17 May 2007

IE-33 / IE-35 / IE-45

RT-60 Manual

This manual assumes that the user has a basic working knowledge of RT-60 and is familiar with standard measurement procedures. For more detailed information on the theory behind RT-60, applications where RT-60 measurements are used, etc., please refer to writings on these subjects that are available in any number of sound system, acoustics, room acoustics, and measurement texts.

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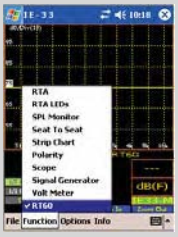
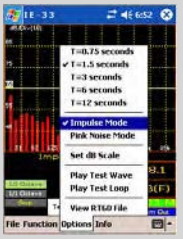
RT60 Test Setup for Impulse Mode

The Impulse Mode requires that the user provide a broad spectrum Impulse Noise source in the room to be tested. Starter pistols and popping of balloons have been used to provide this function. Once setup, the RT60 software automatically starts the RT60 measurement when the impulse noise is detected.

At the conclusion of the test, the resultant decay curve is displayed. The user may then view the calculated ISO 20 and ISO 30 RT60 data. The program allows the user to position two cursors on the curve and determine the RT60.



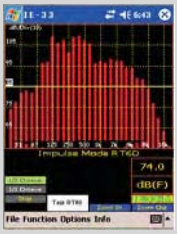
STEP 1 - *Select the RT60 function by pressing the "Function" menu and then selecting "RT60." This will take you to the RT60 "Setup" screen.* ***Please note that the "RT60" menu item will only be accessable if the Optional Software Function Module has been purchased and activated on your unit.***



STEP 2 - *Open the "Options" menu and select the time duration for the RT60 measurement. If you expect the measured RT60 to be greater than 0.75 seconds but less than 3.0 seconds, select "T = 3 seconds" for the measurement duration.*

STEP 3 - *Open the "Options" menu again and select "Impulse Mode."*

STEP 4 - *Select RT60 measurement in 1/3 Octave or 1/1 Octave.*



STEP 5 - *View the ambient noise in the room and adjust the dB range control so the noise appears at the bottom of the screen.*

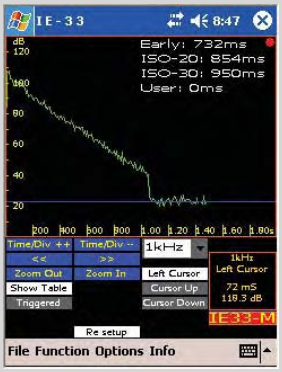
STEP 6 - *Now impulse the room while watching the RTA display. The amplitude of the impulse spectrum should be at least 30 dB above the ambient and rise above the dB "Reference line" on center of the display screen. During the actual test, the Impulse mode measurement will not be triggered unless the Impulse spectrum rises above the dB reference line.*

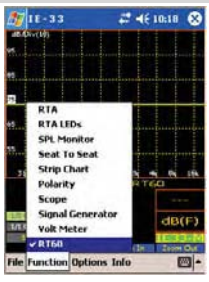
STEP 7 - *Press the "Test RT60" button to go to the* ***Test Screen.***

TEST SCREEN

STEP 8 - *The "Impulse Wait" button indicates that the software is waiting to detect the user generated Impulse and start the test. Now generate the Impulse test signal into the room. After several seconds the "Impulse Wait" button will change it's display to "Triggered", indicating the the test is underway.*

STEP 10 - *At the conclusion of the test, the RT60 Test Data Screen will automatically appear.*

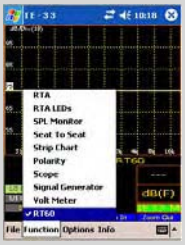




RT60 Test Setup for Pink Noise Mode

The Pink Noise Mode is used when the room under test has an existing sound system or the user will be using a portable sound system. Pink noise generated by the RT60 program is output via the PDA earphone jack to the input of the sound system. The Pink noise is switched on by the user and levels are adjusted so that the Pink noise level is 30 to 40 dB above the ambient noise in the room. The RT60 measurement is performed when the user initates the test. The the Pink noise is turned off and the measurement of sound decaying in the room is instituted.

The resultant decay curve is automatically displayed. The user may then view the calculated ISO 20 and ISO 30 RT60 data. The program allows the user to position two cursors on the curve and determine the RT60.

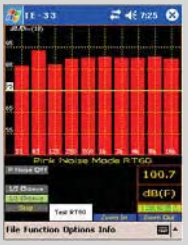


STEP 1 - *Select the RT60 function by pressing the "Function" menu and then selecting "RT60." This will take you to the RT60 "Setup" screen.* ***Please note that the "RT60" menu item will only be accessable if the Optional Software Function Module has been purchased and activated on your unit.***

STEP 2 - *Open the "Options" menu and select the time duration for the RT60 measurement. If you expect the measured RT60 to be greater than 0.75 seconds but less than 3.0 seconds, select "T = 3 seconds" for the measurement duration.*

STEP 3 - *Open the "Options" menu again and select "Pink Noise Mode." Select "Pink Noise" if you plan to utilize a sound system within the room.*

STEP 4 - *Select RT60 measurement in 1/3 Octave or 1/1 Octave.*



STEP 5 - *View the ambient noise in the room and adjust the dB range control so the noise appears at the bottom of the screen.*

STEP 6 - *Turn on the Pink Noise and adjust its level so that it is at least 30 dB above the ambient noise in the room.*

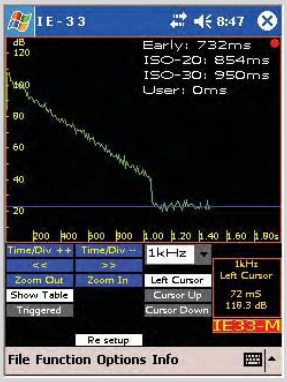
STEP 7 - *Press the "Test RT60" button to turn off the Pink noise and go to the* ***Test Screen.***

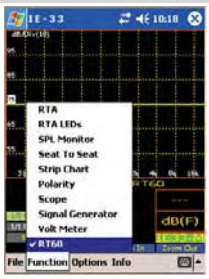
TEST SCREEN

STEP 8 - *Press the* Start Pink *to turn on the Pink Noise in preparation for the test.*

STEP 9 - *Press the* Measure *button to start the test. The Pink Noise will be gated Off and the button will change to* Measuring... *for the duration of the test.*

STEP 10 - *The RT60 Test Data Screen will automatically appear.*





Viewing RT60 Test Data

STEP 1 - *The Data is automatically displayed upon completion of the test.*

STEP 2 - *Tap on the the green decay curve to position the Left Cursor.*

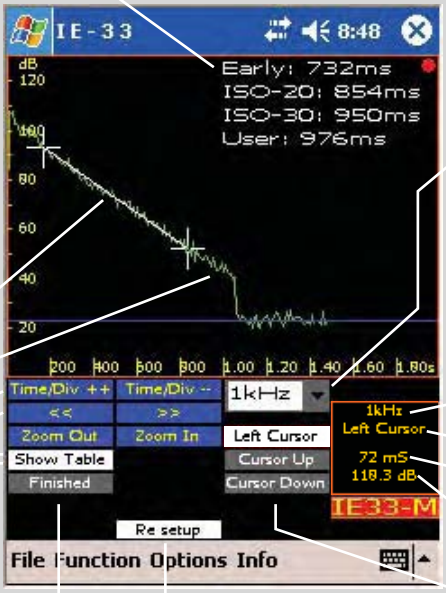
STEP 3 - *Press the* Left Cursor *button to change it to* Right Cursor *Now tap on the green decay curve to position the Right Cursor .*

STEP 4 - *Select "Options" the "Save RT60" to save data to file.*

STEP 5 - *To START another TEST press the* Finished *button.*

Calculated RT60 Data for current 1/1 or 1/3 octave.

Early is calculated on first 5 dB of decay.
ISO-20 is calculated on -5 to -25 dB of decay.
ISO-30 is calculated on -5 to -35 dB of decay.
User is calculated on user placement of cursors.



White slope determined by User cursor placment.

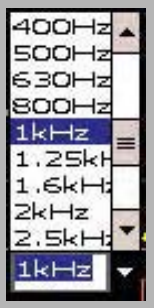
Green decay curve.

Expand or contract the Time scale.

Move Cursor left or right.

1/1, 1/3 Band Selection

To View another band tap here and then use the scroll button to select the desired band.

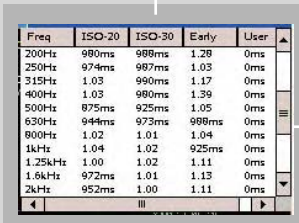


Current 1/1 or 1/3 octave.

Current Cursor (left/right).

Cursor location in milliseconds.

Cursor location in dB.



Hide Table

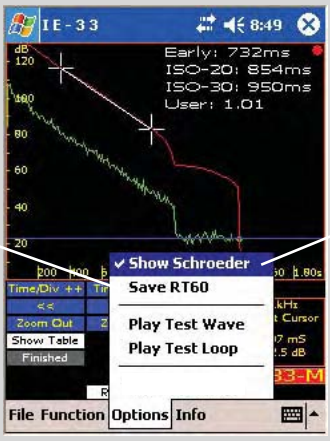
Displays data for all 10 octave or 30 1/3 octave bands.

Please Note: It will take some time to calculate each band and fill in the table. You will not be able to scroll through the data until this process is completed.

Press to Return to the Setup screen.

Move current Cursor up or down.

Press here to initiate another test.



Saves the RT60 data to a file. Please Note: It may take a minute or longer to save a file. Data for each band must be calculated and stored along with the 240 data points per band. Please be patient. Thanks!

Displays the Schroeder curve (in red). This applies a smoothing algorithm to the Decay curve. If desired, the Cursors may be placed on this curve instead of the actual decay curve.