

Model 970 Installation and Operation

The Model 970 is a protocol converter which allows any device capable of receiving and transmitting ASCII characters via an RS-232 port to control product selection on Audio Authority AccessEZ™ Demonstration Networks.

1. Connect the 4 pin header at position P1 on the 970 to the system bus at any unused connector. The system bus wiring is color coded as yellow, red, blue, black.

2. Connect position J1 on the 970 to the host computer using the supplied DB25 to DB9 serial interface cable.

Operating Instructions

Communication parameters for the host port are 9600 baud, no parity, 8 bits and 1 stop bit. Operation may be verified using a terminal program on the host computer.

Command Listing:

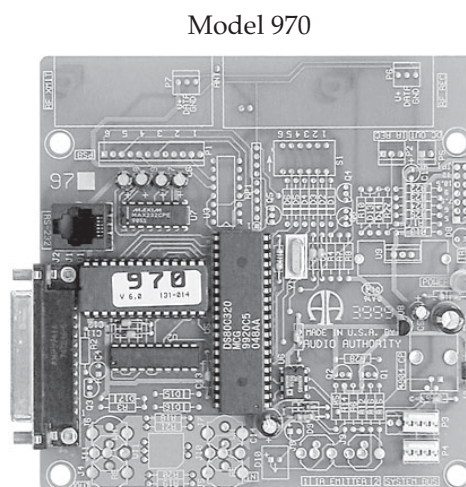
+Sgg:pp	Connect Speaker group 'gg' product 'pp'
+Egg:pp	Connect Electronic group 'gg' product 'pp'
-Sgg:pp	Disconnect Speaker group 'gg' product 'pp'
-Egg:pp	Disconnect Electronic group 'gg' product 'pp'
DISC Sgg	Disconnect Speaker group 'gg'
DISC Egg	Disconnect Electronic group 'gg'
MUTE	Begin muted multi product switch
END MUTE	End muted multi product switch
SLIMIT n	Set Speaker Limit to n (1..4)
DISCALL	Disconnect everything
DISABLE ALL	Disable PSBs
ENABLE ALL	Enable PSBs
STATUS	Request system info and current state
VOL nnn	Set 988 volume to level 'n' [0...127]
VDN	Decrease volume level by 4 steps
VUP	Increase volume level by 4 steps
SLEEP	Place system in power down mode
WAKE	Exit power down mode
49ALLOFF	Turn all leds OFF on 4904 control panel
49ALLON	Turn all leds ON on 4904 control panel
49LEDOF nnn	Turn led nnn (001..120) on 4904 panel OFF
49LEDON nnn	Turn led nnn (001..120) on 4904 panel ON
49LEDF1 nnn	Make led nnn (001..120) flash at rate 1 (slowest rate)
49LEDF2 nnn	Make led nnn (001..120) flash at rate 2
49LEDF3 nnn	Make led nnn (001..120) flash at rate 3
49LEDF4 nnn	Make led nnn (001..120) flash at rate 4 (fastest rate)
RESET	Reset 970 (Note: This disconnects everything)
HELP	Display this text

RS-232 Port Pin-outs

970 DB-25		PC DB9
2	=	3
3	=	2
4	=	7
5	=	8
6	=	6
7	=	5
20	=	4

970 DB-25		PC DB25
2	=	2
3	=	3
4	=	4
5	=	5
6	=	6
7	=	7
20	=	20

DB-25 Connector
(RS-232 Port)



The following text captured from a 970-4 illustrates its operation. A line by line commentary has been added on the right.

<power applied unit boots>		
970 Serial Interface unit		Prints ID message on boot and begins polling
Polling System Please Standby...		the attached system...
Product Groups = 8		After several seconds shows # prod. groups.
E00:00-E00:07		Prints table showing valid ranges for products in each group.
E01:00-E01:03		Groups addresses begin with either "E" or "S" to indicate
E02:00-E02:03		whether the group is "Electronic" modules (910, 922, 940, 942,
S02:00-S02:15		947, 955, 958) or "Speaker" modules (932, 933, 934, 935).
E03:00-E03:03		Two digits follow that correspond to the group address set by the
S03:00-S03:07		rotary switch on that group's modules. After the colon two
E04:00-E04:03		additional digits indicate the product number within that group.
S04:00-S04:07		
		The first line "E00:00-E00:07" indicates that electronic group 0 is
		present and contains 8 products with addresses ranging
		from E00:00 up to E00:07.
>+E00:00		This command was entered from the serial port and echoed by
		the unit. The "+" preceding the address requests that the
		product at E00:00 be selected. The command was followed by a
		carriage return.
>		
E00:00+		This message was received from the system confirming the
		request just made. Messages received ending with a plus or
		minus sign are status messages which indicate a product has
		been selected or deselected. These messages may result from
		a command sent by the 970, a PSB press, or a control panel.
>-E00:00		This command with the "-" preceding an address deselects the
>		product E00:00. This is confirmation of the command issued;
E00:00-		notice the "-" appears on the right side.
		Electronic groups may have only 1 product selected at a time
		as the following example shows:
>+E00:00		Turn on E00:00.
>		
E00:00+		Confirmed.
>+E00:01		Turn on E00:01 as well.
>		
E00:00-		E00:00 disengages prior to...
E00:01+		E00:01 engaging.
		Speaker groups may have up to 4 products simultaneously
		connected. If a fifth product is added the "Oldest" product must
		disconnect. This is illustrated by the following example.
>+S02:00		Add S02:00
>		
S02:00+		Confirmed. S02:00 on
>+S02:01		Add S02:01
>		
S02:01+		Confirmed. S02:00,S02:01 on
>+S02:02		Add S02:02
>		
S02:02+		Confirmed. S02:00,S02:01,S02:02 on
>+S02:03		Add S02:03
>		

S02:03+	Confirmed. S02:00,S02:01,S02:02,S02:03 on
>+S02:04	Add S04:00, a fifth product
>	
S02:00-	S02:00 disengages to make room prior to
S02:04+	S02:04 enagaging
>DISCALL	The 'DISCALL' command disconnects all products
>	
S02:04-	S02:04 disengages
S02:03-	S02:03 disengages
S02:02-	S02:02 disengages
S02:01-	S02:01 disengages
E00:01-	E00:01 disengages
>DISABLE ALL	DISABLE ALL locks out all product select buttons. It also will prevent the 970 from accessing products.
>ENABLE ALL	ENABLE ALL turns all of the product select buttons back on.
>	
	The following messages were generated by the user pressing buttons on the display.
>	
S03:00+	Speaker group 3 prod 0 selected by button; same status message as follows command but no command was sent.
>	
S03:00-	Speaker group S03:01 was pressed by user causing S03:00 to disconnect and S03:01 to connect. Speaker modules normally behave like electronic modules to the user by only allowing 1 product at time to be selected. The user can select multiple products by pressing and holding a button longer than 1/2 second.
S03:01+	
>	S03:02 pressed briefly, disconnecting the currently selected product before it is added.
S03:01-	
S03:02+	
S05:01+	Speaker Group 5 product 1 selected via push button attached to module.
>DISC S05	DISC disconnects all devices in speaker group 5.
>	
S05:01-	
>	
E02:00+	Electronic group 2 product 0 selected via push button attached to module.
>DISC E02	DISC disconnects all devices in electronic group 2.
>	
E02:00-	
>MUTE	Mute is used for selecting multiple products inside of one audio mute/unmute bracket. Prompt changes to '=' as a reminder that mute is on.
=+S05:00	Select speaker group 5 product 0,
=	
S05:00+	
=+E02:01	and electronic group 2 product 1.
=	
E02:01+	

=END MUTE

>STATUS

Valid groups and product numbers

E00:00-03

E02:00-03

E03:00-03

S03:00-07

E04:00-03

S04:00-07

E05:00-03

S05:00-07

Currently selected units

E02:01

S05:00

KEYUP xxx Key press

KEYDN xxx Key release

49ALLOFF

49ALLON

49LEDOF nnn

49LEDON nnn

49LEDF1 nnn

49LEDF2 nnn

49LEDF3 nnn

49LEDF4 nnn

>RESET

970 Serial Interface unit

Polling System Please Standby...

Product Groups = 8

E00:00-E00:03

E02:00-E02:03

E03:00-E03:03

S03:00-S03:07

E04:00-E04:03

S04:00-S04:07

E05:00-E05:03

S05:00-S05:07

| Then unmute to turn audio back on.

| STATUS causes the 970 to report the
| current system geometry and state.

| This is useful if your program has been off doing something else
| and might have missed messages.

| Use STATUS to get your image of what is on or off, synchronized
| with the actual state.

| New status messages for 4908 switch reporting.

| Note: xxx is a 3 digit number in range 001..120.

| New commands for 4908 lamp control:

| Turn OFF all leds on 4904 control panel.

| Turn ONall leds on 4904 control panel.

| Turn ON led nnn (001..120) on 4904 panel .

| Turn OFF led nnn (001..120) on 4904 panel.

| Make led nnn (001..120) flash at rate 1 (slowest rate).

| Make led nnn (001..120) flash at rate 2.

| Make led nnn (001..120) flash at rate 3.

| Make led nnn (001..120) flash at rate 4 (fastest rate).

| RESET simply resets the 970 and switching system as if power
| has been cycled.



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