

AVM

AUDIO VOLUME METER



ADVANCED TRUE RMS POWER STORAGE METER

INSTRUCTION MANUAL
IB6462-01

DESCRIPTION

The new AVM digital Audio Volume Meter is a low cost pocket size True-RMS program audio volume meter with a 600 Ohm audio input that is calibrated in dBm for balanced or unbalanced audio measurement. The measurement range is +20 to -60dBm in 0.1dB increments. The AVM is a storage meter that stores and displays the highest RMS level received during the test interval so live program audio can be measured just as easily as test tones. It also simultaneously displays the instantaneous RMS level on a bar graph for audio status monitoring.

The input uses an RCA (female) connector as a balanced input with complete ground isolation to prevent 60Hz ground loop interference. A variety of readily available RCA adapters can be used with this meter to connect to your audio system. Both stereo and mono audio signals can be measured for audio loudness and level. You can check for consistent volume levels from one channel to the next or from one program to the next. This meter can be used to perform a quick spot check to find hot levels in your system and help you comply with the CALM ACT. Use it to periodically survey your system for high or low audio levels to prevent complaints about loud or un-even audio programming. You can use this meter to quickly locate and verify any objectionable signals levels and bring them into compliance.

This meter is hand-held and battery operated for maximum portability and versatility. To take a measurement just push and hold the button on the front of the meter and the measurement begins. The meter will store the maximum volume level in dBm during the button push. When you release the button the meter turns off to conserve the battery.

APPLICATIONS

Cable TV technicians can check their audio levels on each channel by connecting this meter to the audio output of the Set-Top Converter or monitor TV and tuning from one channel to the next making a measurement and recording the level of each channel. Then they can adjust the levels that are non-compliant so your customer service representatives get fewer calls about audio levels. This will promote customer satisfaction and improve your service.

Broadcast TV Stations can check each of their audio level outputs from every source to verify that they are all synchronized at the same level and within compliance specifications. Then if an audio level problem is suspected, a fast check can be made to isolate the source of the level variation and solve the problem.

Audio Engineers can check recordings and the output of their sound equipment to verify correct levels on audio recordings, commercials, and program to program level compliance. You can use this meter to verify that all your recordings will be on the mark and well within the Calm Act compliance levels.

Sound Reinforcement technicians can use this meter as a quick and accurate way to setup intercom and Public Address systems for consistent audio volume level. This way all the intercom stations will have the same perceived volume level.

HOW TO MEASURE AUDIO LOUDNESS

Connect your audio from any receiver or other audio source to the RCA connector at the top of the meter. If you wish to measure a stereo signal you can measure each channel separately or combine them with any common RCA combining connector. The meter terminates the audio signal at 600 Ohms so that dBm reading can be recorded. Then depress the POWER button and hold it on. The dBm reading will start out low and climb to the maximum reading in just a few seconds. Before you release the button take note of the reading on the LCD meter. The meter will continue to take readings as long as the button is pushed. When you release the button the unit will turn off to conserve the battery.

The AVM stores and displays the highest RMS audio level received during the measurement interval. The POWER button must be depressed and held each time a new reading is to be taken. This storage mode causes the digital display to rapidly stabilize to the maximum RMS reading in just a few seconds. A reference level should be established for audio levels in any system, and by measuring your existing audio signal levels you can match your levels to any fixed non adjustable level so that your channel to channel levels will be even.

One way to do this is to measure the audio levels you cannot adjust with the AVM connected to the audio output of your TV monitor or cable set-top box. Average the readings taken on the non-controlled channels, and then use that dBm level as a reference to set the remainder of the channels. In this way all channels will be of equal loudness. The AVM measures the true RMS value of the audio signal so it measures the actual loudness as perceived by a listener.

Some program source levels are not as stable as a technician may want them to be. If audio volume tests reveal that a given channel volume varies excessively, the loudness of that channel can be completely stabilized by connecting an AUDIO LEVEL MASTER onto the channel. Contact FM SYSTEMS for information regarding control of audio levels.

BAR GRAPH INDICATOR

The unit has a built-in bar graph indicator on the second line of the LCD meter. It operates during the measurement period while the power button is depressed. This meter indicates the real time RMS or power of the audio being measured. Its main function is to indicate the condition of the audio while a measurement is taking place. If the audio programming drops away or reduces volume, you will see it on the LCD bar graph.

AUDIO LEVEL MEASUREMENT RANGE

The AVM can measure either balanced or unbalanced audio circuits at audio power levels ranging from +20 dBm to -60 dBm. The meter will read either test tones or program audio in true RMS, calibrated in dBm into 600 Ohm. When the input level of +20.9 dBm is exceeded the display will flash a message indicating "Over Level" and if the input is less than -60 dBm the LCD display will flash the message "Under Level" to indicate an audio level below minimum measurement level.

BATTERIES

The AMM is equipped with a 9 volt alkaline battery. When the battery runs down a message will appear in on the LDC window indicating "CHANGE BATTERY". When the battery terminal voltage is below 3 Volts the AVM will not turn on. This prevents incorrect readings due to low battery voltage.

*****WARNING*****

DO NOT ATTEMPT TO RECHARGE NON-RECHARGEABLE BATTERIES. THEY COULD LEAK CORROSIVE FLUIDS AND CAN EXPLODE CAUSING HARM.

RECHAGEABLE BATTERY USE

Any standard 9 volt battery may be used to power the AVM, both rechargeable and non-rechargeable. Note that the AVM will drain the battery down to about 3 volts before indication of battery change.

CARE AND MAINTENANCE

This AVM is a precision measuring instrument and should be treated accordingly. While it can withstand ordinary everyday indoor use, it should not be left outside in the rain or otherwise mistreated. It is not waterproof. The batteries should be removed if it is placed into storage to prevent leakage of corrosive fluids from batteries as they discharge and age.

Replace non-chargeable batteries at least once a year even if ordinary use does not discharge the battery, because old batteries may leak and cause corrosion damage.

No routine maintenance or test procedures are required other than battery replacement.

Sample Display Readings

