

AMC XT

STEREO TUNER

APPENDIX I

RS232 Manual

APPENDIX I – RS232 MANUAL

HARDWARE SPECIFICATION

- RS232 asynchronous serial communication
- 38400 bps, 8 bits, 1 stop bit, no parity
- no flow control

SOFTWARE SPECIFICATION

Command Format:

Full command format is based on human readable ASCII characters. All codes are separated with field separators and terminated by line terminator.

read / write	field separator	zone	field separator	command	field separator	parameter 1	field separator	parameter 2	EOL
--------------	-----------------	------	-----------------	---------	-----------------	-------------	-----------------	-------------	-----

field	purpose	possible values
read / write	indicate this command is for read or write	0 for READ 1 for WRITE
zone	target zone for the command	numbers from 1 to N
command	a command identification	numbers from 1 to N
parameter 1	an optional parameter for the command	none, or numbers from -N to N
parameter 2	another optional parameter for the command	none, or numbers from -N to N
field separator	separator for fields in the command line	one or more spaces
EOL	terminator for the command line	CR, LF, CR/LF, or LF/CR

COMMAND REFERENCE

NOTES: * = any valid zone number

Power On/Off

read/write	zone	command	parameter 1	function
R	*	1		Power Status
W	*	1	0 1	Power Off Power On
W	*	1	10	Power Toggle

Turn Power On:

W 1 1 1 <CR>

Turn Power Off:

W 1 1 0 <CR>

Read Power Status:

R 1 1 <CR>

RETURN: 0 or 1

For power off status, it will return the following:

0 <CR>

Power Toggle:

W 1 1 10<CR>

Preset

read/write	zone	command	parameter 1	parameter 2	function
R	*	3	1		Read current preset number
W	*	3	1	N	Go to preset N
W	*	3	2	N	Memorize current channel N
W	*	3	3		Next Preset
W	*	3	4		Previous Preset

Read Current Preset Number:

W 1 3 1 6<CR>

R 1 3 1<CR>

RETURN: current preset number (1..10)

For preset 10, it will return the following:
10<CR>

Memorize Current Channel into Certain Preset:

Memorize current channel into preset number 6:

W 1 3 2 6<CR>

Next Preset:

W 1 3 3<CR>

Change Current Preset:

Command string to change current preset to preset number 6:

Previous Preset:

W 1 3 4<CR>

Tuner Frequency

read/write	zone	command	parameter 1	parameter 2	function
R/W	*	6	87 ~ 108 (MHz) 5 ~ 16 (hundreds of kHz)	00 ~ 95 (tenths of kHz) 00 ~ 99 (kHz)	FM Direct tuning AM Direct tuning
W	*	7	1 2 3 4		Scan up automatically Scan down automatically Step up manually Step up manually

Read current frequency:

R 1 6<CR>

RETURN: current frequency
For FM 102.7MHz, it will return the following:
102<CR>
70<CR>

For AM 1300 kHz, it will return the following:
13<CR>
00<CR>

Change frequency directly:

Tune to FM 102.7MHz:

W 1 6 102 70<CR>

Tune to AM 1300 kHz:

W 1 6 13 00<CR>

Scan up/down automatically:

Scan up:

W 1 7 1<CR>

Scan down:

W 1 7 2<CR>

Step up/down manually:

Step up:

W 1 7 3<CR>

Step down:

W 1 7 4<CR>

Band (FM/AM)

read/write	zone	command	parameter 1	function
R/W	*	8	1 2	FM band AM band
W	*	8	10	FM / AM toggle

Read current band (FM/AM):

R 1 8<CR>

RETURN: 1 for FM or 2 for AM
For AM, it will return the following:
2<CR>

W 1 8 2<CR>

Toggle band (FM/AM):

If current band is FM, by sending the following command will change current band to AM:

Change band (FM/AM):

Change band to AM:

W 1 8 10<CR>

Mono Enforcement / Stereo Auto Detect Mode

read/write	zone	command	parameter 1	function
R/W	*	9	1 2	Stereo auto detect Mono enforcement
W	*	9	10	Stereo auto detect / Mono enforcement toggle
R	*	10	1 2	Stereo Mono

Read current stereo auto / mono enforcement status:

R 1 9<CR>

RETURN: 1 for Stereo auto detect mode or 2 for Mono enforcement mode
For Mono enforcement mode, it will return the following:
2<CR>
For Stereo auto detect mode, it will return the following:
1<CR>

If current mode is Stereo auto detect mode, by sending the following command will change to Mono enforcement mode:

W 1 9 10<CR>

Read detected Mono/Stereo:

If the tuner is in Stereo auto detect mode, the tuner will determine if the current channel is stereo or mono by using its detection circuitry. The "detected" Mono/Stereo status can be read-back with the following command:

R 1 10<CR>

RETURN: 1 for Stereo or 2 for Mono
If Mono is detected, it will return the following:
2<CR>

Change stereo / mono enforcement mode:

Change to Mono enforcement mode:
W 1 9 2<CR>

Toggle between stereo auto detect / mono enforcement modes:

System Commands

read/write	zone	command	parameter 1	parameter 2	function
W	*	20	1		Reset unit
			2		Restore all "Setup" to factory default
			3		Restore "Presets" to factory default
			4		Enter firmware upgrade mode
			5		Enter test mode
R	*	20	255	1	Display Line 1
				2	Display Line 2

Reset unit:

Reset and reboot the system by issuing the following command:
W 1 20 1<CR>

entered, the firmware upgrade software needs to be executed from a PC or supplied upgrade system in order to start the upgrade process.

Restore to factory default:

To restore all "Setup" values to factory default:
W 1 20 2<CR>
To restore "Preset" values to factory default:
W 1 20 3<CR>

Enter test mode:

To enter test mode:
W 1 20 4<CR>

Enter firmware upgrade mode:

To enter firmware upgrade mode:
W 1 20 3<CR>
After software upgrade mode is

Read front panel dot-matrix display:

To read back display:
R 1 20 255 1<CR>
It will return two lines similar to the following:
Z1 FM 107.9MHz<CR>
St | <CR>

Region

read/write	zone	command	parameter 1	parameter 2	function	
R/W	*	103	0	0	Software region disable	
				1	Software region enable	
R/W	*	103	1	1	Region Preset: US/Canada	
				2	Region Preset: Europe	
W	*	103	2		Next software region preset	
W	*	103	3		Previous software region preset	
R/W	*	103	10	1	FM Range: 87.5 ~ 107.9 MHz Step: 200 kHz	
				2	FM Range: 87.5 ~ 108.0 MHz Step: 50 kHz	
				11	1	AM Range: 520 ~ 1710 kHz Step: 10 kHz
				2	AM Range: 522 ~ 1620 kHz Step: 9 kHz	
				12	1	FM band IF: +10.7MHz
				2	FM band IF: -10.7MHz	

Current software region enable / disable status:

To read current status of software region:
R 1 103 0<CR>
If software region is enabled, it will

return the following:

1<CR>

Software region enable / disable:

Enable software region:

W 1 103 0 1<CR>

Disable software region:

W 1 103 0 0<CR>

1<CR>

If the current auto preset region is Europe, it will return the following:

2<CR>

Current auto preset region selection status:

If software region is enabled, the region setting can be set using preset region values.

To read current status of auto preset region:

R 1 103 1<CR>

If the current auto preset region is US/Canada, it will return the following:

Auto preset region selection:

Change current region to US/Canada:

W 1 103 1 1<CR>

Change current region to Europe:

W 1 103 1 2<CR>

Next region preset selection:

W 1 103 2<CR>

Previous region preset selection:

W 1 103 3<CR>

Zone

read/write	zone	command	parameter 1	parameter 2	function
R/W	*	104	0	0	Software zone disable
				1	Software zone enable
R/W	*	104	1	N	Current Zone N
W	*	104	2		Next Zone
W	*	104	3		Previous Zone

Current software zone enable / disable status:

To read current status of software zone:

R 1 104 0<CR>

If software zone is enabled, it will return the following:

1<CR>

Current zone selection status:

To read current zone status:

R 1 104 1<CR>

If the current zone is 6, it will return the following:

6<CR>

Software zone enable / disable:

Enable software zone:

W 1 104 0 1<CR>

Disable software zone:

W 1 104 0 0<CR>

Zone selection:

Change current zone to 6:

W 1 104 1 6<CR>

Next zone selection:

W 1 104 2<CR>

Previous zone selection:

W 1 104 3<CR>

RDS

read/write	zone	command	parameter 1	parameter 2	function
R/W	*	110	1	0	RDS mode disable
				1	RDS mode enable
W	*	110	1	10	RDS mode toggle (enable / disable)
R/W	*	110	2	1	RDS PROGRAM TYPE:
				2	RDS time
				3	RDS text
				3	RDS program
				4	RDS type

read/write	zone	command	parameter 1	parameter 2	function
W	*	110	3		Next Program Type
W	*	110	4		Previous Program Type
R	*	110	5	1	Read RDS Program String: RDS time
				2	RDS text
				3	RDS program
				4	RDS type

Current RDS mode status (enabled/disabled):

2<CR>

To read current status of RDS mode:

R 1 110 1<CR>

If RDS mode is enabled, it will return the following:

1<CR>

RDS mode enable / disable selection:

Enable RDS mode:

W 1 110 1 1<CR>

Disable RDS mode:

W 1 110 1 0<CR>

Toggle RDS mode:

W 1 110 1 10<CR>

Current RDS program type:

To read current RDS program type:

R 1 110 2<CR>

If the current RDS program type is "RDS text," it will return the following:

RDS program type selection:

Change current RDS program type to "RDS program":

W 1 110 2 3<CR>

Next RDS program type selection:

W 1 110 3<CR>

Previous RDS program type selection:

W 1 110 4<CR>

Read RDS program string:

To read current RDS program string for "RDS type":

R 1 110 5 4<CR>

If the current RDS program string for "RDS type" is "News," it will return the following:

News<CR>

