

Connecting the Maxon SRC-40 to the Trident Raider Trunking Logic Controller

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INTRODUCTION

The versatility of the Maxon SRC-40 repeater allows for it to be controlled by an external peripheral such as an LTR controller. This application note describes how to connect the Maxon SRC-40 to the popular Trident Raider LTR controller. In addition, many of the SRC-40's features are highlighted to show how it can be used to better serve you in a trunking system.

CONNECTIVITY

The SRC-40 sports a 25pin female D-SUB connector on the rear of the unit. This connector supports all the I/O required for a clean one-cable connection from the Trident Raider to the Maxon SRC-40. Figure 1 diagrams the connections:

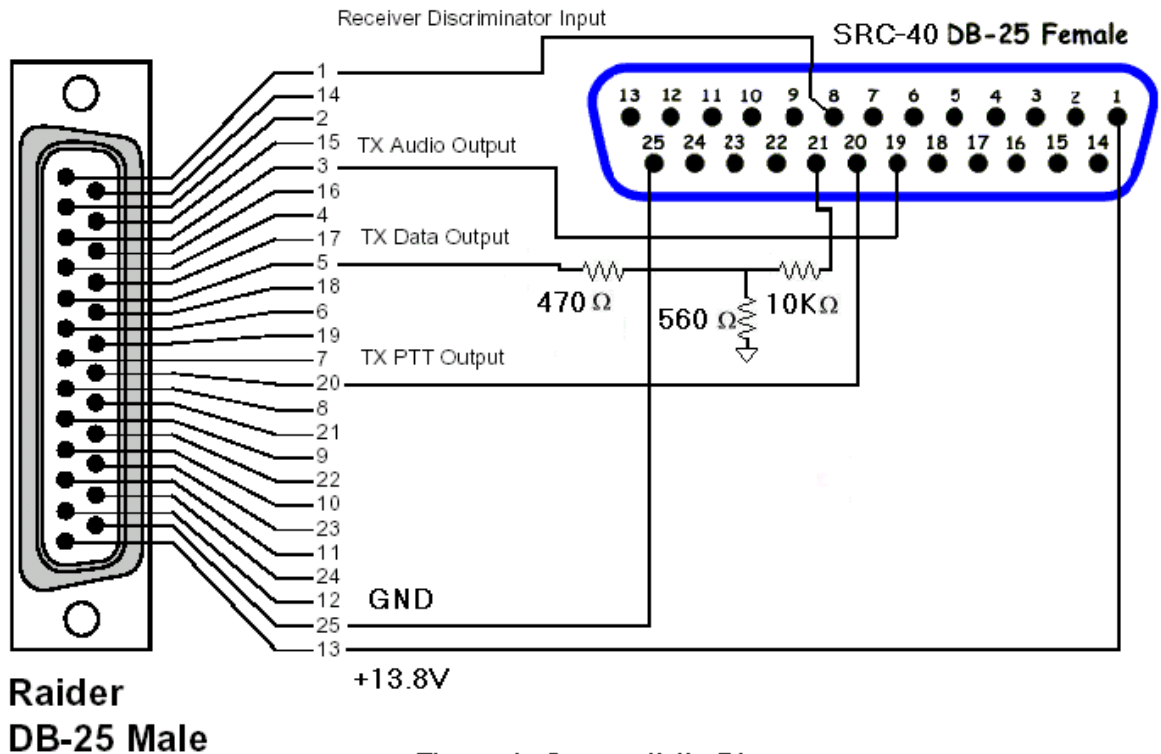


Figure 1: Connectivity Diagram

To achieve these connections a custom built cable is to be constructed. This cable can be purchased or you can easily build it yourself. To build the cable, six-conductor shielded cable, and two male 25pin DSUB connectors are required. It is recommended the cable be made as short as possible. All of the connections are simple except for the TX Data. The DC level of TX Data Output from the Raider Panel is at 4.5Volts. The SRC-40's TX Data Input requires the DC level to be at 2.5V DC. A voltage divider and impedance matching resistor is required to interface the TX Data from the Raider to the SRC-40. This resistor

network is to be placed at the repeater side of the connecting cable and ¼ watt 5% resistors can be used. The shield is to be connected to ground.

REPEATER SETUP

The Maxon SRC-40 is factory set-up to be used as a community repeater. When using the SRC-40 as a repeater for an LTR controller, the discriminator audio and the TX Audio input needs to be rerouted. To do this, the chassis needs to be opened and two jumpers on the Accessory PCB need to be swapped. As you are facing the front of the SRC-40, the Accessory PCB is located at the rear of the unit. J11 & J14 need to have their jumpers set all the way to the left. See the SRC-40 owner's manual for more information on this procedure.

Prior to using the new cable, make sure the SRC-40 is programmed for the TX-RX frequencies it is to operate on.

OPERATION

Once all the cable's connections have been tested, connect the SRC-40 to the Trident Raider. Power the repeater and observe the SRC-40 goes through its power-up sequence and power is supplied to the Trident Raider. Using the keypad, select the channel the SRC-40 is to operate on. Press and release the AUX button to place the SRC-40 in auxiliary mode. The repeater is now a slave to the Trident Raider. At this point, follow the Trident Raider installation manual for aligning the controller as it interfaces with the SRC-40. The SRC-40 will indicate it's receiving carrier by illuminating the yellow LED. The SRC-40 will indicate it's transmitting by illuminating the red LED.

FEATURE HIGHLIGHTS AND HELPFUL HINTS

LTR DECODER

The SRC-40 supports a built-in LTR decoder. This diagnostic tool allows for viewing the home channel and ID of the call being repeated. This feature is activated during AUX mode by pressing-and-releasing the BASE button. The LTR decoder is active when the LCD displays 'd-----'.

CHANNEL MONITORING

You can monitor the audio traffic on the repeater channel by activating the repeater's built-in front panel speaker. To activate the internal speaker simply press-and-release the MON button. The internal speaker is active when the NOTE icon is displayed.

BACK-UPS

Since the Maxon SRC-40 supports up to 16 channels, it offers a convenient way to back-up almost all of your repeaters in your trunking system. By simply programming and naming all the channels, you now have a back up in the event a key repeater should fail. Please remember: For all the channels you program, you need to perform the simple procedure to restore the factory defaults for each channel. See the Maxon SRC-40 owner's manual for more information.

Both the Trident Raider and the Maxon SRC-40 decode and encode CTCSS and DCS as community tone panels. If the Trident Raider is being used to dispatch conventional type calls, the Maxon SRC-40 can be used to back the Trident Raider up. If the Trident Raider is required for another site, the SRC-40 repeater can continue to dispatch these conventional calls. Simply remove the Trident Raider from the system and place the SRC-40 back in repeater mode. Remember: The SRC-40 has to already be programmed and the jumper settings for J11 & J14 on the Accessory PCB need to be put all the way to the right.

The Maxon SRC-40 supports a back-up RF power module in the event the current one should fail. Simply follow the instructions in the SRC-40's owner's manuals on how-to hot-swap the internal modules.

The Maxon SRC-40 supports the migration to narrow-band (12.5kHz) mandated by the FCC.