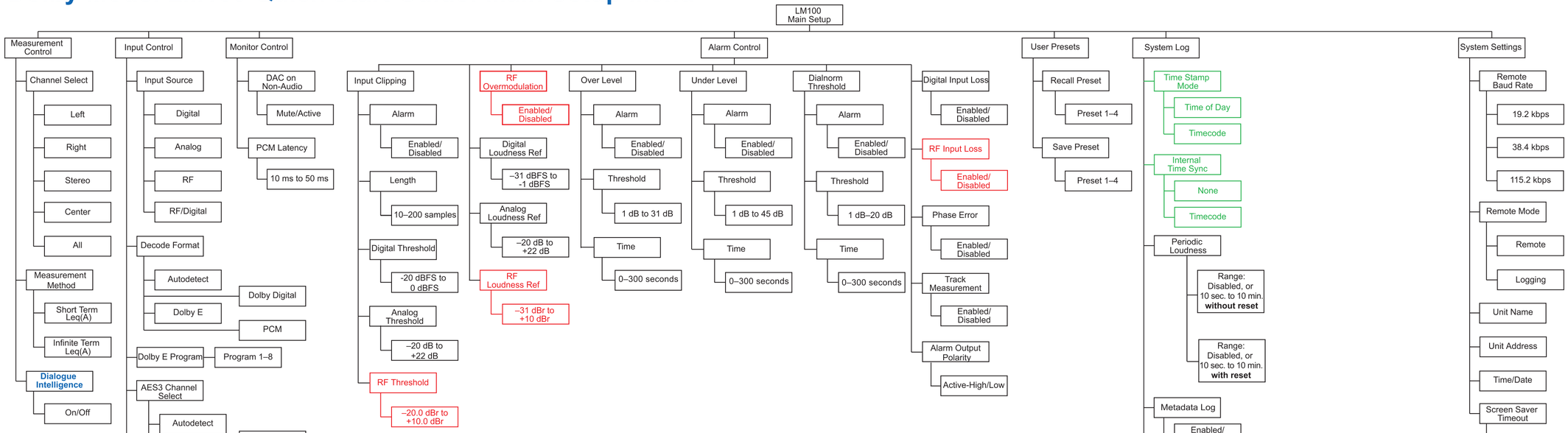
# Dolby Model LM100 Quick Start Guide: Main Setup Menu




## Dialogue Intelligence

Dialogue Intelligence allows the LM100 to automatically measure only the portions of the input signal that match the characteristics of dialogue. This powerful feature gives you the ability to easily quantify the level of dialogue within broadcast programs.

When Dialogue Intelligence is enabled, the measurement is based solely on the portions of the input signal recognized as having the characteristics of speech. Portions of the input signal that do not primarily contain the characteristics of dialogue are not included in the measurement value.

Note: The Dialogue Intelligence algorithm returns a dialogue-based measurement value only when the input signal consists primarily of dialogue. On rare occasions, the algorithm ignores a section of input that contains dialogue but also coincides with other types of signals and spectra, such as loud music or effects. This behavior increases the accuracy and confidence of the dialogue-based measurement value.

## Infinite Measurement Mode

Infinite measurement mode (without Dialogue Intelligence enabled) conforms to the specifications of IEC 60804 (2000-10): Integrating-Averaging Sound Level Meters. In this mode, the measurement value is the long-term A-weighted level, Leq(A), for the entire period since the measurement was last reset.

Enabling Dialogue Intelligence allows the operator to simply quantify all the sections of the program that only contained dialogue and use the ending measurement value for analysis and/or normalization purposes. This value is also commonly used to set the dialogue normalization parameter within Dolby Digital and Dolby E bitstreams.

Infinite mode is typically used when it is possible to measure the entire duration of the program. For example, all 30 seconds of a commercial or the whole two hours of a movie. It provides the most accurate measurement, as it is able to average over the complete program length.

## Short-term measurement mode

Short-term mode displays the Leq(A) measurement value for the previous ten-second period as a “sliding-window” type of function. For example, the first measurement value is for the time between 0 and 10 seconds, the next between 1 and 11 seconds, next between 2 and 12 seconds, and so forth. As the short-term measurement only considers the last 10 seconds of program material, the measurement value has the potential (depending on the program) to be much more dynamic than that measured in infinite mode. (Highly processed channels and programming will most likely not exhibit this type of behavior.)

| Short-Term Mode Applications | Infinite Mode Applications |
|---|---|
| **Live broadcast event** | **Program ingest** |
| **Postproduction and/or mixing with audio engineer** | **Postproduction** to check conformance with delivery requirements, including dialnorm |
| **Quality Control**: measuring short-term program dynamics (or the short-term dynamics in dialogue level when Dialogue Intelligence is enabled) | **Quality Control**: measuring overall program for normalization and/or dialnorm provisioning purposes (dialogue-based measurement when Dialogue Intelligence is enabled) |
| **Analog Cable Services**: audio modulator deviation adjustments for cable head-ends (dialogue-based measurement when Dialogue Intelligence is enabled) | **Digital Cable Services**: to verify the accuracy of the dialnorm value within a Dolby Digital bitstream. |
| | **Digital Simulcast Services**: to determine an appropriate dialnorm value to utilize (in your local encoder) for each digital simulcast service. |
| | **Digital Ad-Insertion (DPI) Encoding**: to determine an appropriate dialnorm value to utilize (in your local encoder) for each spot created. |

## Logging Events and Measurements from the Unit Front Panel

The LM100 can log events and loudness measurements to any external device or application that can receive ASCII text strings through a serial interface; HyperTerminal or COMit for example. Select Logging as the Remote mode under the System Setting submenu of LM100 Main Setup to activate this feature, and then select the Periodic Loudness measurement interval under the System Log menu.

The kind of loudness measurement, short-term or infinite, logged by the LM100 unit is determined by the measurement method selected on the Measurement Control submenu.

Either the RS-232 connector on the front panel or the RS-485 on the rear panel can be used. When the front RS-232 connector is in use, the rear panel connector is disabled.

Note: Either connector can be used to download and install software updates in addition to logging and remote control functions.

## Logging Events and Measurements from the Universal Remote Application

The Dolby Universal Remote application automatically logs events and measurements, including both short-term and infinite loudness measurements. For more detailed information on the application’s logging features and procedures, refer to the online help.

**Note:**
**Product features highlighted in red apply to LM100-NTSC only.**
**Product features highlighted in green apply to LM100-LTC only.**

For additional information on Dolby’s broadcast loudness solutions, see *www.dolby.com/professional/pro_audio_engineering/solutions_broadcastloudness.html.*

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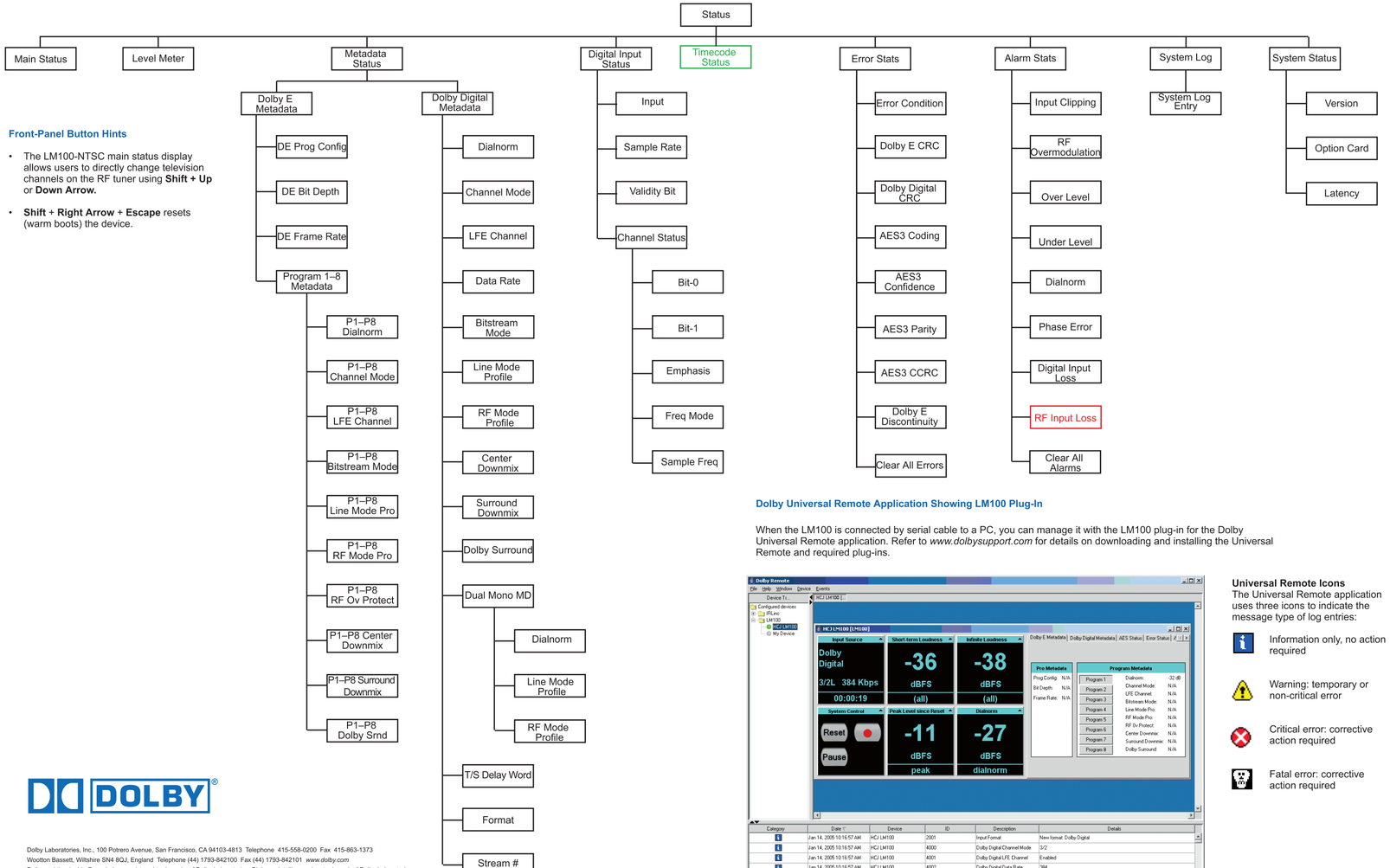
# Dolby Model LM100 Quick Start Guide: Status Menu and Display Modes




### Front-Panel Button Hints

- The LM100-NTSC main status display allows users to directly change television channels on the RF tuner using **Shift + Up** or **Down Arrow.**
- **Shift** + **Right Arrow** + **Escape** resets (warm boots) the device.

### Dolby Universal Remote Application Showing LM100 Plug-In

When the LM100 is connected by serial cable to a PC, you can manage it with the LM100 plug-in for the Dolby Universal Remote application. Refer to *www.dolbysupport.com* for details on downloading and installing the Universal Remote and required plug-ins.




### Universal Remote Icons

The Universal Remote application uses three icons to indicate the message type of log entries:

- Information only, no action required
- Warning: temporary or non-critical error
- Critical error: corrective action required
- Fatal error: corrective action required

### Measuring Dolby Digital or Dolby E Data Stream

When measuring Dolby® Digital or Dolby E signals, the default display shows the dialnorm setting value within the metadata stream on the right. The small "s" in the upper left corner of the current measurement display indicates that the LM100 is in short-term measurement mode. Infinite measurement is indicated with an "I".


### Listening for Dialogue and Displaying Peak Measurement

The ear symbol in the center of the screen indicates that the LM100 is listening for dialogue after a signal interruption or a measurement reset. When measuring Dolby Digital and Dolby E signals, press Enter to display an instantaneous unweighted peak measurement instead of the dialnorm value display. This is the largest peak value currently measured from any individual program channel. This peak meter has an instant attack, a peak hold of .75 seconds, and a constant decay of 12 dB per second following the peak hold.


### No Dialogue Detected After a Measurement Reset

If dialogue has not been detected within four seconds after a measurement reset, the center of the screen displays the phrase "No Dialogue". The –18 dBFS value in this example gives the current non-speech-based measurement.


### No Dialogue Currently Detected after Initial Dialogue Detection

During this condition the last dialogue value detected, in this example –26 dBFS, flashes. The smaller value, –18 dBFS, gives the current non-speech-based measurement. During this condition the time counter indicates the elapsed time since speech was last detected. In this example 18 minutes and 21 seconds have passed since dialogue was last detected.


### Measurements Utilizing Analog Input

When analog input is selected and a signal is being measured, the main status screen displays the speech-based loudness measurement on the left and the instantaneous unweighted peak value on the right. Measurements of analog input are expressed in dBu or dBr depending on the Analog Input Calibration setting.


### Using the Suggested Dialnorm Feature with Analog Inputs

When measuring analog signals (that is, not the RF input), you can access the "suggested dialnorm" value by pressing the Enter key twice while on the main status screen. The screen displays a suggested dialnorm value for setting the dialogue level parameter in downstream Dolby Digital or Dolby E encoding equipment.

Note: The validity of this "derived" value is dependent on having the proper analog input calibration setting.


### Measuring RF Input

Measurements of RF input streams are expressed in dBr, where 0 dBr is equivalent to 100% modulation (25 kHz peak deviation). In this example, the dialogue loudness is 6 dBr below 100% modulation (25 kHz peak deviation) and the instantaneous unweighted peak value is 2 dBr above 100% (25 kHz peak deviation).


### LM100 Front Panel when Measuring PCM

As for other input types, the current measurement is displayed in the center, the peak measurement on the right. Measurements of PCM input streams are expressed in dBFS.


Note: All screenshots shown assume Dialogue Intelligence™ is enabled.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