LM100 Release Notes –
Firmware version 1.4.0.10
Universal Remote version 1.4.0.3

Release Date – 2012-AUG-30

- This document provides information about the Dolby LM100 V1.4.0.10 firmware release and Universal Remote V 1.4.0.3, including an overview of the product features, operational considerations, and known issues.
- Please see the online help and user manual for detailed product specifications and operating instructions.
- If you have questions please email: broadcastsupport@dolby.com

Installation and upgrade procedure

1. The Universal Remote installer will default to installing the application and associated files in the following location:
   `C:\Program Files\Dolby Laboratories/Universal Remote`
   and will create this folder structure if it does not already exist. The installer will install the LM100 firmware in the following location:
   `C:\Program Files\Dolby Laboratories/Universal Remote\LM100 Firmware`
   This folder contains all the files necessary to upgrade your LM100 unit. You'll need the remote cable that came with the unit to upload the firmware in the LM100.
2. To upgrade your LM100, follow these simple steps:
   - Place the unit into "upgrade mode" by holding the "Setup" button during a power cycle. Alternatively, you can reboot the unit by holding three buttons –Shift, right arrow, Esc- down for a few seconds and then releasing them.
   - Connect one end of the remote cable to an available serial port on your PC and the other end to the front panel remote port on the LM100.
   - Double click the Dolbyload.exe application found in the LM100 Firmware folder and set the correct COM port (only ports 1-4 will be valid) and set the baud rate to 115.2k.
   - Click on the folder icon and browse to the LM100 Firmware folder to select the *.dld file for upload.
   - ***Note*** If you are ***not*** running a V1.4x build in your LM100, you will need to run and install the `LM100patch.dld` file prior to installing the main `LM100.dld` upgrade file.
   - Click on the "play" triangle icon at the top of the Dolbyload application to begin the upgrade process. You should see activity on both the upgrade PC and the front panel display of the LM100 itself. If you do not see activity on the LM100 display, there is no communication between the PC and the LM100, and you will need to diagnose the

issue before you can upgrade your unit. Make certain that you have selected the proper COM port and baud rate settings.

3. Once the LM100 has completed the upgrade process, check the new software version installed by pressing the left arrow once to display the installed version number.

New Features

- Added support for EBU Mode loudness measurement
- Added support for ITU-R BS.1770-2 mode loudness measurement
- Added Loudness Range measurement (only in EBU Mode and ITU-R BS.1770-2 mode)
- Added Momentary Maximum Loudness measurement (only in EBU Mode)
- Added a Short Term Window configuration (only in ITU-R BS.1770-2 mode)
- Added Absolute and Relative meter scale display methods for loudness measurements
- Added a Display Resolution configuration.
- Added support for Windows 7 OS (Universal Remote)
- Added “Max True Peak Since Reset” display (Universal Remote)
- Added System Status tab (Universal Remote)

Special Details

- EBU Mode and ITU-R BS.1770-2 mode relative gate is set to -10dB and is not user configurable
- Short term window is locked at 3 seconds in EBU Mode, locked at 10 seconds in Leq(A) mode and ITU-R BS.1770-1 mode, and selectable between 3 seconds and 10 seconds in ITU-R BS.1770-2 mode
- Dialogue Intelligence is only available in Leq(A) mode and ITU-R BS.1770-1 mode. Dialogue Intelligence is forced and locked to OFF in EBU Mode and ITU-R BS.1770-2 mode
- Channel Select is only available in Leq(A) mode and ITU-R BS.1770-1 mode. Channel Select is forced and locked to ALL in EBU Mode and ITU-R BS.1770-2 mode
- Digital Loudness Reference value is forced and locked to -23LUFS in EBU Mode, forced and locked to -24LKFS in ITU-R BS.1770-2 mode, forced (but not locked) to -24LKFS in ITU-R BS.1770-1 mode, and forced (but not locked) to -24dBFS in Leq(A) mode
- Measurement Method defaults to Infinite Term when selecting EBU Mode or ITU-R BS.1770-2 mode. Measurement Method defaults to Short Term when selecting Leq(A) more or ITU-R BS.1770-1 mode

Fixes

- Dialnorm view, when measuring analog input, has been renamed “suggested dialnorm”
- Dialnorm value within encoded bitstreams is logged in loudness logs
- The True Peak channel ID is accurate for Dolby Digital input signals
- Universal Remote and LM100 menu items harmonized

- True Peak channel ID reports the correct channel on both the front panel and within Universal Remote
- Loudness measurement and Momentary max measurement are updated when in RF input mode
- Universal Remote: When a dialnorm threshold alarm is logged, the listed different value is correct
- Dialnorm values in loudness logs, generated by Universal Remote, are consistent with value displayed in the Universal Remote GUI
- Sample and True Peak indicators include the LFE channel in the measurement
- Input clipping alarm works properly with Dolby E inputs
- Over level and under level loudness alarms now work correctly with Dolby E inputs
- Dolby E Program Description text now available on front panel UI and Universal Remote
- Speech measurement are logged in csv files when in ITU mode
- Measurement unit terminology are correct in both the main UI and log summary panel
- The gating mechanism in EBU and ITU-2 modes has been improved to ensure that the measurement does not decrease over time after the signal goes silent or is paused.

Known Issues

- Universal Remote generates log messages that an overrun was detected, leading to suspected packet corruption due to serial communication issues from the host PC. Dedicated add-on serial ports (PCMCIA, CF, etc.) are more robust against this issue
- Loudness measurement graph offset after Y-axis scaling
- Inconsistent behavior has been observed when using USB-to-RS232 adapters to communicate between a Windows 7 PC running the Universal Remote and the LM100 hardware. For mission critical applications, a dedicated or add-on serial port is advised.
  Tested USB-to-RS232 adapters are:
  - Digi-International Edgeport/8
    Driver ver 5.58.0
  - Ultimate Solutions: SeaLINK +232 USB to RS-232 Converter
    Driver ver 2.08.02.0 (Date 7-12-2010)
- In the Universal Remote, DolbyE signal inputs of 4 to 8 channels can cause the client refresh to be very sluggish. If the issue is encountered, try changing the latency of the adapter using the following procedure:

    - Windows 7 procedure (do this prior to launching the Universal Remote):
        - Click the 'Start' button
        - Select Control Panel
        - Select Device Manager and hit Enter
        - Open the tree under Ports (COM & LPT)
        - Right-click on the adapter in question and select Properties
        - Select the Port Settings tab
        - Click the Advanced... button
        - Look for the Latency Timer (msec) dropdown. It will likely be at the default of 16ms.
        - Change this to 4ms.
    - The process is similar for Windows XP, where the Device Manager is accessed via Start Menu -> Control Panel -> System -> Hardware -> Device Manager.
    - Note: if the option to change the Latency Timer is not available, then it is likely the adapter does NOT use an FTDI chip, and therefore this solution does not apply.
- The Front panel UI True Peak measurement in both EBU and ITU-2 modes will not register peaks above 0.0LKFS/LUFS. The True Peak measurement reporting in the Universal Remote application will register above 0.0LKFS/LUFS and should be relied upon in these instances.