Hedges, and the Neve 5116 custom-made for Yoad Nevo. Waves modelled more than 100 individual channels in recreating the colour, character, and behaviour of each input and summing bus amp.

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