Keywest Technology

STAR-8
USER'S GUIDE

Installation and Connections

STAR-8 Installation

The STAR-8 connects up to 8 video/stereo audio channels to a Sage ENDEC emergency alert system. Upon commands from the ENDEC the STAR-8 will insert EAS emergency messages as a crawl overlay keyed into the incoming video signal. When the ENDEC provides a contact closure to the STAR-8 the audio supplied from the ENDEC is connected to all channel's audio output

For rack mounting there must be a 1 rack unit space available in the equipment rack.

The STAR-8 is powered from a 115v AC outlet.

VIDEO CONNECTIONS

All video connections are made using BNC connectors. There are 16 BNC connectors on the rear panel of the STAR-8. Each connector is labeled as Video IN and Video OUT for a specific channel. Note that in the absence of power, the internal relays are not energized and a connection is provided between the Video IN and Video OUT for each channel. When the relay is energized the input video is terminated in 75 ohms. The output video signal back porch is clamped to zero and is source terminated and capable of driving a single 75 ohm terminated cable.

CONTROL CONNECTIONS

There is a single 4 terminal connector block for connecting the contact closure from the Sage ENDEC to the STAR-8. The STAR-8 provides a set of buffered contacts which follow the input contact closure. In this way additional STAR-8 units can be connected in series so that the contact closure of the Sage ENDEC is not overloaded.

The contact closure is applied to the 4 pin connector labeled:

Label	**Function**
CONTACT-G	from ENDEC or previous STAR-8
CONTACT-CT	from ENDEC or previous STAR-8
CONTACT-C0	to next STAR-8
CONTACT-C1	to next STAR-8

You connect the first STAR-8 to the pair of wires on the ENDEC labeled “Decoder Active” You connect the G and CT control input terminals of the second STAR-8 unit to the C0/C1 terminals of the first star 8 , etc. It does not matter which ENDEC wire is connected to the G or CT terminals, nor does it matter which wire of the C0/C1 pair connects to the second IN-G or IN-CT terminal.

DATA INPUT

The data source for the STAR-8 comes from the Sage ENDEC. A serial data cable is provided which will connect the port labeled SERIAL 2 to the port configured on the ENDEC as data output, typically COM2.

Signal for STAR-8	**ENDEC pin (DB9S)**	**STAR-8 pin (DB9S)**
RxD data input	3	2
TxD data output	2	3
Ground	5	5

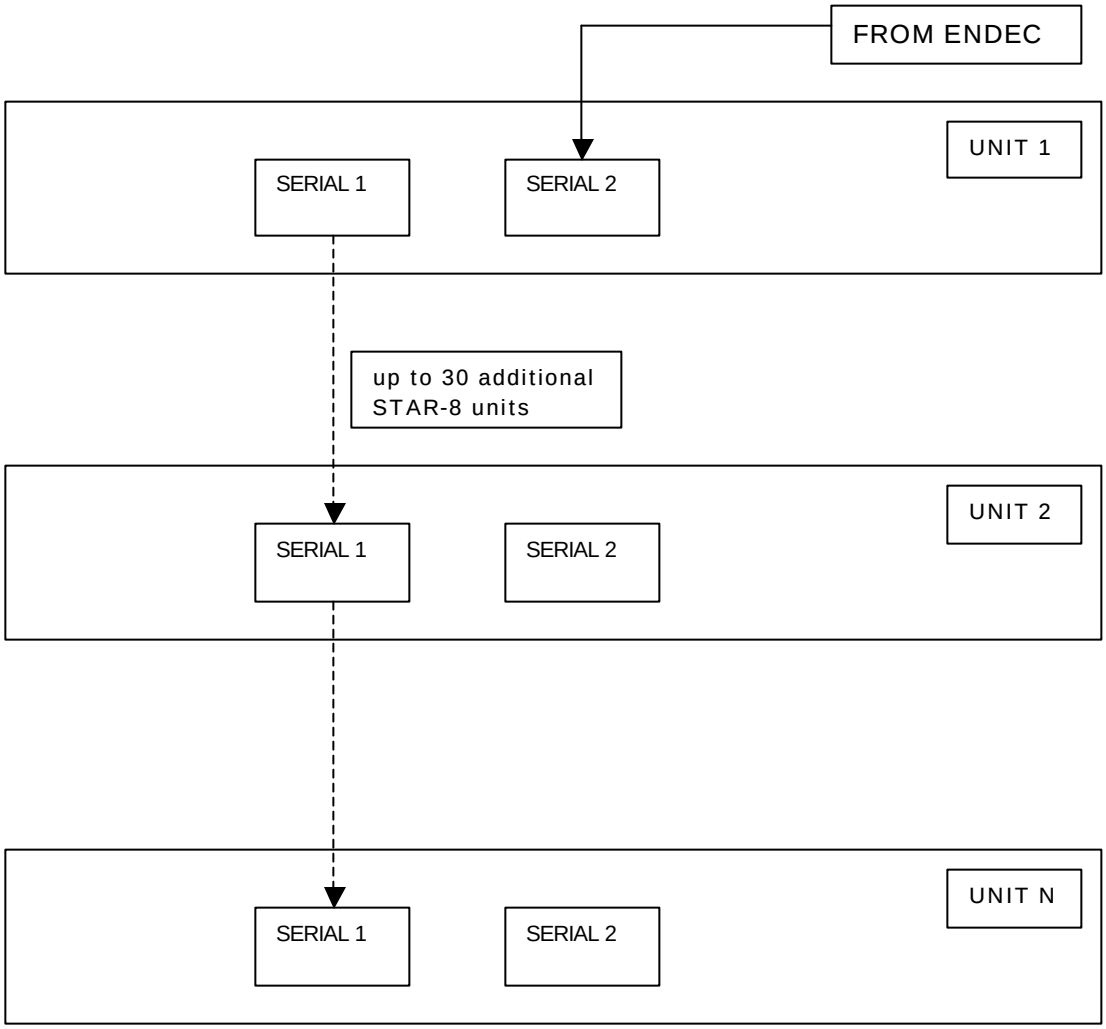
STAR-8 Installation

It is possible to connect multiple STAR-8 units as slave units to the single STAR-8 that receives data from the ENDEC. To do this, you would connect the SERIAL- 1 port on the STAR-8 to the SERIAL 1 port on the additional units. In this configuration the first STAR-8 will transmit all input ENDEC serial data to the additional units.. Your SERIAL 1 port is factory configured as RS 422. The cable connections are as follows:

Master		**Slave(s)**	
transmit +	6	receive +	8
transmit -	7	receive -	9
receive +	8	transmit +	6
receive -	9	transmit -	7
ground	5	ground	5

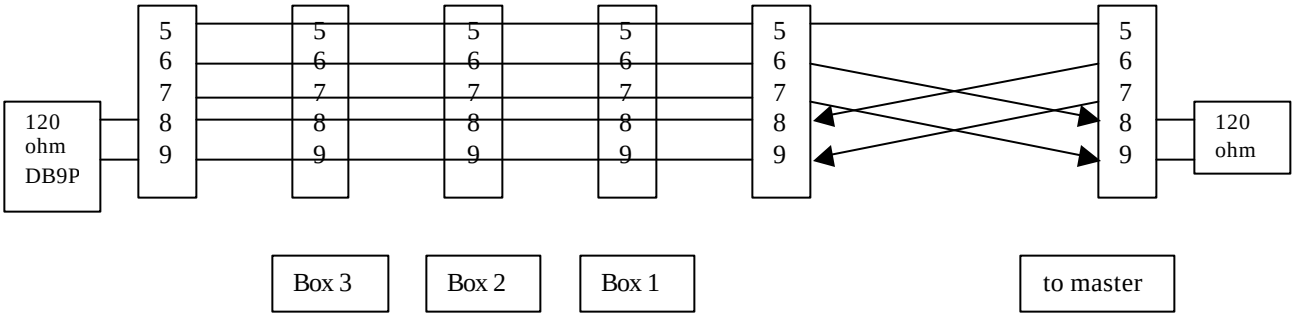
When using this wiring configuration you must place a 120 ohm 1/8 watt resistor at the last slave connector across pins 8 and 9. You must also place a 120 ohm 1/8 watt resistor at the Master connector across pins 8 and 9. You may connect all slave units together by means of a daisy chained ribbon cable. The connector to the Master unit will have to be hard wired to effect the crossover connections.

The maximum number of slave units that can be connected is 30.

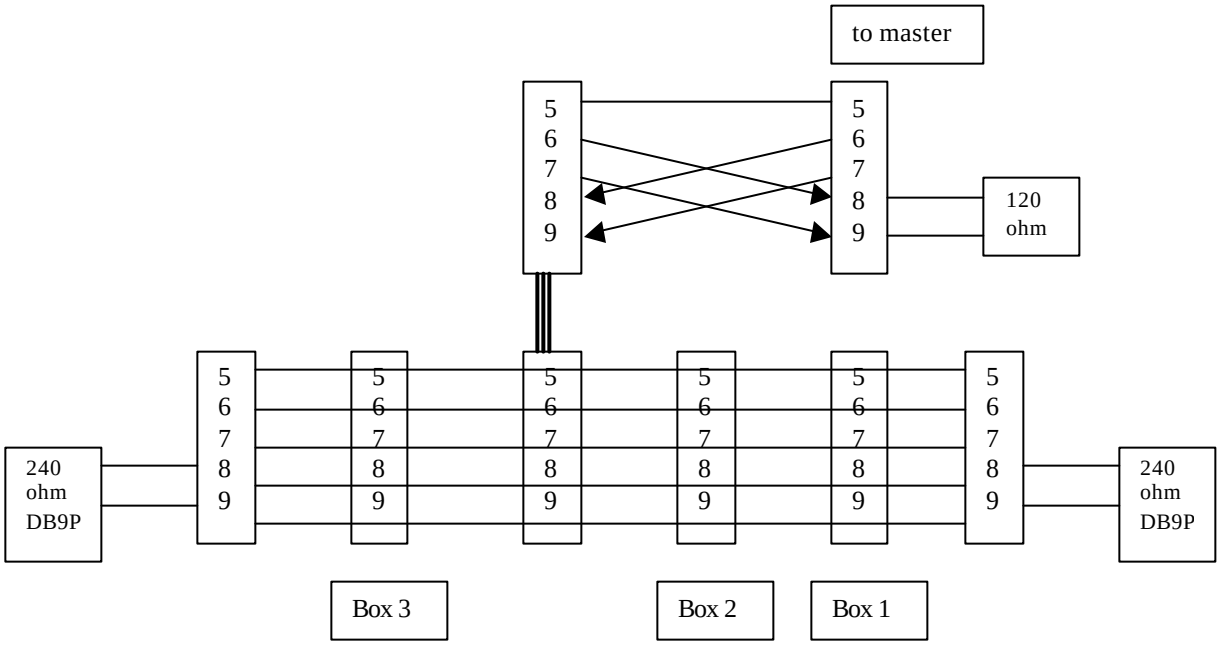


STAR-8 Installation

When making ribbon cables to interconnect multiple STAR-8 units you can make one daisy chain cable for ALL units including the master. Use DB9-S connectors on the ribbon connector. If the master unit is at the end of the chain, then install two extra DB9-S connectors, one at each end of the ribbon. Then make up a standard DB9-P connector with a 120 ohm resistor between pins 8 and 9. That connector will be installed at the unused DB9-P of the ribbon at the end of the chain. Make up a null modem type cable with standard solder type DB9-P connectors on both ends. In this cable connect the wires as shown below crossing the transmit and receive pairs. Also, install a 120 ohm resistor between pins 8 and 9 of the connector that will be connected to the Master unit.



If you must connect the master unit somewhere in the middle of the chain, then you should use the null modem type cable described above between the cable position designated for the master and the master unit. Note that when you provide the master at a mid point connection then you should provide two terminating DB9P connectors, one at each end of the ribbon cable, each one with a 240 ohm termination resistor across pins 8 and 9.



Above diagrams show connection of 4 STAR-8 boxes for a total of 32 channels.

STAR-8 Installation

AUDIO CONNECTIONS

All audio connections are made by means of screw terminals on the rear of the STAR-8. There is a single 5 terminal connector block for connecting a source of (balanced) stereo audio to the STAR-8. Audio input is applied to a high input impedance (>20k ohms) distribution amplifier so that each of the 8 output channels is driven independently. There are four 18 terminal connector blocks for connecting the balanced stereo audio input and output leads for each of the 8 channels.

Audio connections are made from the ENDEC "Speaker Line Out" and "Audio Common" terminals (which is unbalanced) to the STAR-8 audio input for the left channel. Currently the right channel is unused for EAS. You should use shielded twisted pair wire for all audio connections. In all cases the shield wire goes to a ground terminal. Make sure you note the polarity of the balanced signal. When connecting an unbalanced input, such as from the ENDEC, to the STAR-8 always connect the audio signal lead to the STAR-8 + (plus) input terminal and ground the - (minus) input terminal. When connecting a balanced output of the STAR-8 to an unbalanced load do NOT connect the - (minus) output, use the +(plus) output and ground. Each output amplifier is capable of driving a single 600 ohm balanced load.

You should supply a 600 ohm (standard value is 620 ohms) resistor to terminate the audio input line to the STAR-8. Terminations should be supplied as needed from the STAR-8 outputs to your final audio output.

Connections for the audio channels:

Channels 1,3,5,7		
Signal	IN	OUT
L+	13	11
L-	12	10
R+	18	16
R-	17	15
GND	14	

Channels 2,4,6,8		
Signal	IN	OUT
L+	4	2
L-	3	1
R+	9	7
R-	8	6
GND	5	

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