SurroundMonitor 10800X – Dialnorm Mode - Short Form Introduction

1. General

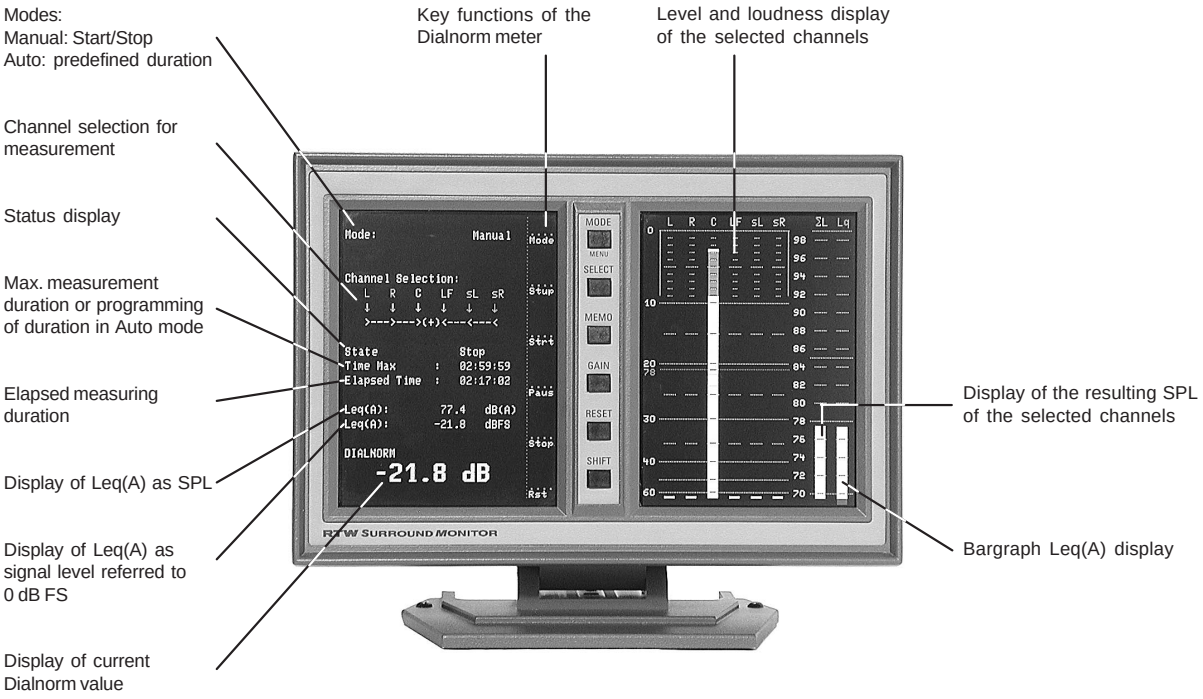
The front panel of the 10800X is divided into two areas: the peak meter display on the right and the multi function display on the left. Functions on this screen can be selected by pressing the MODE key until the desired function comes up:

1. Surround sound analyzer
2. 31-band 1/3 octave RTA
3. 10-fold phase meter
4. 2/4-channel audio vectorscope
5. 5-channel surround vectorscope

And – new:

6. The dialnorm meter

(All of these functions can be disabled. This saves time if you only need two or three different functions. This has been done on the unit which you received: you can select between the surround sound analyzer and the dialnorm meter. You can modify this setting in the PRESET MENU item MODEKEY SETUP)



2. Dialnorm setting

Please make sure, that the dialnorm Mode has been enabled in the MODEKEY SETUP MENU:

1. Press the MODE(MENU) key longer than 3 seconds and enter the MAIN MENU
2. Move the cursor with the DWN key to MODIFY PRESET and press NXT
3. In the PRESET MENU move the cursor up to MODEKEY-SETUP and press NXT
4. Set the entry DIALNORM to ON in the MODEKEY SETUP MENU
5. Press the RET key twice to save the setting and to return to the normal display mode

3. How to operate the dialnorm meter

It´s easy:

1. Select the AUTO or MANUAL MODE
   AUTO: Measurement will be terminated after the time intervall which is displayed in the field TIME INTERVALL. To make an entry, press the STUP key to enter the DIALNORM SETUP MENU. In this menu, move the cursor to INTERVALL TIME, select the digit with the RGT key and step through the values with the NXT key. Maximum time is 2 hrs 59 min 59 s. After that, press the ESC key to return to the normal measurement mode. MANUAL: Beginning and end of the measurement is controlled by the STRT and STOP keys.

2. Select the channel(s)
   Again, use the STUP key to enter the DIALNORM SETUP menu.Move the cursor to the desired channel and select or deselect the channel with the NXT key. (.) means channel off, (+) means channel on. To save your entries in the actual user preset press the RET key and the NXT key in the SAVE MENU. You will see that the selected channels change the color to yellow on the display.

3. Start measurement:
   Press the STRT key to begin the measurement. If you need to interupt the measurement, press the PAUS key. To restart, press STRT again.
   The STOP key always terminates the measurement. Display values can be reset with the RST key.

Please note:

1. The dialnorm meter operates only in the digital domain (because dialnorm reference is defined for digital signals only)
2. Channels 7 and 8 must be set to „SPL“ and „Lq“. If you need to change this setting, please refer to the point „Change the setting of channel 7/8“ a the end of this paper. An error message will appear if the setting is wrong.
3. The 10800X offers A-, C-, CCIR2K and RTW weighing filters. If the dialnorm mode is selected, always the A-weighting filter will be used, indenpendent from the setting in the LOUDNESS MENU.

What can be seen on the bargraph display during dialnorm measurement:

The peak level and the A-weighted SPL of selected channel(s) will be displayed on the peakmeter screen during the dialnorm measurement. You can also see the ratio between the actual Lq(A) on the bargraph on the right hand side and the actual total SPL(A) on the bar left to it.

4. If you want to modify the presets, here is a short description:

Recall a user preset

1. Press the MODE key for more than 3 seconds -> MAIN MENU
2. Press the Dwn key to move the cursor to USE PRESET
3. Press the Nxt-key to select the desired user preset
4. Press ESC to return to the main display mode.

Modify a preset

1. Press the mode key for more than 3 seconds -> MAIN MENU
2. Press the Dwn key to move the cursor to MODIFY PRESET
3. Press the NXT key to enter the MODE SETUP MENU
4. Move the cursor to the desired item which should be modified and press NXT

Save modifications of a preset

1. After you made some changes press the ESC key and enter the SAVE PRESET menu
2. The actual user preset number and name is displayed. If these need to be changed, move the cursor with the UP key to the desired menu item.
3. To save the actual setting into to actual user preset, move the cursor to SAVE and press the RET or NXT key.
4. The actual settings will be saved into to user preset and the unit returns to the normal display mode again.

Select analog or digital inputs

1. Press MODE key for more than 3 seconds -> MAIN MENU
2. Select MODIFY PRESET and press NXT -> PRESET MENU
3. Select MODE SETUP and press NXT -> MODE SETUP MENU
4. Move the Cursor (DWN key) to the channel 1
5. Press NXT to select toggle between the domains
6. To save the setting, press ESC/NXT

(If a surround format has been selected, all channels of the surround programme will have the same domain. E.g. in the 3/2 format, channels 1-6 will always be either analogue or digital. However, channels 7/8 may be set to another domain or to other sources such as SPL and Lq)

Change the setting of channel 7/8

1. Enter the the MODE SETUP MENU as described before
2. Move the cursor down to channel 7
3. Press the NXT key to select the desired function
4. Press ESC to leave the menu and to save the actual setting

Dialnorm – what it means …

Dialnorm has its origins in film sound mixing. The term is an abbreviation of „dialogue normalisation“. Dialnorm describes the normalisation of the dialogue loudness level with respect to a reference value of –31 dB FS in surround applications. The idea behind this scheme is that the perceived total loudness of a mixed audio signal may be determined and kept constant at the listening end by using the dialogue level (optimised for a combination of good intelligibility and minimal nuisance through excessive volumes) with its fixed loudness ratio in relation to music and sound effects as a reference. ATSC standard A/52 specifies the transmission of the dialnorm parameter as part of the meta data. This dialnorm value is determined by means of a method normally used in noise pollution measurement, i.e. by measuring Leq(A), the energy-equivalent A-weighted sound pressure level as defined in IEC 60804. Dialnorm makes use of this standard with the exception that it measures the electrical signal level with reference to 0 dB FS instead of using the sound pressure level with a value of 20 µPa as a reference. The dialnorm value with 0 dB FS as a reference corresponds to the measured Leq(A) value. The concept uses a threshold value of -31 dB FS. In the decoder, dialnorm values above –31 dB FS lead to a level reduction of the total audio signal by (31 dB + (dialnorm)) [dB].

... and what it doesn´t mean!

Dialnorm has no effect on the dynamics of the overall audio programme or the loudness ratios of dialogue, music, and effects. Only the overall level of the programme is controlled in relation to a reference value. The overall level of the programme is reduced if the dialnorm value exceeds this reference value. To this end, the dialnorm value is used by the decoder at the receiving end to control the average overall volume in order to achieve a constant perceived loudness. This correction operates very smoothly and will not be noticed by the listener.

Specifications	
Channel selection for the measurement	L, R, C, LF, sL, sR, individually or in any combination
Measuring modes	MANUAL Start/Stop or AUTO (pre-defined measurement duration)
Max. measurement duration	2 hrs 59 min 59 sec
Measurement	Measurement of Leq(A) with reference to 0 dB FS. Dialnorm reference - 31 dB FS
Standards	IEC 60804 as applicable, IEC 651, ATSC A/52
Type	IEC class 0, as applicable
Displays	Measuring interval, elapsed measuring interval, Leq(A) referred to the SPL, Leq(A) referred to 0 dB FS, Dialnorm, channel selection, measuring mode, status peak level, overall level SPL(A)