

DSR4

Four Channel Digital Slot Receiver DSR4-A1B1, DSR4-B1C1, DSR4-941, DSR4-961

- Four independent channels, compact design
- Three diversity options for maximum flexibility
- 24 bit/48 kHz digital for flawless audio
- AES 256-bit, CTR mode encryption, with 4 different key policies available
- High IP3 performance of +15 dBm for tough RF environments
- Analog and AES3 digital audio outputs
- External DC powering options and USB jack for firmware updates and connectivity with Wireless Designer



scan for our DSR4
Deep Dive product videos



Fill in for your records:



FCC Notice

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this equipment not expressly approved by Lectrosonics, Inc. could void the user's authority to operate it.

Installation & Operating Instructions

The following checklist includes the minimum required settings to start using the receiver:

- Install either a battery sled, camera slot adapter or other power source via EXT BOTTOM PLATE.
- Connect power to the receiver.
- Set the COMPAT (compatibility) mode for the transmitters to be used.
- Find clear operating frequencies for one or both receivers using SmartTune or manual scanning.
- Set transmitters on the matching frequencies, manually or by using IR sync.
- Verify transmitters are set to the same compatibility mode as the receiver (see transmitter manual).
- Adjust transmitter input gain to match voice level and mic position (see transmitter manual).
- Adjust receiver output level as needed for the camera or mixer input level desired.

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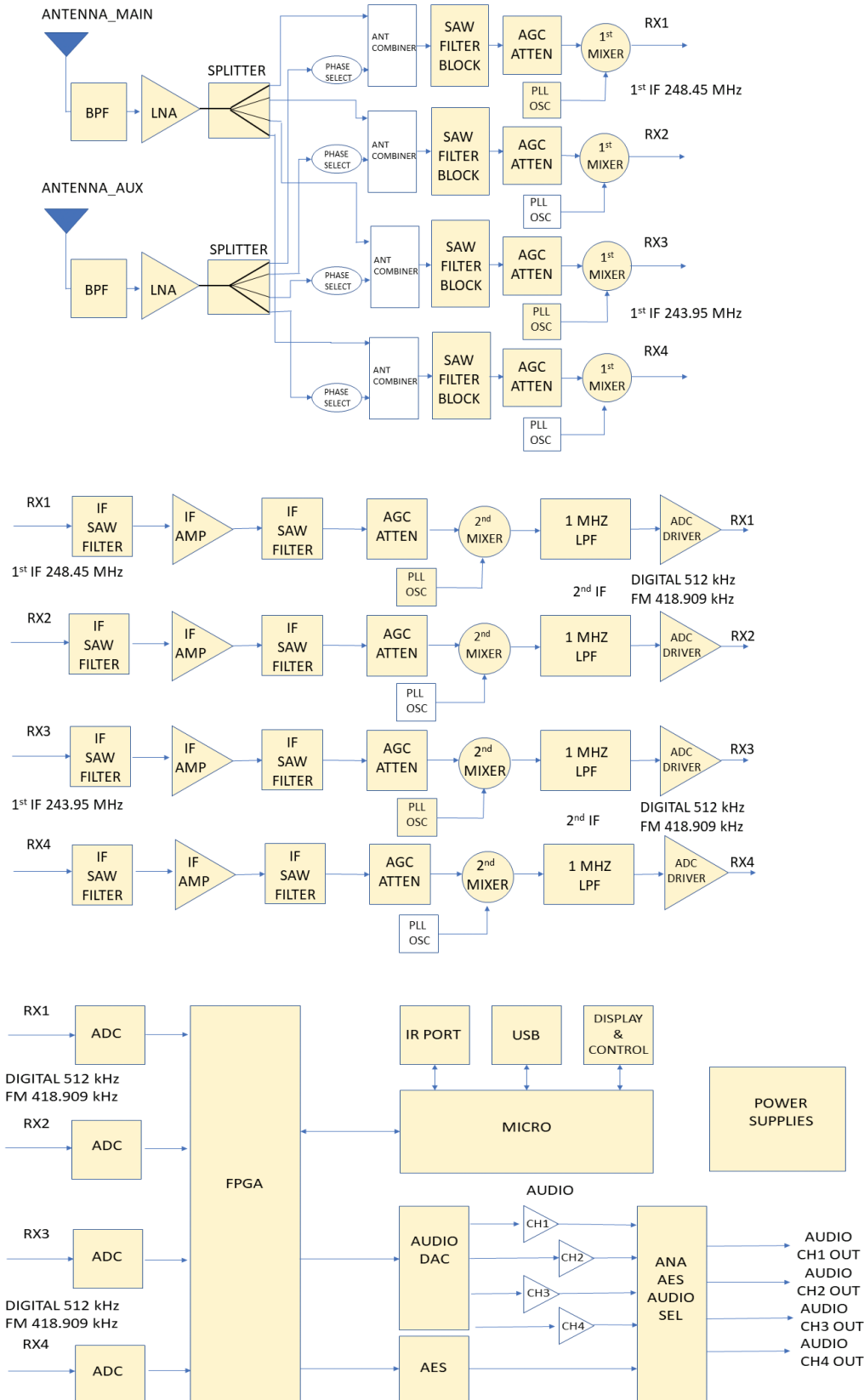
IMPORTANT WARNING

The DSR4 is a high current receiver that should not be used in a slot-mount camera without double checking available current from the camera. The DSR4 draws up to 420mA at 9VDC. DO NOT drop it in the camera to “see what happens.” Consult with your camera manufacturer FIRST before attempting to use this receiver in-slot.

The DSR4 is intended for use in slot devices which can supply enough current safely and without damage to fuses or poly-fused circuits.

Lectrosonics will not be responsible for damages that may result from using this receiver in a slot mount that cannot supply adequate current.

DSR4 Block Diagram



Technical Description

The DSR4 digital 4-channel receiver is a much-requested, versatile slot receiver, equally appropriate for bag use, as well as reality TV and run and gun applications.

Extremely high Third Order Intercept (IP3) performance of +15 dBm, 24-bit/48 kHz audio performance, and AES-256 CTR mode encryption ensure that professionals in all audio disciplines have the tools needed to get the job done, even in extremely tough environments.

Compatibility Modes

The DSR4 receiver was designed to operate with Lectrosonics digital transmitters from the D2, DCH and M2 series. The receiver is also backward compatible with Digital Hybrid Wireless® transmitters including those with NA Hybrid, NU Hybrid, JA HYBRID and EU Hybrid modes.

Encryption

The DSR4 receiver features AES 256-bit, CTR mode encryption, with 4 different key policies available.

Diversity Options

An ideal diversity system constructively combines all the energy available at both antennas. The DSR4 offers two diversity options: for 4-channel operation, each channel combines signals from both antennas in or out of phase, depending on field strength at each antenna and which combination yields the best results. For 2-channel operation, receivers can be paired for Vector Diversity operation. The Vector subsystem smoothly and continuously combines RF signals from both channels, with differing phase angles in order to obtain maximum energy. The four receivers in the DSR4 can be use separately or combined in pairs.

RF Frequency Tracking Front-End

In addition to the extremely high IP3 capability of the receiver, to significantly reduce unwanted interference and intermodulation problems, the DSR4 has a frequency selective front-end section that tracks and tunes to the desired signal frequency and rejects unwanted interfering signals. The low noise, high current RF amplifier was designed with feedback regulation for stability and precise gain in order to handle stronger RF signals without output overload. This produces a robust front-end that is as selective as fixed single frequency designs and is suitable for use in close proximity to other receivers and transmitters commonly used in field production bag systems.

Smart Noise Reduction (SmartNR™)

The DSR4 has been meticulously designed using the best available low noise components and techniques. Nonetheless, the wide dynamic range of digital and Hybrid transmission technology, combined with flat response to 20 kHz, makes it possible to hear the -120 dBV noise floor in the transmitter's mic preamp, or the

(usually) greater noise from the lav microphone itself. (To put this in perspective, the noise generated by the recommended 4k bias resistor of many electret lavaliere mics is -119 dBV and the noise level of the microphone's electronics is much higher.) In order to reduce this noise and thus increase the effective dynamic range of the system, the DSR4 is equipped with a selectable Smart Noise Reduction algorithm, which removes hiss without sacrificing high frequency response.

The Smart Noise Reduction algorithm works by attenuating only those portions of the audio signal that fit a statistical profile for randomness or "electronic hiss." Desired high frequency signals having some coherence such as speech sibilance and tones are not affected.

The Smart Noise Reduction algorithm has three modes - **OFF/NORMAL/FULL** - selectable from a user setup screen. When switched **OFF** (the default setting for digital compat modes) no noise reduction is performed and complete transparency is preserved. All signals presented to the transmitter's front end, including any faint microphone hiss, will be faithfully reproduced at the receiver. When switched to **NORMAL**, (the factory default setting for Hybrid modes) enough noise reduction is applied to remove most of the hiss from the mic preamp and some of the hiss from lavaliere microphones. The noise reduction benefit is dramatic in this position, yet the degree of transparency maintained is exceptional. When switched to **FULL**, enough noise reduction is applied to remove most of the hiss from nearly any signal source of reasonable quality, assuming levels are set properly at the transmitter. This additional noise reduction comes at the cost of some transparency for low-level room noise, yet the algorithm remains undetectable under most circumstances.

Audio Output Level

A setup screen is provided for adjusting the audio output level in 1 dB increments from -50 to +7 dBu using the front panel **MENU/SEL**, **UP**, and **DOWN** buttons.

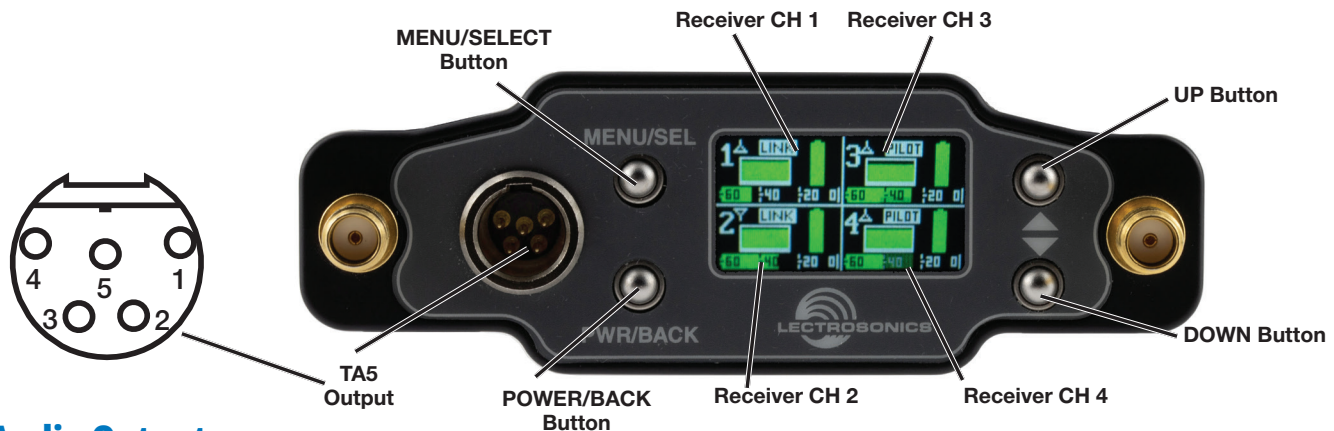
Test Tone

To assist in matching the audio levels of equipment connected to the DSR4, a 1 kHz audio test tone, adjustable from -50 to +7 dBu in 1 dB increments, is available at the outputs. If using AES3 outputs, the level is fixed and cannot be adjusted. Frequency and tone level can be set for each output channel.

Power Supply

The DSR4 is operated from an external DC power source (DCR15/4AU recommended). The receiver has a built-in Poly-Fuse for protection. This fuse automatically resets if the power supply is disconnected for about 15 sec. The power section also has protection circuits that prevent damage to the receiver if a positive ground power source is applied.

DSR4 Front Panel Controls and Functions



Audio Outputs

Audio outputs and the power input are located on the rear panel, accessed by a variety of different bottom-plate adapters. Depending on the slot receptacle or camera, either analog or digital outputs may be used by changing settings in the receiver menu. In slots where two analog channels are accepted, audio channels 1 & 2 can be sent from the receiver through the slot connector. In such cases, use the top connector to access audio channels 3 & 4. In slots that accept 4 channels of audio via two balanced AES pairs, set the receiver outputs to AES3. Keep in mind that the top panel TA5 connector will always be a duplicate of what is sent to outputs “3&4” in the audio output menu.

The front panel 5-pin connector (TA5 type) provides two balanced pairs with the following analog and AES3 pinouts:

Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
Ground	Audio 3 +	Audio 3 -	Audio 4 +	Audio 4 -

Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
Ground	AES 1/2+	AES 1/2-	AES 3/4+	AES 3/4-

Color LCD Display

The display has one primary “home” window. **PWR/BACK** goes to receiver detail screens. **UP/DOWN** arrows select channel.

After Power is turned off and back on again, the unit defaults to the Main window and to the most recent frequencies, audio levels, transmitter battery conditions, and other user settings. These settings are retained even if the batteries are removed. The display illumination time out in 5 seconds, 30 seconds, or never.

Power Off

When the Front Panel Power/Back button is pressed for several seconds, the audio output is instantly muted (squashed) and the message “POWERING OFF...” is displayed briefly before the receiver switches off.

MENU/SEL Button

The **MENU** button accesses the available menus and selects the desired setting.

PWR/BACK Button

The **PWR/BACK** button is used to turn the receiver on and off. When browsing menus and making changes to settings, press **PWR/BACK** to return to previous menu.

Up/Down Arrow Buttons

The **UP/DOWN** buttons are used to scroll or input the various options within each menu selection.

Antenna Port (2)

TA5M Connector

Routes analog audio Channels 3 and 4 or AES3 audio channels 1-4 to the top of the unit.

IR (infrared) Port (just under the front panel)

Settings can be transferred between transmitter and receiver or receiver and receiver.

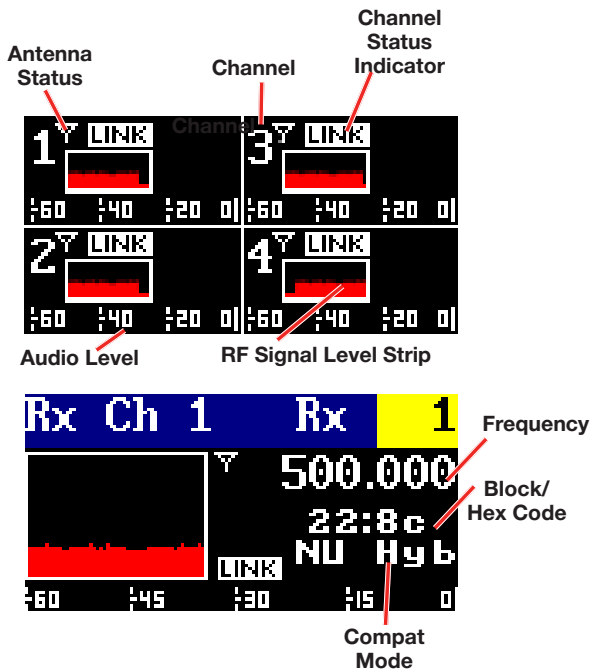
USB Port (just under the front panel)

The microB USB port can be used to connect the DSR4 to the Lectrosonics Wireless Designer software (pending) and to perform firmware updates.

Navigating the Menus

From the Main Window, press **MENU/SEL** to enter the menu, then navigate with the **UP** and **DOWN** arrows to highlight the desired setup item. Press **MENU/SEL** to enter the setup screen for that item. Refer to the Menu Map on pages 8-9.

Main Window Display



The Main Window displays information concerning the RF levels at each antenna per channel, audio modulation levels, the condition of the Pilot Tone (Hybrid) or Link (digital), and power conditions for both the receiver and the associated transmitters. It is also the access portal to menu selections for setting up the receiver and searching for clear frequency channels. (See *Menu Selections from Main window and Frequency Scan Mode*). The **PWR/BACK** button will cycle between the Home screen, showing all four channels and the channel detail screens. Use the **UP** and **DOWN** arrows to go between individual channels in the Channel Detail view.

- **Antenna Icons:** Status of the vector diversity system
- **RF Signal Strength Strip Charts:** RF signal strength indicators. The RF Level is indicated by the color that appears in the RF Signal Strip:

Green: The receive is successfully demodulating the signal and correctly supplying audio.

Yellow: The receiver sees the signal but the audio is squelched, either because of poor signal or encryption issues. Pilot tone and/or digital packet headers are present.

Red: The receiver sees RF energy but cannot comprehend it in the current Compat mode. This means no Pilot tone in Hybrid modes and no packet headers in digital modes. Can be caused by interference.

- **Channel Status Indicator:** Pilot tone, link and encryption system status.

Menu Item Descriptions

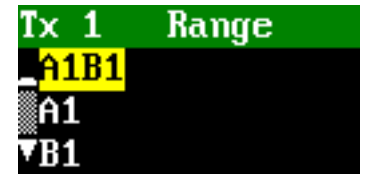
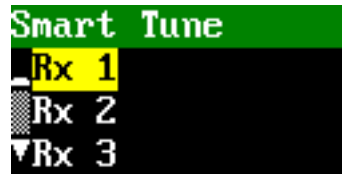
RF Setup

Smart Tune

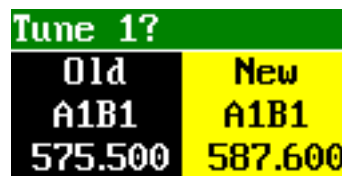
Smart Tune is the easiest and fastest way to scan the local RF spectrum and find clear operating frequencies. The receiver will scan through the selected tuning bandwidth and automatically find “empty” areas within the tuning range that have little or no RF energy. The receiver will then be set to a frequency within an empty area and prompt you to continue or use the IR function to sync to a transmitter.

Note: Pressing **BACK** during an active scan will restore the operating frequency to what it was set at pre-scan.

Transmit frequency range is compatibility mode dependent (see *Compat Mode* for further details). *Rx 1-4* is the first screen you will see when you enter SmartTune. After selecting Rx1-4, using the **UP/DOWN** buttons, press **MENU/SEL** to open the *TX Range* page, then use the **UP/DOWN** buttons to select the frequency range of the transmitter.



After choosing the band, the unit will scan the available frequency and choose the frequency with the lowest interference and will display it as shown (the previous frequency used and the new frequency identified).



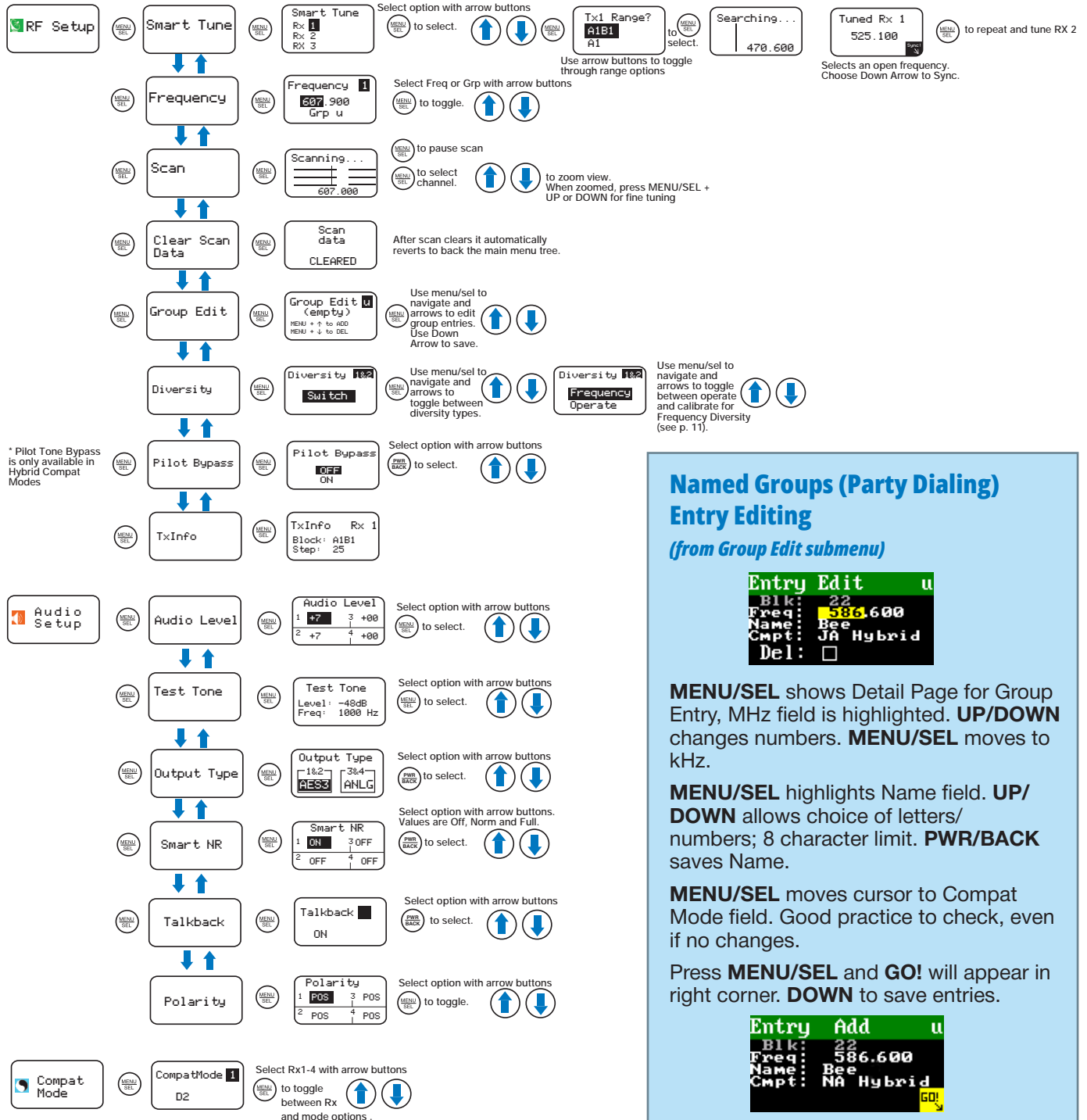
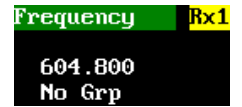
Use the **UP/DOWN** arrows to toggle between them, then **MENU/SEL** to choose.

Face the transmitter’s IR port within a few inches of the receiver’s IR port and press the **DOWN** button to begin the sync. In digital compat modes, if the sync is successful, the message “IR Sync OK” will appear on screen. If unsuccessful, the message will show “IR Sync Failed”. For Hybrid compat modes, “Sync!” at the lower right will blink, but the sync status will only show on the transmitter’s display.

DSR4 LCD Menu Map

The menus presented on the LCD are arranged in a straightforward manner, with those that are likely to be used more often located at the top of the tree.

The menu headers are now in color, with symbols indicative of the menu section. Paging through the tree, the heading bar of each individual submenu choice corresponds to the color of the category it resides in. For example, **RF Setup** is green, and the heading bar of **Frequency**, **Scan**, etc., are also green, indicating that these are submenu items of **RF Setup**.



Named Groups (Party Dialing) Entry Editing

(from Group Edit submenu)

Entry Edit u

Blk: 22
 Freq: 586.600
 Name: Bee
 Cmp: JA Hybrid
 Del:

MENU/SEL shows Detail Page for Group Entry, MHz field is highlighted. **UP/DOWN** changes numbers. **MENU/SEL** moves to kHz.

MENU/SEL highlights Name field. **UP/DOWN** allows choice of letters/numbers; 8 character limit. **PWR/BACK** saves Name.

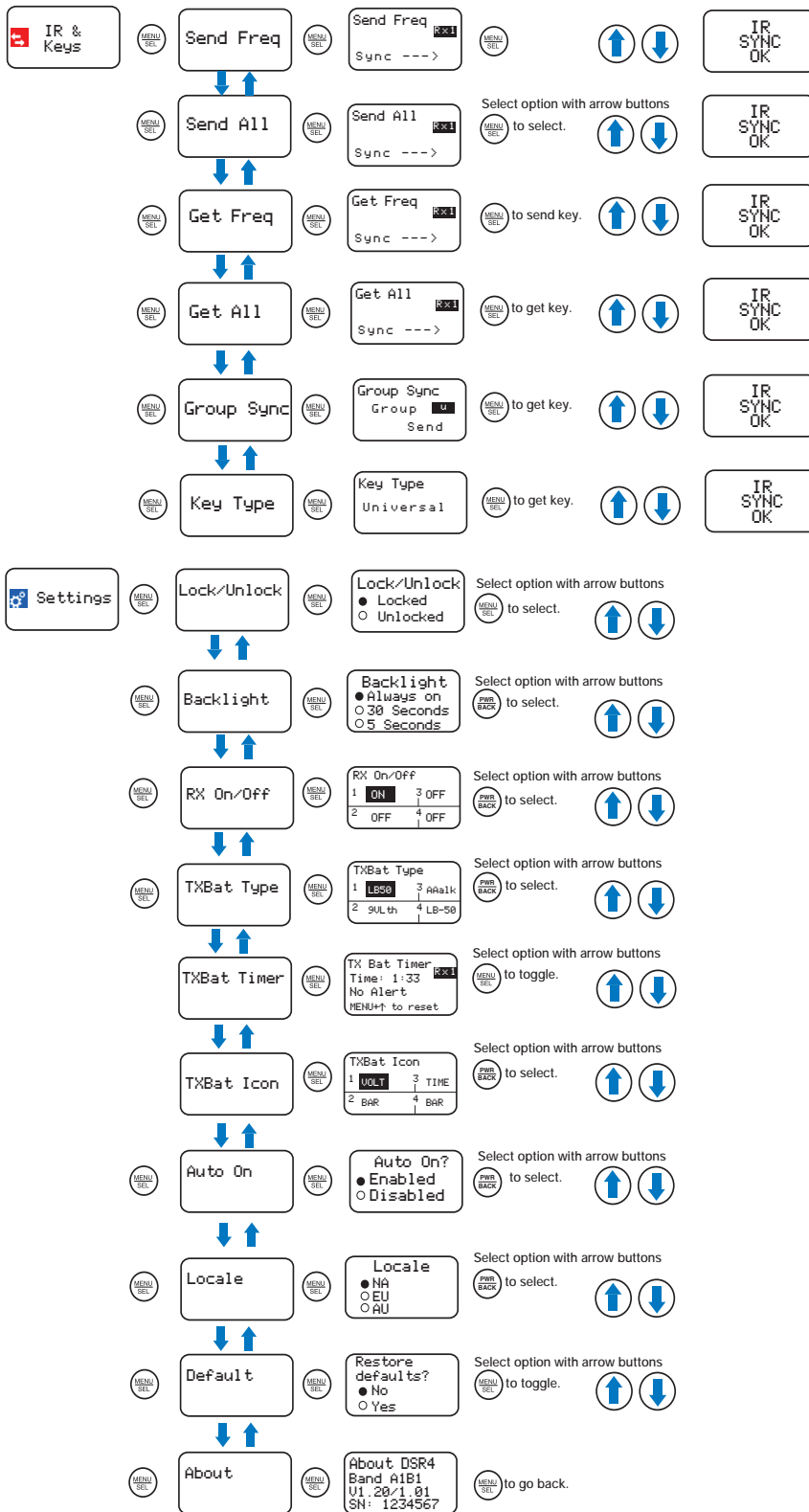
MENU/SEL moves cursor to Compat Mode field. Good practice to check, even if no changes.

Press **MENU/SEL** and **GO!** will appear in right corner. **DOWN** to save entries.

Entry Add u

Blk: 22
 Freq: 586.600
 Name: Bee
 Cmp: NA Hybrid
 GO!

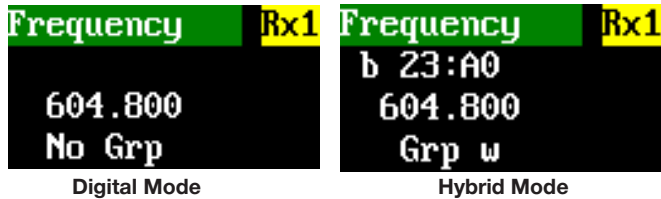
DSR4 LCD Menu Map



After the sync of Channel 1, choose **MENU/SEL** and the screen will ask *Do RX 2 Next?* Use the **UP/DOWN** buttons to toggle between Yes and No; use **MENU/SEL** to confirm. The screen will ask if you have Transmitter 1 on. This ensures that the transmitters are tuned in a way that they don't interfere with each other.

Frequency

Allows manual selection or group tuning of the operating frequency for each of the four receiver channels. The frequency setup screen has different fields depending on the compat mode selected (see Compat Modes on p.12 for details). In digital modes, this page has four editable fields: receiver (channel) number, group selector, group entry name (if populated), MHz, kHz. The selected compat mode for this channel, or this group entry if selected, is at the bottom of the page. In Hybrid modes, this page has five editable fields: receiver (channel) number, group selector, group entry name (if populated), MHz, kHz, block, and legacy hex code. The selected compat mode for this channel, or this group entry if selected, is at the bottom of the page. The block selector can be used for block disambiguation for any frequencies that overlap between blocks 470 and 19, or between blocks 23-24 and 606.



To manually tune: start by selecting Channel 1 - 4 in the upper right corner by using the **UP/DOWN** buttons. Then, press **MENU/SEL** to select the desired field to edit, using the **UP** or **DOWN** buttons. MHz value can be changed in increments of 1 MHz by pressing the **UP** or **DOWN** buttons. The kHz value can be changed in increments of 25 kHz by pressing the **UP** or **DOWN** buttons. Pressing **MENU/SEL** and **UP** or **DOWN** at the same time tunes in larger steps. In the MHz field, in 10 MHz steps; in the kHz field, in 100 kHz steps.

NOTE: A convenient shortcut from any other menu or page in the DSR4 directly to the Frequency page is to press the UP and Down buttons simultaneously and hold for about 1 second.

Tuning Groups

Tuning groups are an important feature within the RF Setup menu that allow the user to create, store, share, recall, and use lists of frequencies with associated names and compat modes, quickly and easily. Four tuning groups are available, each containing 32 frequencies. See *Group Edit* for how to set up and edit these tuning groups. When a tuning group is assigned on the Frequency page, the tunable frequencies are limited to those contained in the group. Press **MENU/SEL** to move the cursor among the available options, and **UP** and **DOWN** buttons to change values. First, select receiver 1-4. Move the cursor again to the

group setting. Use the **UP** or **DOWN** buttons to select among the four groups u, v, w, or x. Press **MENU/SEL** again to move the cursor to the Name selector. Use the **UP** or **DOWN** buttons to scroll among the available names in the group, in *alphabetical* order, and the associated group frequency will change to match. Press **MENU/SEL** to move the cursor to the Freq selector. Use the **UP** or **DOWN** arrows to scroll the available frequencies in the group in *numerical* order.

NOTE: If the frequency is blinking, it means that the currently tuned frequency is not in the selected group. If it is steady, it means that the currently tuned frequency is in the selected group. Choose No Group to exit the group tuning mode and thus have access to any frequencies within the tuning range of the receiver.

To add or remove entries from a tuning group, see *Group Edit*.

Named Group Entries (Party Dialing)

Entries created in Group Edit can now contain information including the frequency, compatibility mode, and an alpha-numeric combination, or name, up to 8 characters. These programmed entries can be shared between devices that support this feature (DSR4, DCR822, DSR). This feature, especially combined with the frequency page shortcut (press **UP** and **DOWN** buttons together for 1 second from any menu location) can save time an effort when managing large channel counts on location.

Scan

RF spectrum scan for the local area, shown in a graphical representation. All receivers scan simultaneously, each covering 25% of the total tuning range of the unit. Press **MENU/SEL** to begin. When the scan has made at least one complete round, Pause by pressing **MENU/SEL** again. To resume scanning, press **PWR/BACK**, "scan" should be highlighted in the menu, and press **MENU/SEL** again.

Scan Zoom:

With the scan paused, press the **UP+DOWN** buttons to zoom in and see a smaller (about 20 MHz) section of the scan results. Pressing **UP+DOWN** again zooms out to the full scan view.



To fine tune in Zoomed scan: Press **MENU/SEL**, then **UP** or **DOWN** arrow buttons to tune the selected receiver in 100 kHz steps.

Tuning the Receivers:

Either in the full scan view or zoomed in, press **MENU/SEL** to choose which receiver to tune. A colored vertical line within the scan will indicate which receiver is being tuned. Now, use the **UP** or **DOWN** buttons to move the receiver frequency. When zoomed out to the full scan view, the cursor will move in 1.6 MHz increments. Press-

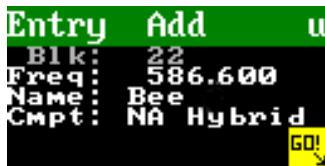
ing and holding the **UP** or **DOWN** buttons will scroll at a high rate. When zoomed in, pressing **UP** or **DOWN** will move the cursor in 800 kHz increments. To tune in 100 kHz steps while zoomed, press and hold the **MENU/SEL** button then press the **UP** or **DOWN** buttons.

Clear Scan:

Clears scan results. Highlight **CLEAR SCAN** in the menu, then press **MENU/SEL**. The screen will quickly show *Scan Data Cleared*.

Group Edit:

Allows the user to add, edit, or delete entries within the available tuning groups. Use the **UP** or **DOWN** arrow buttons to highlight which group to edit, then press **MENU/SEL**. If the selected group is empty, "New Entry..." will be highlighted. Press **MENU/SEL** to create a new entry. Use **MENU/SEL** to move the cursor among the editable fields. For MHz and kHz, use the **UP** or **DOWN** buttons to select the desired numerical values.



```

Entry  Add  u
Blk:   22
Freq:  586.600
Name:  Bee
Cmpt:  NA Hybrid
GO!
  
```

With the Name field highlighted, use the **UP** or **DOWN** buttons to choose the desired letters or numbers, and the **MENU/SEL** button to move the cursor to the next slot in the name field. Up to 8 characters are available. When the name is complete, press the **BACK** button. Then, press **MENU/SEL** to move the cursor to the Compat Mode selection. Use the **UP** or **DOWN** buttons to select the desired compat mode for this entry.

Press **MENU/SEL** and "GO!" will appear at the lower right corner of the display. Press the **DOWN** button to save the entry.

NOTE: For any frequencies in a block overlap area (blocks 470/19, 23/606/24) and a Hybrid mode is selected, it is important to also define which block is desired for proper operation, otherwise there may be a pilot tone conflict.

Editing Existing Entries:

Editing group entries is done the same way they were created, with the exception of the "Del" (delete) box. To delete an entry, press **MENU/SEL** to navigate to the delete box, then use the **UP** or **DOWN** buttons to select or unselect, press **MENU/SEL** and "GO!" will appear at the bottom right. Press the **DOWN** button to complete.

NOTE: If the Compat mode shows "no change," this means that when this group entry is pulled up in the Frequency page, whatever Compat mode was previously set for that receiver channel (including from a previous Group Entry), it will remain unchanged. If you're using all of the same type of transmitter (all DBSMs, etc.), this setting will work well. However, for frequency groups of mixed transmitter types (such as SMWBs and DBSMs), it is recommended to enter the Compat Mode for every group entry, to avoid issues later.

Diversity

Choose between: Switched, Vector Pair, or Frequency. Switched mode allows the use of all four channels of receivers independently.



```

Diversity  1&2
Switch
  
```

Vector Diversity uses two receiver modules per audio channel. Channels 1&2 can be paired, and 3&4 can be paired.



```

Diversity  1&2
Vector Pair
  
```

Frequency Diversity uses two receiver channels and two transmitters on different frequencies per audio channel. The second receiver in the pair will automatically be set to the same Compat Mode as the first channel in the pair. If both channel pairs are selected as Vector pairs, audio from the first pair is routed to Output 1, and audio from the 2nd pair is routed to Output 2, so that both audio channels go to one output connector or one AES pair.



```

Diversity  1&2
Frequency Operate
  
```

Frequency Diversity requires that the levels of the two audio channels be closely matched to avoid audible level changes as the blending action takes place. Also, both transmitters should be of the same type. Use Calibrate mode for level matching.



```

Diversity  1&2
Frequency Calibrate
  
```

When the display shows "Calibrate" it should be possible to achieve an audio null when both audio channels are matched. Calibrate mode can be toggled on and off for testing but will revert to Operate mode on exiting the diversity setup page.

Pilot Bypass

Allows the user to bypass the pilot tone on each channel while in a Hybrid compat mode and defeats the pilot tone squelch when on (no pilot tone is required). "Off" means that pilot tone must be present to allow audio output.

This setting is compatibility mode dependent. If this option is not available for the mode you have chosen, the screen will show **N/A**.

WARNING: Without a carrier present (a transmitter on), the audio will be unscelched noise.

TxInfo

Shows the Block and Step of each of the transmitters associated with each channel (RX 1-4).



Depending on the compat mode selected for the channel, the tuning range of the receiver (for Smart-Tune functions) can be restricted. First choose the receiver channel using the

up & down arrows, then choose the desired band to match the TX tuning range, then select the kHz tuning step size.

Audio Setup

Audio Level:

Allows user to set Audio Output Level per channel and allows user to enable audio tone for level setting. This setting is Output Type dependent. If AES is chosen, there are no adjustments available.

Test Tone:

A 100Hz-20kHz audio test tone, adjustable from -48 to +0 dBu in 6 dB increments assists in matching the audio levels of equipment connected to the DSR4. The tone that is set is sent to all 4 channels.

Output Type

Allows user to choose output for each channel, analog or AES3.

Smart NR:

Allows user to enable Smart Noise Reduction on one or all receiver channels. Settings are: Off, Normal and Full. The default setting for digital compatibility modes is "Off." The default setting for hybrid modes is "Normal."

Talkback:

Allows user to enable the Talkback (TB) function to determine where the TB outputs are routed, and to select how the TB signals interact with the normal program audio on those outputs. If "Off" is selected for a receiver channel, then no Talkback function will occur on that channel, even if the transmitter's programmable switch is set to "TB" and activated. "Override" indicates that if a TB

command comes from the transmitter, then the TB audio goes to the specified receiver output, and the normal audio from that channel is muted. "Mix" indicates that the TB audio and the standard audio routed to that receiver output will be mixed to that output. "TB Only" indicates that the normal audio routed to that output is muted, and only the TB audio will be present, and, only when the TB command is activated on the transmitter.

Polarity:

Allows user to set audio polarity of each channel as either positive or negative.

Compat Modes

Allows user to set compatibility mode per receiver channel. Available modes are: mono digital modes D2 and HDM (High Density Mode); stereo digital modes Duet channels 1-2, and DCHX (encrypted) channels 1-2; and mono Hybrid modes: NA Hybrid, NU Hybrid, EU Hybrid, and JA Hybrid. EU and JA modes are not available for Block 941.

IR & Keys Menu

The operations below depend on the compatibility mode selected and the transmitter used. The DSR4 has two-way IR for use with digital products (DBu, DBSM, etc.) and one-way IR for use with older IR-capable units such as LT and HMa. One-way protocol can only "Send Frequency."

NOTE: You must position the transmitter's IR port directly in front of the DSR4 IR port, as closely as possible, to guarantee a successful sync. Also see page 22 for information on front panel sync, for bag and other close set-ups.

Send Frequency

Sends operating frequency to the transmitter, each channel separately. Press the **UP** button to send the Channel 1 frequency, and the **DOWN** button to send the Channel 2 frequency. Success for digital compat modes is indicated on the receiver as "IR Sync OK." For digital modes, failure will be indicated on the receiver as "IR SYNC FAILED." For Hybrid compat modes, success will be indicated on the transmitter as "IR SYNC." Failure will be indicated on the transmitter as "CP Err" or "Block Mismatch" depending on the transmitter model and the source of the error.

Send All

(available only for digital compat modes)

Sends frequency, channel name/s, and Talkback state to the transmitter. Press the **UP** button to send the information from Channel 1, and the **DOWN** button to send the information from Channel 2. Since two-way IR Sync is only available for digital transmitters, "N/A" will be next to any channels that are in a Hybrid compatibility mode.

Get Frequency

(available only for digital compat modes)

Send or retrieve (get) frequency from the transmitter. Choose encryption type by pressing the **UP** and **DOWN** buttons. Select **MENU/SEL** to get frequency.

Get All

(available only for digital compat modes)

Retrieve (get) transmitter's frequency, Talkback state, and channel name. Press the **UP** button to get all and use for Channel 1. Press the **DOWN** button to get all and use for Channel 2. Since two-way IR Sync is only available for digital transmitters, "N/A" will be next to any channels that are in a Hybrid compatibility mode.

Group Sync

These functions allows you to send or get Tuning groups via IR sync to/from transmitters and receivers capable of using Groups (DSR4 , DCHR, DBSM, DBSMD, DPR, DCR822, DPR-A). Use **MENU/SEL** button to choose the send/get mode. Then, press **MENU/SEL** again and "Go" will appear in the lower right corner. Press the **DOWN** button to complete the sync operation.

Encryption Key Management

The DSR4 has four options for encryption keys:

- **Universal:** This is the most convenient and basic option available, and the default setting on all Lectrosonics D2 digital units. All encryption-capable Lectrosonics transmitters and receivers contain the Universal key. The key does not have to be generated in the DSR4. Simply set the Lectrosonics encryption-capable transmitters and receivers to Universal key type, and the encryption is in place. This allows for convenient encryption amongst multiple transmitters and receivers, but is not as secure as creating a unique key.
- **Shared:** This key policy is designed for sports coverage and similar applications where a unique key provides enhanced security, but multiple transmitters and receivers can share the same key. Once generated by the receiver, the key can be transferred via IR to transmitters or additional receivers.
- **Standard:** This key policy provides excellent security, second only to the Volatile key policy. Once a unique key is created in the receiver, it can be transferred via IR only to transmitters, but not to other receivers. The receiver tracks the number of times the key is transferred. Once a Standard key has been transferred 256 times, an alert will indicate that a new key must be created.
- **Volatile** This is the most robust key policy available. After a unique key is created, it can be transferred only to transmitters, not other receivers. If a transmitter is powered off, it must have the key sent to

it again from the receiver. If the receiver is powered off, a new key must be generated and sent to the transmitters. In encryption terms, this is the "one time use" key management policy.

Encryption Keys

The DSR4 generates high entropy encryption keys to sync with encryption-capable transmitters. The user must select a key type and create a key in the DSR4, and then sync the key with the transmitter.

1. Begin by selecting a **Key Type**.
IR&Keys --> Key Type --> Universal, Shared, Standard or Volatile.
2. Next, if using the Shared, Standard or Volatile key type, select **MAKE KEY** to generate a new key. Select "Yes" to confirm Make Key. IR&Keys --> Make Key.

NOTE: When Universal Key type is selected, there is no prompt to create key, as it is not necessary.

3. A message will indicate that an Encryption Key has been created.
4. Sync new key with transmitter (see **Send Key**). The transmitted audio will then be encrypted with the new key.

Send Key

Select **SEND KEY** to transfer the encryption key to any compatible transmitters or, in Shared key policy, additional receivers. Success will be indicated by the message "**Encryption Key Sent**" on the receiver display, and "**Encryption Key Received**" on the transmitter display. IR key transfer failure will be indicated by the message "**IR Sync Failed**" on the receiver display.

Settings Menu

Lock/Unlock

The user can lock or unlock the receiver. In Locked condition, the menus and settings can be browsed but not changed. Attempting to change a setting or power off the unit while in the locked condition causes the message "**Settings Locked**" to appear on the screen. The **Lock/Unlock** condition will persist through battery changes or external power being removed.

Backlight

The user can set the backlight to be Always On or stay lit for 5 seconds or 30 seconds after the last button press on the interface. To set, use the **UP/DOWN** buttons to select and save.

RX On/Off

This function allows you to power off one or both receiver channels when not in use, to save power in a portable DC-powered system. Press the **MENU/SEL** button to select Channel 1 or Channel 2. Use the **UP** and **DOWN** buttons to turn on or off the selected receiver. The power savings is roughly 180 mW per channel.

Tx Batt Type

Choose between Bar, Volt or Time. Use **MENU/SEL** to select the channel and the **UP** and **DOWN** buttons to change values.

Tx Batt Timer

Choose between Bar, Volt or Time. Use **MENU/SEL** to select the channel and the **UP** and **DOWN** buttons to change values.

Tx Batt Icon

Choose between Bar, Volt or Time. Use **MENU/SEL** to select the channel and the **UP** and **DOWN** buttons to change values.

AutoOn

Press the **UP** or **DOWN** buttons to enable or disable the auto power on function. With this function enabled, the unit will power up upon the application of external DC power.

Locale

The locale should be chosen based on the region where the receiver is being used. There are three options available:

- **NA:** (default setting) represents the North American locale and prevents operation in the Astronomical Band (from 608 to 614 MHz).
- **EU:** represents the European locale, and has unrestricted operation over the entire band of the device: 470.100 to 614.375 MHz for A1B1. For B1C1, the range is 537.600 to 691.175 MHz.
- **AU:** represents the Australian locale, and has unrestricted operation over the entire band of the device: 520.000 to 614.375 MHz for A1B1. For B1C1, the range is 537.600 to 691.175 MHz.

Default

This setting restores the unit to factory settings.

About

Displays general information about the DSR4, including band, microcontroller and FPGA versions and serial number. The microcontroller version number is the first number under the band, followed by the FPGA version number after the forward slash.

Antenna Mounting and Orientation

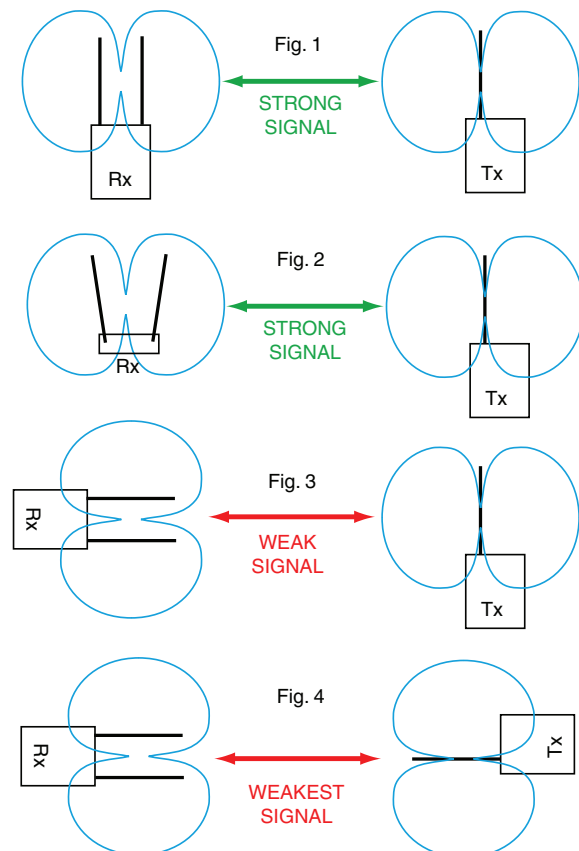
A variety of accessories are available to enable various antenna mounting options. For maximum operating range, the antennas should be vertical and above the camera and other equipment. The AMJ Rev. A antenna is jointed so the whips can be oriented vertically regardless of the orientation of the receiver.

Maximum sensitivity is perpendicular to the whip, so an ideal setup is shown in Fig. 1 and Fig. 2 where the receiver is mounted in either a vertical or horizontal position with the whips oriented vertically.

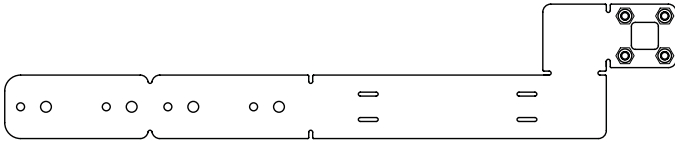
Fig. 3 depicts the receiver and antenna whips oriented horizontally, which places the null of the receiver antenna pattern pointing toward the transmitter. The result, of course, is a weak signal entering the receiver.

Fig. 4 depicts the worst setup where the nulls in both receiver and transmitter patterns face one another.

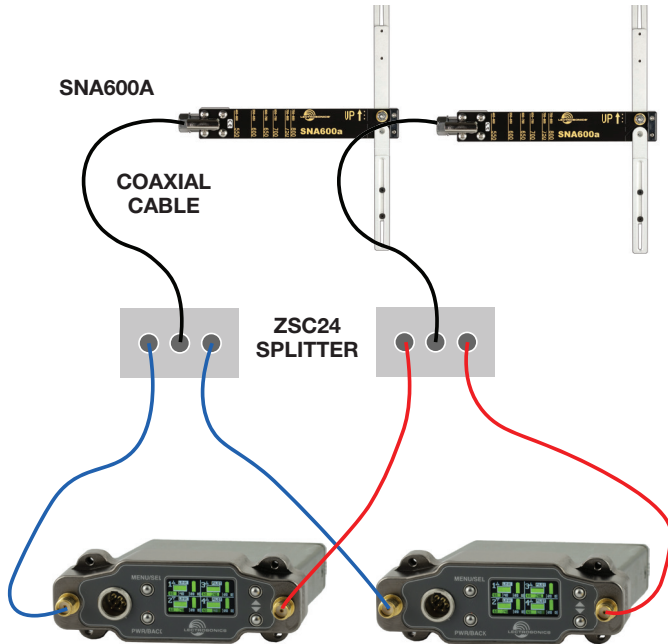
The transmitter antenna whips can point upward as shown in these diagrams, but they will work just as well with the whip pointing downward. Mount the transmitter so that the whip is vertical and not in direct contact with the wearer's body or metallic objects in clothing and costuming.



A “*bendable*” mounting strap is included that allows vertical orientation on a variety of surfaces. Several other adapters are also available for temporary or fixed installation.



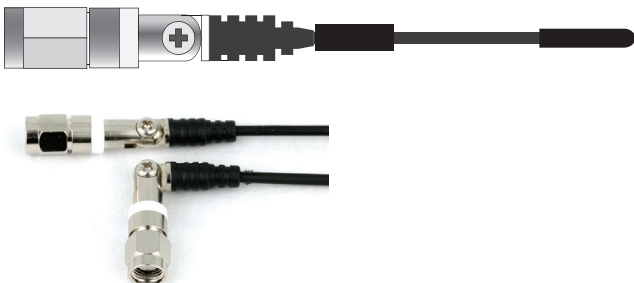
This is one example of using two splitters to feed two receivers.



Use Lectrosonics P/N 21770 BNC (F) to SMA (M) adapter; Pomona P/N 4290

AMJ Jointed Antenna

The AMJ antenna is a general purpose design with a hinged joint that pivots in both directions for positioning the whip at any desired angle. The pivot allows the whips to be oriented vertically regardless of the mounting position of the receiver.



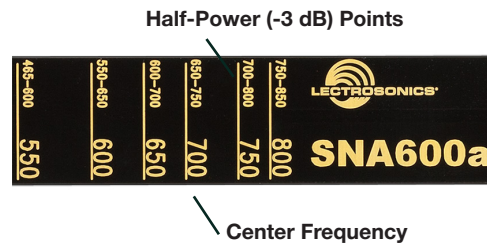
The hinged joint pivots in both directions

SNA600A Omni Dipole Antenna

The SNA600a antenna is a versatile tool for use with wireless microphone receivers or IFB transmitters. The center frequency of its 100 MHz bandwidth is tunable from 550 to 800 MHz; however, the roll-off above and below this band is gradual. The SNA600a measures lower than a 2:1 SWR (Standing Wave Ratio) from 465 MHz to 850 MHz when the antenna arms are fully extended.



Antenna Scale



Firmware Update Instructions

Firmware updates are made through Wireless Designer, with a file downloaded from the web site and the DSR4 connected via USB using the front panel connector only. The USB port on the receiver requires a micro-B male plug on the connecting cable. The other end of the cable would normally be a USB A-Type or USB-C male connector to fit the most common type of USB jack used on computers.

Be aware of the following when preparing to connect your DSR4 to Wireless Designer via USB:

The DSR4 must have the micro and FPGA firmware both updated to v1.01 or higher. Wireless Designer version must be at least 2.0.39 for macOS, or version 2.0.42 or higher for Windows. These are available on our Support website at: <https://lectrosonics.com/support.html>.

Refer to **Help** in Wireless Designer software for the update procedure.

NOTE: If your Wireless Designer does not “recognize” the DSR4 and you are using the most updated version, your USB drivers may need to be updated. This is not a procedure that needs to be done often. You can find a folder with the most updated drivers on the Wireless Designer section of our Support page.

Antenna/Block Reference Table

The two AMJ whip antennas supplied with the receiver are factory cut to specific frequency blocks as shown in the table below. A colored cap and label are used on blocks 20 through 26, and a black cap and label are used on the other blocks to denote the frequency range of each model.

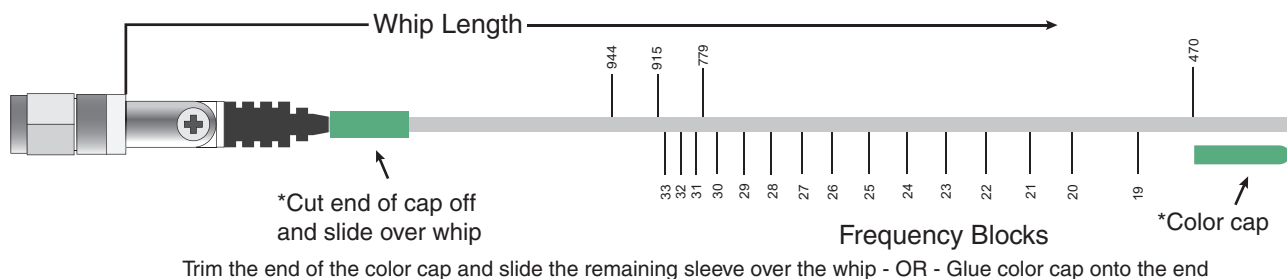
The chart is useful for fabricating an antenna from coaxial cable or other materials, or for identifying the frequency of an antenna that is not marked. The lengths shown are specifically for the AMJ whip antenna with a SMA connector, as determined by measurements with a network analyzer. The optimal length of the element in other designs will likely be different than those shown in this table, but since the bandwidth is typically wider than the specified block, the exact length is not critical for useful performance in whip, dipole and coaxial designs.



	BLOCK	FREQUENCY RANGE	CAP COLOR	ANTENNA WHIP LENGTH	
A1	470	470.100 - 495.600	Black w/ Label	5.47"	141.2 mm
	19	486.400 - 511.900	Black w/ Label	5.19"	133.9 mm
	20	512.000 - 537.500	Black w/ Label	4.95"	126.2 mm
B1	21	537.600 - 563.100	Brown	4.73"	119.6 mm
	22	563.200 - 588.700	Red	4.47"	113.8 mm
	23	588.800 - 614.300	Orange	4.23"	108.5 mm
C1	24	614.400 - 639.900	Yellow w/Label	4.07"	103.4 mm
	25	640.000 - 665.500	Green w/Label	3.87"	98.3 mm
	26	665.600 - 691.100	Blue w/Label	3.68"	93.5 mm
941/961	941	941.525 - 959.825	Black w/Label	2.53"	64.3 mm
	961	961.100 - 1014.900	Black w/Label	2.53"	64.3 mm

Note: Not all Lectrosionics products are built on all of the blocks covered in this chart.

Lay uncut antenna on this template and cut to length for the desired frequency block



Note: Check the scale of your printout. This line should be 6.00 inches long (152.4 mm).

Diagnosics

Multi-channel System Checkout

Interference can result from a wide variety of sources including TV station signals, other wireless equipment in use nearby, or from intermodulation within a multi-channel wireless system itself. Regardless of how the frequencies were coordinated, a final checkout procedure is always a good idea.

Scanning with the RF spectrum analyzer built into the DSR4 system will identify external RF signals, but it does not address the compatibility of the selected frequencies.

The pre-coordinated frequencies address in-system intermodulation, but obviously cannot take into account RF signals from external sources that may be present in the location where the system will be operating.

1. Set up the system for testing.

Place antennas in the position in which they will be used and connect to the receivers. Place transmitters about 3 to 5 feet apart, about 25 to 30 feet from the receiver antennas. If possible, have all other equipment on the set, stage or location turned on as well, especially any mixing or recording equipment that will be used with the wireless system.

2. Set all receivers on clear channels.

Turn on all receivers, but leave the transmitters off. Observe at the RF signal strength indicator for each receiver module. If a signal is present, change the frequency to a clear channel where no signal is indicated. If a completely clear channel cannot be found, select the frequency with the lowest RF level indication. Once all receiver modules are on clear channels, go to step 3.

3. Turn each transmitter on one at a time.

Start with all transmitters turned off. As you turn on each one, look at the matching receiver to verify a strong RF signal is received. Then, look at the other receivers and see if one of them is also picking up the signal. Only the matching receiver should indicate a signal. Change frequencies on either system slightly until all channels pass this test, then check again to see that all channels are still clear as done in step 2.

4. Turn each transmitter off one at a time.

With all transmitters and receivers turned on, turn each transmitter off one at a time, in turn, and look at the RF level indicator on the matching receiver module. The RF level should disappear or drop to a very low level. If it does not, change frequency on that receiver and transmitter and try it again. When a clear frequency is found, turn the transmitter on and move on to the next channel.

IMPORTANT: Any time a frequency is changed on any of the systems in use, you must start at the beginning and go through this procedure again for all systems. With a little practice, you will be able to do this quickly and save yourself some “multi-channel grief.”

Supplied Parts and Accessories

27372

IR Reflector. Replacements can be ordered separately using this part number.



27373

Adhesive Strip. Replacements can be ordered separately using this part number.



	Ships With
A1B1	(2) AMJ19; (2) AMJ22
B1C1	(2) AMJ22; (2) AMJ25
941	(2) AMJ944
961	(2) AMJ961

AMJ19

Swivelling Whip Antenna with Standard SMA Connector, Block 19. Ships with A1B1 units only.



AMJ22

Swivelling Whip Antenna with Standard SMA Connector, Block 22. Ships with A1B1 and B1C1 units.



AMJ25

Antenna with swiveling SMA connector. Shipped with B1C1 units only.



AMJ944

Antenna with swiveling SMA connector. Shipped with 941 units only.



AMJ961

Antenna with swiveling SMA connector. Shipped with 961 units only.



Optional Parts and Accessories

21770

Male SMA to Female BNC Adapter.



21926

MicroB USB cable with USB-A for firmware updates.



28979

Replacement screws (4) for 36016 DSR4 mounting bezel kit.

ACOAXTX

Antenna, Coaxial, SMA Plug; Specify Block.



DCR15/4AU

Power Supply, 4ADC 100-240V In, 15VDC Regulated Output.



DCR15/1A8U-H

Power Supply, 100-240V In, 15VDC Regulated Output. Max 1.8A. Hirose 4-pin DC connector.



Aligning Specialty Adapters

We have incorporated alignment marks into our DSR4 adapters and battery sleds. You can easily confirm that the units are aligned correctly by the “bowtie” shape of the engravings.



DSR4BATTSLEDTOP

A “battery sled” that positions the battery on top of the receiver for mounting on the top of the camera with the LCD and rear panel nomenclature oriented correctly. Two TA5 audio connectors and one DC coaxial connector.



DSR4BATTSLEDBOTTOM

A “battery sled” that positions the battery on the bottom of the receiver for mounting on the bottom of the camera with the LCD and rear panel nomenclature oriented correctly. Two TA5 audio connectors and one DC coaxial connector.



Do not use SR9VBP accessory with DSR4 receiver - it does not supply enough current for this receiver.

DSR4DB25

DSR4 Superslot adapter connector plate for Sound Devices SL-2. This includes the adapter plate only with the two mounting screws plus one extra screw.



DSR4EXT

Adapter kit for DSR4 receiver, two TA5 audio output connector, includes 6' power cable, 2 screws (28615) in dummy



DSR4EXTUSB Adapter

This kit includes an output and power panel with two TA5 male balanced output pairs, and a locking Hirose-4 DC power jack. A USB-C jack allows for connection of the DSR4 to Wireless Designer for monitoring, channel setup, scanning, and frequency coordination. Firmware updates must be done with the USB Micro B connector on the top panel of the unit. **Power cord not included; order PS200A, DCR15/1A8U-H or equivalent.**



DSR4OCTOSPACER

DSR4 mounting bezel (bezel is P/N 36016) kit with 4 screws (P/N 28979) for Octopack and Quadpack, no connector included. **WARNING: Do not use Hirose 4 DC connector on the Octopack when mounting DSR4 receivers.**



DSR4SUPER

DB-25 bottom plate adapter for DSR4 receivers used in SuperSlot docks. This includes: The end plate adapter, black bezel (PN 27315-1), gasket and hardware set.



MCTA5TA3F2

Audio cable for portable digital receivers, TA5F to two TA3F connectors, 18” cable. For two analog balanced receiver outputs, or two AES digital pairs (four audio channels), into mixer or recorder inputs.



MCTA5TPT2

Audio cable for portable digital receivers, TA5F to two stripped and tinned wires, 18” cable. For two analog balanced receiver outputs, or two AES digital pairs (four audio channels).



MCSR/5PXR2

Audio cable for SR-type receivers, rotatable right-angle TA5 to two 3-pin male XLRs. 20" cable.

**PS200A**

Power Cable, 15 in., Hirose4 to LZR

**PS2200A**

Power Cable, 15 in., Hirose4 to Dual LZR

**SNA600A Omni Dipole Antenna**

Versatile Antenna, 100 MHz Bandwidth tunable from 550 to 800 MHz. Includes mounting screws and bracket. Requires SMA to BNC Adapter.

**UMCWBD-L**

Rack mount with power and RF signal distribution for four diversity compact receivers in a single rack space. Refer to following kits for retrofit.

ZS-UMC-411A-KIT

Kit for UCR411A mounting. Snap-in bezel. Non-locking DC power tail

ZS-UMC-DCR822-KIT

Kit for DCR822 mounting. Snap-in bezel Thread-locking "LZR" DC power tail

ZS-UMC-SR-KIT

Kit for SRB/C mounting. Snap-in bezel. Screw kit. Mid-mounting plastic frame. Thread-locking "LZR" DC power tail.

ZS-UMC-DSR4-DSR-KIT

Kit for DSR4/DSR mounting. Snap-in bezel. Screw kit. Mid-mounting plastic frame. Thread-locking "LZR" DC power tail

ZS-UMC-DSR4-HIROSE4-KIT

Kit for DSR4 mounting with Hirose 4 power. Snap-in bezel. Screw kit. Mid-mounting plastic frame. Hirose 4-pin DC power tail

IR Reflector - Purpose and Installation

Some users, especially those who plan to use the DSR4 in a rack or closely-packed bag, may find syncing difficult due to the close spacing near the IR window. For these users, we include an IR Reflector (P/N 27372) and Adhesive Strip (P/N 27373). Once in place, this reflector allows IR sync to happen from the front of the control panel.



Materials Needed:

- IR Reflector
- Adhesive strip
- Alcohol pad or alcohol and a cotton swab
- Tweezers (or needle nose pliers)

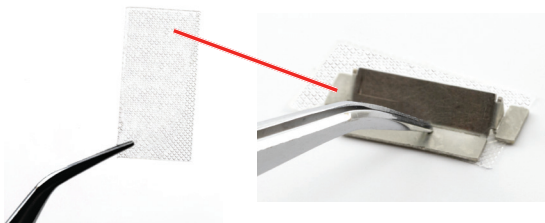
Instructions:

1) Holding the reflector with tweezers (or pliers), swab the reflector with the alcohol pad or alcohol on a cotton swab. Lay reflector with the flat side, as shown. The flat side is where adhesive will be placed. The oil from your fingers will hamper adhesion, which is why it is important not to touch the reflector.

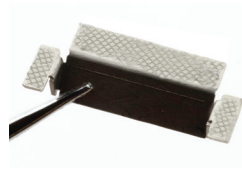


2) Swab the area just below and directly on either side of the IR window on the DSR with the alcohol pad. This is where the reflector will be placed.

3) Carefully remove the paper backing from the adhesive strip. Using your tweezers/pliers, place it sticky side up on a flat surface. Pick up the reflector and lay it on top of the adhesive strip. Press the center and end tabs into the adhesive with your tweezers.



4) Slowly and carefully remove the reflector from the adhesive strip using your tweezers. It will leave the adhesive from the strip behind. Do not be concerned with the “coverage,” as the reflector only needs enough adhesive to stick to the DSR4.



5) Lay the DSR4 on a flat surface with adhesive facing up, and, using your tweezers, align the bottom edge of the reflector with the bottom of the “IR PORT” engraving. Press firmly with fingers to adhere the reflector to the DSR4. The bond is strong but can be removed if needed. You will need another adhesive strip to re-adhere (see Accessory pages for re-order information).



Specifications and Features

Operating Frequencies (MHz):

Model A1B1:	470.100 - 614.375
Model B1C1:	537.600 - 691.175
941:	941.525 - 959.825
961:	961.100 - 1014.900

NOTE: It's the user's responsibility to select the approved frequencies for the region where the transmitter is operating.

Frequency Selection Steps:	25 kHz
Frequency Stability:	±0.001 %
Front end bandwidth:	±5.5 MHz, @ -3 dB
Sensitivity:	20 dB Sinad: 0.9 uV(-108 dBm), A weighted 60 dB Quieting: 1.12 uV (-105 dBm), A weighted
AM rejection:	>60 dB, 2 uV to 1 Volt
Modulation acceptance:	85 kHz
Spurious rejection:	85 dB
Third order intercept:	+15 dBm
Diversity method:	Antenna phase switching (4 channel operation) Vector diversity (2 channel operation)
Antenna inputs:	50 Ohm; SMA female connectors
Audio output connectors:	<ul style="list-style-type: none"> • Interchangeable D connector adapters or camera slot interfaces • Dual TA5 male (mini XLR) balanced output adapter • Battery sled adapters with TA5 male outputs. • Front panel TA5 male for analog output channels 3 and 4.

Audio Performance (overall system):

Frequency Response:	25 Hz to 20 kHz (+0/-3 dB)
THD:	0.2% (typical)

SNR at receiver output (dB):

Note: The dual envelope "soft" limiter provides exceptionally good handling of transients using variable attack and release time constants. Once activated, the limiter compresses 30+ dB of transmitter input range into 4.5 dB of receiver output range, thus reducing the measured figure for SNR without limiting by 4.5 dB.

	SmartNR	No Limiting	w/Limiting
OFF		103.5	108.0
NORMAL		107.0	111.5
FULL		108.5	113.0

Input Dynamic Range: 125 dB (with full Tx limiting)

Overall Latency (time delay): 1.6 ms with digital source,
<2.9 ms with Hybrid TX

Audio Test Tone: 1 KHz, -50 to +7 dBu, <1%THD

Controls:

- Front Panel:**
- Color LCD display
 - Menu/Sel, Pwr/Back, Up/Down Arrow Buttons
 - USB Port
 - IR Port

- Rear Panel:**
- Proprietary connector for audio/power accessory panels.

External Power: Minimum 9 Volts to maximum 17 VDC

Operating Temp. Range:

max current 420mA at 9 VDC.

-20 to 40°C; -5 to 104°F

Weight:

408 grams (14.4 oz.) w/o audio adapter

Dimensions:

3.23" wide x 1.23" high x 5.50" deep
82 wide x 31 high x 140 deep mm

Specifications subject to change without notice.

Troubleshooting

Symptom

Possible Cause

INITIAL POWER ON

Display not active or lit.

External power supply disconnected or inadequate.

Main power supply fuse tripped. Turn the receiver off, remove the cause of the overload and turn the receiver back on.

Wrong polarity power source. The external DC in requires POSITIVE to be on the center pin.

Display has timed out. Press any button to revive.

ANTENNAS AND RF SIGNAL STRENGTH

RF Level is weak.

Receiver may need to be moved or reoriented.

Antenna on transmitter may be defective or poorly connected - double check antenna on transmitter.

Improper length of antenna, or wrong antenna on transmitter or receiver. UHF whip antennas are generally about 3 to 5 inches long. UHF helical antennas may be shorter, but are often less efficient.

No RF Signal

Make certain frequency settings on transmitter match the receiver frequency settings.

Ensure transmitter is in transmit mode.

AUDIO SIGNAL QUALITY

Poor signal to noise ratio

Transmitter gain set too low.

The noise may not be in the wireless system. Turn the transmitter audio gain all the way down and see if the noise remains. If the noise remains, then turn the power off at the transmitter and see if it remains. If the noise is still present, then the problem is not in the transmitter.

If noise is still present when the transmitter is turned off, try lowering the audio output level on the DSR4 and see if the noise lowers correspondingly. If the noise remains, the problem is not in the receiver.

Receiver output is too low for the input of the device it is feeding. Try increasing the output level of the DSR4.

Distortion

Transmitter input gain too high. Check and/or readjust input gain on transmitter according to the LEDs on the transmitter and then verify the setting with the audio meter in the main window.

Audio output level too high for the device the DSR4 is feeding. Lower the output level of the DSR4.

Bad frequency response or generally poor audio quality.

Ensure the receiver is set to the compatibility mode that matches the transmitter in use.

DISPLAY NOT ACTIVE OR LIT

Ensure that the unit has the correct power supply and is connected.

Service and Repair

If your system malfunctions, you should attempt to correct or isolate the trouble before concluding that the equipment needs repair. Make sure you have followed the setup procedure and operating instructions. Check the interconnecting cables and then go through the **Troubleshooting** section in this manual.

We strongly recommend that you **do not** try to repair the equipment yourself and **do not** have the local repair shop attempt anything other than the simplest repair. If the repair is more complicated than a broken wire or loose connection, send the unit to the factory for repair and service. Don't attempt to adjust any controls inside the units. Once set at the factory, the various controls and trimmers do not drift with age or vibration and never require readjustment. **There are no adjustments inside that will make a malfunctioning unit start working.**

LECTROSONICS' Service Department is equipped and staffed to quickly repair your equipment. In warranty repairs are made at no charge in accordance with the terms of the warranty. Out-of-warranty repairs are charged at a modest flat rate plus parts and shipping. Since it takes almost as much time and effort to determine what is wrong as it does to make the repair, there is a charge for an exact quotation. We will be happy to quote approximate charges by phone for out-of-warranty repairs.

Returning Units for Repair

For timely service, please follow the steps below:

- A.** DO NOT return equipment to the factory for repair without first contacting us by email or by phone. We need to know the nature of the problem, the model number and the serial number of the equipment. We also need a phone number where you can be reached 8 A.M. to 4 P.M. (U.S. Mountain Standard Time).
- B.** After receiving your request, we will issue you a return authorization number (R.A.). This number will help speed your repair through our receiving and repair departments. The return authorization number must be clearly shown on the **outside** of the shipping container.
- C.** Pack the equipment carefully and ship to us, shipping costs prepaid. If necessary, we can provide you with the proper packing materials. UPS is usually the best way to ship the units. Heavy units should be "double-boxed" for safe transport.
- D.** We also strongly recommend that you insure the equipment, since we cannot be responsible for loss of or damage to equipment that you ship. Of course, we insure the equipment when we ship it back to you.

Lectrosonics USA:

Mailing address:

Lectrosonics, Inc.
PO Box 15900
Rio Rancho, NM 87174
USA

Shipping address:

Lectrosonics, Inc.
561 Laser Rd. NE, Suite 102
Rio Rancho, NM 87124
USA

Telephone:

(505) 892-4501
(800) 821-1121 Toll-free
(505) 892-6243 Fax

Web:

www.lectrosonics.com

E-mail:

sales@lectrosonics.com
service.repair@lectrosonics.com

Lectrosonics Canada:

Mailing Address:

720 Spadina Avenue,
Suite 600
Toronto, Ontario M5S 2T9

Telephone:

(416) 596-2202
(877) 753-2876 Toll-free
(877-7LECTRO)
(416) 596-6648 Fax

E-mail:

Sales: colinb@lectrosonics.com
Service: joe@lectrosonics.com

Self-Help Options for Non-Urgent Concerns

Our Facebook groups and weblists are a wealth of knowledge for user questions and information. Refer to:

Lectrosonics General Facebook Group: <https://www.facebook.com/groups/69511015699>

D Squared, Venue 2 and Wireless Designer Group: <https://www.facebook.com/groups/104052953321109>

The Wire Lists: <https://lectrosonics.com/the-wire-lists.html>

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 liability 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.

