Quick Start Guide

LECTROSONICS®

DBSM/DBSMD

Digital Transcorder

DBSM-A1B1, DBSM/E01-A1B1,
DBSMD-A1B1, DBSMD/E01-A1B1

CE UK CA

Follow Us On:

Fill in for your records:

Serial Number:

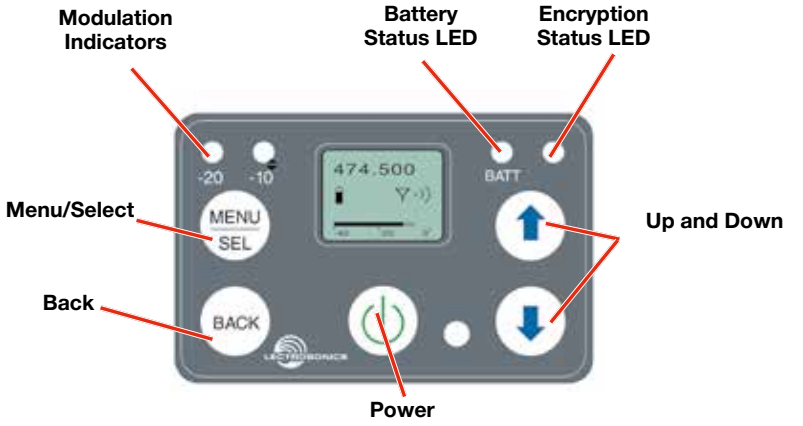
Purchase Date:

This guide is intended to assist with initial setup and operation of your Lectrosonics product.

For a detailed user manual, download the most current version at:

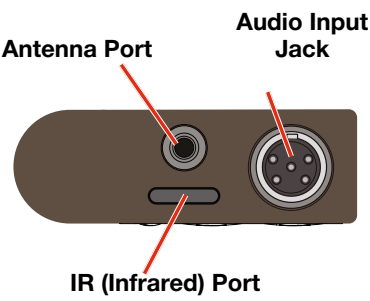
www.lectrosonics.com

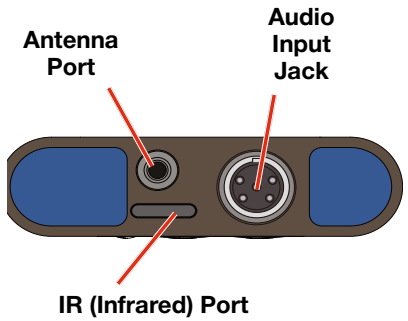
Features


Modulation Indicators
Battery Status LED
Encryption Status LED
-20
-10
474.500
BATT
Menu/Select
MENU
SEL
Up and Down
Back
BACK
Power

microSDHC memory card port

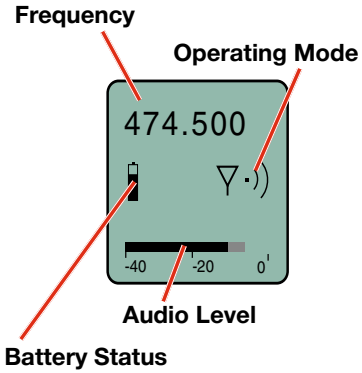
microSDHC memory card port


Antenna Port
Audio Input Jack
IR (Infrared) Port


Antenna Port
Audio Input Jack
IR (Infrared) Port

Main Window Indicators

The Main Window displays the block number, Standby or Operating mode, operating frequency, audio level, battery status and programmable switch function. When the frequency step size is set at 100 kHz, the LCD will look like the following:



Battery Status LED Indicator

- **Green:** Batteries are acceptable and unit is functioning properly
- **Flashing Red:** Batteries have drained and remaining time is limited
- **Red:** Batteries are drained and should be replaced immediately.

NOTE: The battery timer feature in many Lectrosonics receivers is very helpful in measuring battery runtime. Refer to the receiver instructions for details on using the timer.

Encryption Status LED Indicator Modes (Blue)

- **StandBy:** Light is OFF and Operating Mode Indicator icon has a line through it
- **Missing/Wrong Key:** Light is FLASHING
- **Transmitting:** Light is steadily ON

IR (infrared) Sync

The IR port is for quick setup using a receiver with this function available. IR Sync will transfer the settings for frequency, step size and compatibility mode from the receiver to the transmitter. This process is initiated by the receiver. When the sync function is chosen on the receiver, hold the IR port of the transmitter near the IR port of the receiver. (There is no menu item available on the transmitter to initiate the sync.)

NOTE: If a mismatch exists between the receiver and transmitter, an error message will appear on the transmitter LCD stating what the problem is.

Battery Installation

The transmitter is powered by AA batteries. We recommend using lithium for longest life.

Because some batteries run down quite abruptly, using the Power LED to verify battery status will not be reliable. However, it is possible to track battery status using the battery timer function available in Lectrosonics receivers.

The battery door opens by simply unscrewing the knurled knob part way until the door will rotate. The door is also easily removed by unscrewing the knob completely, which is helpful when cleaning the battery contacts. The battery contacts can be cleaned with alcohol and a cotton swab, or a clean pencil eraser.

Insert the batteries according to the markings on the back of the housing. If the batteries are inserted incorrectly, the door may close but the unit will not operate.

Connecting the Signal Source

Microphones, line level audio sources, and instruments can be used with the transmitter. Refer to the section entitled **Input Jack Wiring for Different Sources** for details on the correct wiring for line level sources and microphones to take full advantage of the Servo Bias circuitry.

Formatting the SD Card

New microSDHC memory cards come pre-formatted with a FAT32 file system which is optimized for good performance. The unit relies on this performance and will never disturb the underlying low level formatting of the SD card. When the DBSM/DBSMD "formats" a card, it performs a function similar to the Windows "Quick Format" which deletes all files and prepares the card for recording. The card can be read by any standard computer but if any write, edit or deletions are made to the card by the computer, the card must be re-formatted with the DBSM/DBSMD to prepare it again for recording. The DBSM/DBSMD never low level formats a card and we strongly advise against doing so with the computer.

To format the card with the DBSM/DBSMD, select Format Card in the menu and press MENU/SEL on the keypad.

WARNING: Do not perform a low level format (complete format) with a computer. Doing so may render the memory card unusable with the DBSM/DBSMD recorder. With a Windows based computer, be sure to check the quick format box before formatting the card. With a Mac, choose MS-DOS (FAT).

IMPORTANT

The formatting of the SD card sets up contiguous sectors for maximum efficiency in the recording process. The file format utilizes the BEXT (Broadcast Extension) wave format which has sufficient data space in

the header for the file information and the time code imprint.

The SD card, as formatted by the DBSM/DBSMD recorder, can be corrupted by any attempt to directly edit, change, format or view the files on a computer.

The simplest way to prevent data corruption is to copy the .wav files from the card to a computer or other Windows or OS formatted media ***FIRST.*** ***Repeat – COPY THE FILES FIRST!***

Do not rename files directly on the SD card.

Do not attempt to edit the files directly on the SD card.

Do not save ***ANYTHING*** to the SD card with a computer (such as the take log, note files etc) - it is formatted for DBSM recorder use only.

Do not open the files on the SD card with any third party program such as Wave Agent or Audacity and permit a save. In Wave Agent, do not IMPORT - you can OPEN and play it but do not save or Import - Wave Agent will corrupt the file.

In short - there should be NO manipulation of the data on the card or addition of data to the card with anything other than an DBSM/DBSMD recorder. Copy the files to a computer, thumb drive, hard drive, etc. that has been formatted as a regular OS device FIRST - then you can edit freely.

iXML HEADER SUPPORT

Recordings contain industry standard iXML chunks in the file headers, with the most commonly used fields filled in.

Compatibility with microSDHC memory cards

Please note that the DBSM/DBSMD are designed for use with ***microSDHC memory cards***. There are several types of SD card standards (as of this writing) based on capacity (storage in GB).

SDSC: standard capacity, up to and including 2 GB – DO NOT USE!

SDHC: high capacity, more than 2 GB and up to and including 32 GB – USE THIS TYPE.

SDXC: extended capacity, more than 32 GB and up to and including 2 TB – DO NOT USE!

SDUC: extended capacity, more than 2TB and up to and including 128 TB – DO NOT USE!

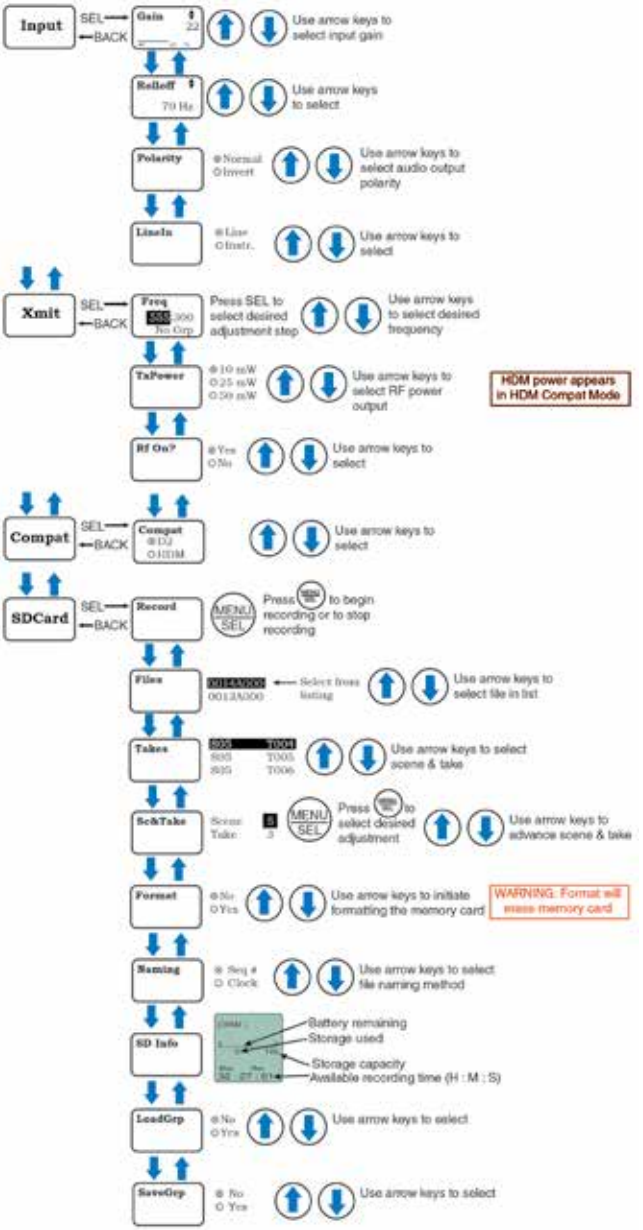
The larger XC and UC cards use a different formatting method and bus structure and are NOT compatible with the recorder. ONLY microSDHC memory cards should be used. They are available in capacities from 4GB to 32GB. Look for the Speed Class 10 cards (as indicated by a C wrapped around the number 10), or the UHS Speed Class I cards (as indicated by the numeral 1 inside a U symbol). Also note the ***microSDHC*** Logo.

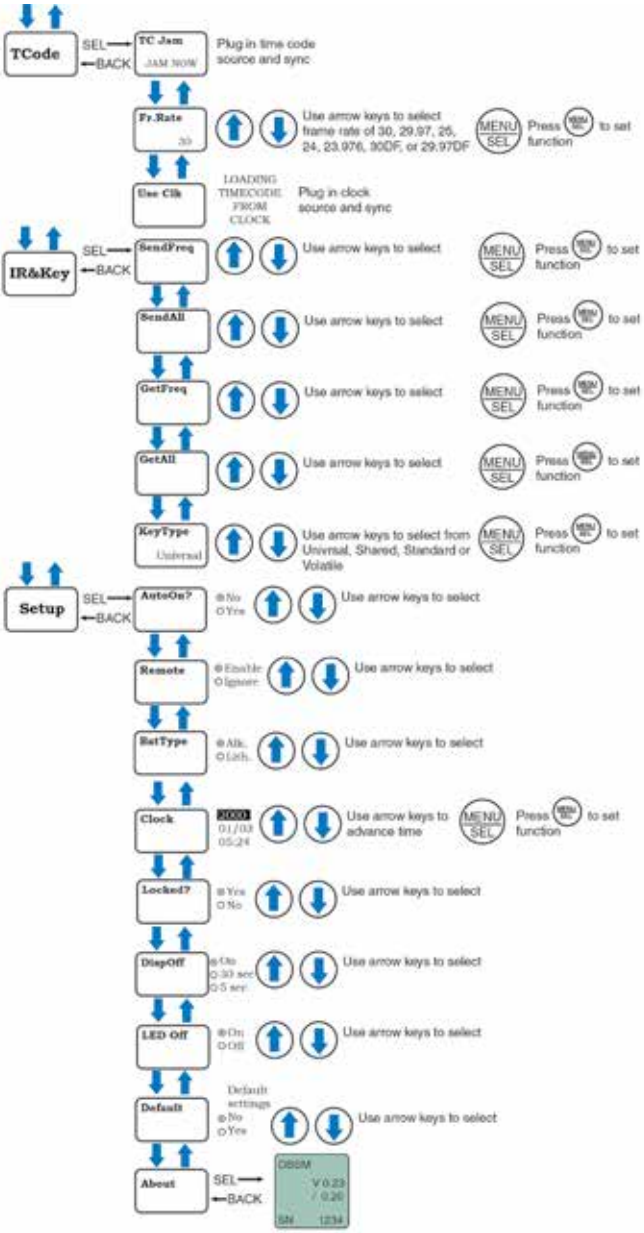
If you are switching to a new brand or source of card, we always suggest testing first before using the card on a critical application.

DBSM/DBSMD Menu Map

From the Main Window, press MENU/SEL.

Use the UP/DOWN arrow keys to select the item.

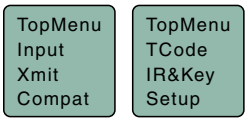



TCode
SEL
BACK
TC Jam
JAM NOW
Plug in time code source and sync
Fr.Rate
30
Use arrow keys to select frame rate of 30, 29.97, 25, 24, 23.976, 30DF, or 29.97DF
MENU SEL
Press MENU SEL to set function
Exe Clk
LOADING TIMECODE FROM CLOCK
Plug in clock source and sync
IR&Key
SEL
BACK
SendFreq
Use arrow keys to select
MENU SEL
Press MENU SEL to set function
SendAll
Use arrow keys to select
MENU SEL
Press MENU SEL to set function
GetFreq
Use arrow keys to select
MENU SEL
Press MENU SEL to set function
GetAll
Use arrow keys to select
MENU SEL
Press MENU SEL to set function
KeyType
Universal
Use arrow keys to select from Univrsal, Shared, Standard or Volatile
MENU SEL
Press MENU SEL to set function
Setup
SEL
BACK
AutoOn?
No
Yes
Use arrow keys to select
Remote
Enable
Ignore
Use arrow keys to select
BatType
Alk.
Lith.
Use arrow keys to select
Clock
2000
01/03
05:24
Use arrow keys to advance time
MENU SEL
Press MENU SEL to set function
Locked?
Yes
No
Use arrow keys to select
DispOff
On
30 sec
5 sec
Use arrow keys to select
LED Off
On
Off
Use arrow keys to select
Default
Default settings
No
Yes
Use arrow keys to select
About
SEL
BACK
DBSM
V 0.23
/ 0.26
SN 1234

Menu Screen Details

Top Menu

From the Default screen, pressing MENU/SEL will access the Top Menu. The Top Menu allows the user to access the various sub-menus to control the unit.



From the TopMenu, use the ↕ and ↕ arrow buttons to highlight INPUT and press MENU/SEL.

Adjusting the Input Gain

The two bicolor Modulation LEDs on the control panel provide a visual indication of the audio signal level entering the transmitter. The LEDs will glow either red or green to indicate modulation levels as shown in the table on page 8.

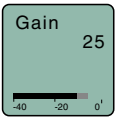
Signal Level	-20 LED	-10 LED
Less than -20 dB	● Off	● Off
-20 dB to -10 dB	● Green	● Off
-10 dB to +0 dB	● Green	● Green
+0 dB to +10 dB	● Red	● Green
Greater than +10 dB	● Red	● Red

NOTE: Full modulation is achieved at 0 dB, when the "-20" LED first turns red. The limiter can cleanly handle peaks up to 30 dB above this point.

It is best to go through the following procedure with the transmitter in the standby mode so that no audio will enter the sound system or recorder during adjustment.

1) With fresh batteries in the transmitter, power the unit on in the standby mode (see previous section ***Turning Power ON and OFF***).

2) Navigate to the Gain setup screen.



3) Prepare the signal source. Position a microphone the way it will be used in actual operation and have the user speak or sing at the loudest level that will occur during use, or set the output level of the instrument or audio device to the maximum level that will be used.

4) Use the ↕ and ↕ arrow buttons to adjust the gain until the **–10 dB** glows green and the **–20 dB** LED starts to flicker red during the loudest peaks in the audio.

5) Once the audio gain has been set, the signal can be sent through the sound system for overall level adjustments, monitor settings, etc.

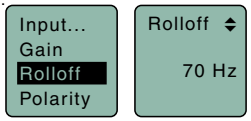
6) If the audio output level of the receiver is too high or low, use only the controls on the receiver to make adjustments. Always leave the transmitter gain adjustment set according to these instructions, and do not change it to adjust the audio output level of the receiver.

Selecting the Low Frequency Roll-off

It is possible that the low frequency (LF) roll-off point could affect the gain setting, so it's generally good practice to make this adjustment before adjusting the input gain. The point at which the roll-off takes place can be set to:

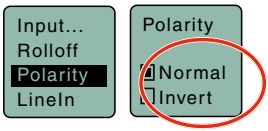
- LF 20-20 Hz
- LF 35-35 Hz
- LF 50-50 Hz
- LF 70-70 Hz
- LF 100-100 Hz
- LF 120-120 Hz
- LF 150-150 Hz

The roll-off is often adjusted by ear while monitoring the audio.



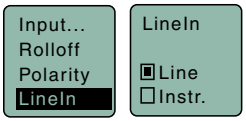
Selecting Audio Polarity

Audio polarity can be inverted at the transmitter so the audio can be mixed with other microphones without comb filtering. The polarity can also be inverted at the receiver outputs.



Selecting LineIn/ Instrument

Audio input can be selected as either LineIn or Instrument Level.

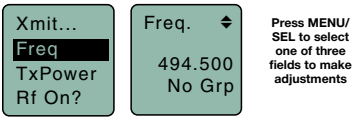


Xmit Menu

Use the ⇕ and ⇕ arrow buttons to select the Transmit Menu from the TopMenu.

Selecting Frequency

The setup screen for frequency selection offers several ways to browse the available frequencies.

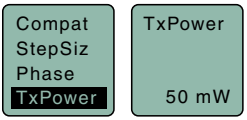


Pressing MENU/SEL will change frequency fields. The MHz frequency will change in 1 MHz steps, the KHz frequency will change in 25 KHz steps.

Setting Transmitter Output Power

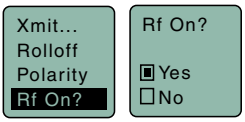
The output power can be set to:

- 10, 25 or 50 mW, or HDM (High Density Mode)



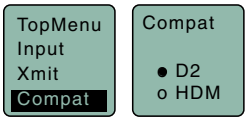
RF On?

RF transmission can be turned on or off using the ⇕ and ⇕ arrow buttons.



Compat Menu

Selecting the Compatibility Mode



Use the ▲ and ▼ arrow buttons to select the desired mode, then press the BACK button twice to return to the Main Window.

Compatibility modes are as follows:

DBSM/DBSMD:

- Standard Mono Digital (D2)
- High Density Mode (HDM)

HDM Mode (High Density Transmission)

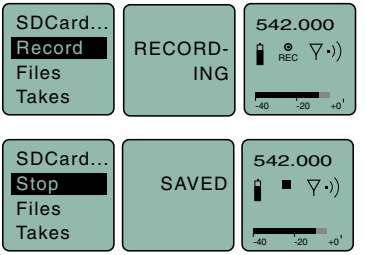
This special transmitting mode and associated low RF power of 2mW allows the user to “stack” many units into a very small area of the spectrum. Standard, ETSI-compliant RF carriers take up about 200 kHz of occupied bandwidth, while HDM takes up about half of that, or 100 kHz, and allows for much tighter channel spacing.

SD Card Menu

The SD Card Menu can be accessed from the TopMenu. It contains the various recording functions, file management and naming.

Record

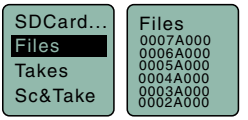
Selecting this will start the unit recording. To stop recording, press **MENU/SEL,** choose SDCard and Stop; the word SAVED appears on the screen.



NOTE: Record and Stop Recording may also be achieved by shortcut keys from the main/home screen:
• Simultaneous press of **BACK** button + **UP** arrow button: Begin record
• Simultaneous press of **BACK** button + **DOWN** arrow button: Stop record

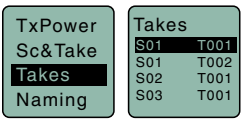
Files

This screen shows the existing files on the SD card. Selecting a file will display details about the file.



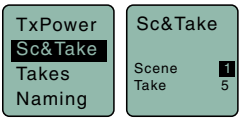
Takes - Choosing Takes for Replay

Use UP and DOWN arrows to toggle and MENU/SEL to play back.



Setting Scene and Take Number

Use UP and DOWN arrows to advance Scene and Take and MENU/SEL to toggle. Press the BACK button to return to menu.



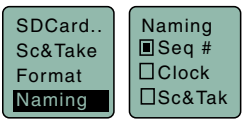
Format

Formats the microSDHC memory card.

WARNING: This function erases any content on the microSDHC memory card.

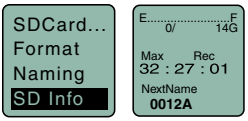
Recorded File Naming

Choose to name the recorded files by the sequence number, clock time or scene and take.



SD Info

Information regarding the microSDHC memory card including space remaining on card.



Load Group

Choose the name of the frequency group on the SD card to load.

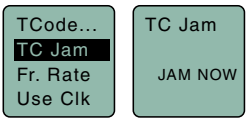
Save Group

Choose the name of the frequency group to save onto the SD card.

TCode Menu

NOTE: The timecode input for the DBSM is in the 5-pin mic input. In order to use timecode, remove the mic connector and replace it with a timecode sync adapter cable.

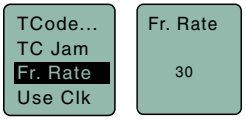
TC Jam (jam timecode)



When TC Jam is selected, ***JAM NOW*** will blink on the LCD and the unit is ready to be synced with the timecode source. Connect the timecode source and the sync will take place automatically. When the sync is successful, a message will be displayed to confirm the operation.

Timecode defaults to 00:00:00 at power up if no timecode source is used to jam the unit. A timing reference is logged into the BWF metadata.

Setting Frame Rate



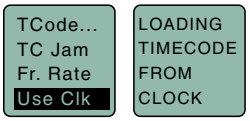
The frame rate affects embedding of the timing reference in the .BWF file metadata and display of timecode. The following options are available:

- 30
- 23.976l
- 24
- 29.97
- 30DF
- 25
- 29.97DF

NOTE: While it is possible to change the frame rate, the most common use will be to check the frame rate which was received during the most recent timecode jam. In rare situations, it might be useful to alter the frame rate here, but be aware that audio tracks many not line up correctly with mismatched frame rates.

Use Clock

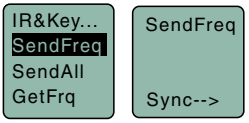
The DBSM time clock and calendar (RTCC) cannot be relied on as an accurate time code source. Use Clock should only be used when there is no need for the time to agree with an external timecode source.



IR&Key Menu

SendFreq

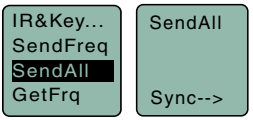
Press MENU/SEL to sync the Frequency to another transmitter or receiver via the IR port.



SendAll

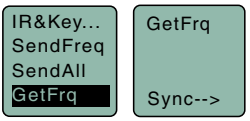
Press MENU/SEL to sync: Frequency, Transmitter Name, Talkback Enabled, and Compatibility Mode to another transmitter or receiver via the IR port.

NOTE: SendAll does not send Encryption Key. This must be done separately.



GetFreq

Press MENU/SELto sync Frequency to another transmitter or receiver via the IR port.



GetAll

Press MENU/SEL to sync: Frequency, Transmitter Name, Talkback Enabled, and Compatibility Mode from another transmitter or receiver via the IR port.

KeyType

The DBSM/DBSMD receives an encryption key via the IR port from a key generating receiver. Begin by selecting a key type in the receiver and generating a new key (key type is labeled KEY POLICY in the DSQD receiver). Set the matching KEY TYPE in the DBSM/DBSMD and transfer the key from the receiver (SYNC KEY) to the DBSM/DBSMD via the IR ports. A confirmation message will display on the receiver display if the transfer is successful. The transmitted audio will then be encrypted and can only be listened to if the receiver has the matching encryption key.

The DBSM has four options for encryption keys:

- **Standard:** This is the most common level of security. The encryption keys are unique and there are only 256 key instances available to be transferred to a transmitter.
- **Shared:** There are an unlimited number of shared keys available.
- **Universal:** This is the most convenient encryption option available. All encryption-capable Lectrosonics transmitters and receivers contain the Universal Key.
- **Volatile:** This is the most robust encryption option available ("one time use" key management policy).

WipeKey

This menu item is only available if Key Type is set to Standard, Shared or Volatile. Select Yes to wipe the current key and enable the DBSM/DBSMD to receive a new key.

SetUp Menu

AutoOn

Press MENU/SEL to toggle the AutoOn feature on or off.

Remote

Press MENU/SEL to toggle the Remote "dweedle tone" feature on or off.

BattType

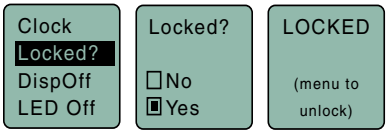
Press MENU/SEL to select either Alkaline or Lithium battery. Lithium batteries are recommended.

Clock

Press MENU/SEL to set the clock (time and date).

Locking/Unlocking Changes to Settings

Changes to the settings can be locked in the Power Button Menu.



When changes are locked, several controls and actions can still be used:

- Settings can still be unlocked
- Menus can still be browsed
- When locked, **POWER CAN ONLY BE TURNED OFF** by removing the batteries.
- "Dark" locked mode prevents the display from coming on when buttons are pressed. Exit by holding UP+DOWN for 3 seconds. Unlike regu-

lar Locked mode, “Dark” locked mode does not persist through a power cycle.

DispOff

Press MENU/SELto toggle the DisplayOff feature between 5 and 30 seconds, or set to constantly stay on.

LED Off

From the main menu screen, a quick press of the UP arrow button turns the control panel LEDs on. A quick press of the DOWN arrow button turns them off. The buttons will be disabled if the LOCKED option is selected in the Power Button menu.

Default

Press MENU/SEL to restore the Default (factory) settings.

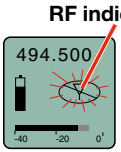
About

Press MENU/SEL to display the model, the firmware version, the software version and the serial number.

Turning Transmitter Power ON

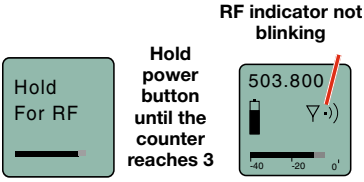
Short Button Press

When the unit is turned off, a short press of the power button will turn the unit on in the Standby Mode with the RF output turned off. This is useful for adjusting settings on the unit without transmitting.



Long Button Press

When the unit is turned off, a long press of the power button will start a countdown to turn the unit on with the RF output turned on. Continue to hold the button until the countdown is complete.



If the button is released before the countdown is completed, the unit will power up with the RF output turned off.

Menu Shortcuts

From the Main/Home Screen, the following shortcuts are available:

- **LEDs On:** Press the UP arrow
- **LEDs Off:** Press the DOWN arrow
- **Gain Setting:** Long press the MENU button and hold while adjusting gain up or down using the arrow keys
- **Record:** Press the BACK + UP arrow simultaneously
- **Stop Recording:** Press the BACK + DOWN arrow simultaneously

NOTE: The recording shortcuts are only available from the main/home screen AND when a microSDHC memory card is installed.

Powering Off

From any screen, power can be turned off by selecting Pwr Off in the power menu, holding the Power Button ⏻ in and waiting for the moving bar to progress, or with the programmable switch (if it is configured for this function).

If the power button is released, or the top panel switch is turned back on again before the moving bar progresses, the unit will remain turned on and the LCD will return to the same screen or menu that was displayed previously.

NOTE: If the programmable switch is in the OFF position, power can still be turned on with the power button. If the programmable switch is then turned on, a brief message will appear on the LCD.

Recorder Operating Instructions

- Install battery(s)
- Insert microSDHC memory card
- Turn power on
- Format memory card
- Connect microphone and place it in the position where it will be used.
- Have the user talk or sing at the same level that will be used in the production, and adjust the input gain so that the ***-20 LED blinks red on louder peaks***.

Use the UP and DOWN arrow buttons to adjust the gain until the -20 LED blinks red on louder peaks

- Press **MENU/SEL**, choose **SD-Card** and **Record** from the menu

- To stop recording, press **MENU/SEL,** choose SDCard and Stop; the word SAVED appears on the screen

NOTE: Record and Stop Recording may also be achieved by shortcut keys from the main/home screen:
• Simultaneous press of **BACK** button + **UP** arrow button: Begin record
• Simultaneous press of **BACK** button + **DOWN** arrow button: Stop record

LIMITED ONE YEAR WARRANTY

The equipment is warranted for one year from date of purchase against defects in materials or workmanship provided it was purchased from an authorized dealer. This warranty does not cover equipment which has been abused or damaged by careless handling or shipping. This warranty does not apply to used or demonstrator equipment.

Should any defect develop, Lectrosonics, Inc. will, at our option, repair or replace any defective parts without charge for either parts or labor. If Lectrosonics, Inc. cannot correct the defect in your equipment, it will be replaced at no charge with a similar new item. Lectrosonics, Inc. will pay for the cost of returning your equipment to you.

This warranty applies only to items returned to Lectrosonics, Inc. or an authorized dealer, shipping costs prepaid, within one year from the date of purchase.

This Limited Warranty is governed by the laws of the State of New Mexico. It states the entire liablility of Lectrosonics Inc. and the entire remedy of the purchaser for any breach of warranty as outlined above. NEITHER LECTROSONICS, INC. NOR ANYONE INVOLVED IN THE PRODUCTION OR DELIVERY OF THE EQUIPMENT SHALL BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL, OR INCIDENTAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THIS EQUIPMENT EVEN IF LECTROSONICS, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL THE LIABILITY OF LECTROSONICS, INC. EXCEED THE PURCHASE PRICE OF ANY DEFECTIVE EQUIPMENT.

This warranty gives you specific legal rights. You may have additional legal rights which vary from state to state.

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581 Laser Road NE • Rio Rancho, NM 87124 USA • www.lectrosonics.com
(505) 892-4501 • (800) 821-1121 • fax (505) 892-6243 • sales@lectrosonics.com

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