

Antex XM-3000 TriplePlay Multizone Satellite Receiver
RS232 Control Port Command Set
10/25/05

This document describes the commands needed to access various functions of the Antex XM-3000 TriplePlay XM three zone satellite receiver via its rear RS232 serial port. The communications channel is RS-232 format, (transmit, receive and ground) 9600 baud, No parity, 8 data bits, 1 stop bit. No hand shaking. Receiving equipment must be able to accept a string of 60 characters without breaks.

Typical cable construction

HOST CONTROLLER		XM-3000 Male DB9
PIN#		PIN#
2 RXD	-	2 TXD
3 TXD	-	3 RXD
5 GND	-	5 GND

All commands supported via the RS232 port are either global or explicitly specify the zone of the receiver to be controlled. The format of these commands is, for example, *CUz, for “Channel Up” where “z” is the zone the controller is incrementing. Note that the front IR receiver and hardwired IR commands also support the concept of “current zone” commands, described in a separate document.

Each command string sent to the receiver must start with an {*} (hex 2A) and be terminated with a carriage return {cr} (hex 0D). The sender may also optionally send a line feed {lf} (hex 0A) after the carriage return. A line feed is not required, and if sent will be ignored – parsing of command strings sent to the receiver terminates when a carriage return is received.

A circular buffer 256 bytes deep is used to buffer the commands received until they can be processed. A terminating {cr} must end each command, even if multiple commands are sent back to back. For example, to do a Channel Up followed by Select, send CU1{cr}SL1{cr}. Any spaces (20 hex) or nulls (00 hex) sent will simply not be stored in the buffer and will have no adverse effect. The buffer is intended to allow back to back commands, or inputs from users in different zones at the same time. It is still possible to overflow the buffer if, for example, a user pounds on the Channel Up button 100 times, not waiting for the channel up action to occur after each button push.

Each response string sent will start with an {*} and terminate with a {cr}{lf}. Commas {,} are used to delimit separate fields in long strings. In addition the following nomenclature is used.

z = (zone number) valid values are 1,2,3

ccc = (channel number) valid values are 001 – 223 (must have leading zeros)

pppp = (password) valid values are 0000 – 9999 (must have leading zeros)

Note that in most cases of a syntax error in the command sent, there will be no response.

Global Command Group

***MU1 Mute ON command**
Mutes Audio Outputs on all zones.

Return: command echo

***MU0 Mute OFF command**
Enables Audio Outputs on all zones.

Return: command echo

***PR Power Command**

***PR0{cr}**
Turns the unit off, stopping music in all 3 zones

***PR1{cr}**
Turns the unit on, providing music in authorized zones.

***PR{cr}**
Queries the current powered state of the receiver

Returned: *PR0{cr}{lf} if unit is off
*PR1{cr}{lf} if unit is on

***PW Password command**
This command will change the current password.

If *PW,pppp,wwww,wwww{cr} is sent, where pppp is the old 4 digit password and wwwwww is the new 4 digit password, the password will be change to wwwwww. The new password is sent twice for verification.

Returned *PW1{cr} {lf} New password accepted
 *PW0{cr} {lf} failed (old password is incorrect)

***SV**

Signal Value

This command will return *SV,n{cr} {lf} where n is one a digit signal strength received by the unit, in the range of 0 to 3.

0 : No Signal
1 : Poor Signal
2 : Good Signal, and
3 : Excellent Signal.

***TN1**

Internal TONE Generator ON command

For test only.
Return: command echo.

***TN0**

Internal TONE Generator OFF command

For test only.
Return: command echo.

***TM1**

Test Mode ON command

For Front Panel Push-Button test only.
Return: command echo.

***TM0**

Test Mode OFF command

For Front Panel Push-Button test only.
Return: command echo.

***UN1**

Unsolicited Data ON command

Enables the return of unsolicited data.

***UN0**

Unsolicited Data OFF command

Disables the return of unsolicited data.

***UNz Unsolicited Data**

This data will be returned whenever a song changes or a channel is changed only after the “Unsolicited Data ON” command (*UN1) is executed.

Return: *UNz,ccc,category,channel name,artist name,song title{cr} {lf}.

Channel name, artist name, and song title fields will contain error messages when an error occurs.

Zone Specific Commands

***CHz Direct Tune Channel Number - Query or Set**

This command sets or queries the current channel number for each music zone. The number following the *CH is the zone (ie CH1 queries or sets the channel on zone 1). *CHz sent without a parameter will query the current channel number for the requested zone. Valid parameters for z are 1,2,3. valid parameters for ccc are 001 – 247. (Numbers up to 255 may be valid in the future as XM adds channels.)

*CHz{cr}

Queries the current channel number on zone z

Returned: *CHz,ccc,category,channel name,artist name,song title{cr} {lf}

Example: *CH1,007,Pop,Totally 70's,Earth, Wind and Fire,Can't Hide Love{cr} {lf}

If *CHz,ccc{cr} {lf} is sent, the receiver will change to that channel for the requested zone and return the above string syntax. If the channel number sent (ccc) is not valid, the response will be *CHz,0{cr} {lf}.

Note: You can also use Fixed Field Lengths as *CHz, 3, 8, 16, 16, 16. This will help with any names which contain a , within the name.

***CDz Channel Down (decrement)**

This command decrements the channel for the zone specified. For instance, *CD1 will decrement the audio channel for Zone 1. If the z specifier is not sent it will decrement the currently active zone. In this way, channels may be changed by a remote controller that does not keep track of the current channel the receiver is set to. Note that this command

does not tune to the decremented channel it only returns the following information.

Returned: *CDz,ccc,catagory,channel name,artist name,song title{cr} {lf}

Example: *CD1,007,Pop,Totally 70's,Earth, Wind and Fire,Can't Hide Love{cr} {lf}

If in Preset Mode: *PSz,n,ccc,catagory,channel name,artist name,song title{cr} {lf}

The above string will be returned after the selected channel remains stable for one second. Nothing will be returned with rapid decrements.

Use the *SLz command to tune to the channel. The *SLz command must be received within 4 seconds of the last *CDz command to force a direct tune.

***CUz**

Channel Up (increment)

This command increments the channel for the zone specified. For instance, *CU1 will increment the audio channel for Zone 1. If the z specifier is not sent it will increment the currently active zone. In this way, channels may be changed by a remote controller that does not keep track of the current channel the receiver is set to. Note that this command does not tune to the decremented channel it only returns the following information.

Returned: *CUz,ccc,catagory,channel name,artist name,song title{cr}

Example: *CU1,007,Pop,Totally 70's,Earth, Wind and Fire,Can't Hide Love{cr} {lf}

If in Preset Mode: *PSz,n,ccc,catagory,channel name,artist name,song title{cr} {lf}

The above string will be returned after the selected channel remains stable for one second. Nothing will be returned with rapid decrements.

Use the *SLz command to tune to the channel. The *SLz command must be received within 4 seconds of the last *CUz command to force a direct tune.

***CGDz Category Down (decrement)**

This command decrements the category for the zone specified. For instance, CGD1 will decrement the audio category for Zone 1. If the z specifier is not sent it will decrement the currently active zone. In this way, category may be changed by a remote controller that does not keep track of the current category the receiver is set to. Note that the current category type can be determined using the QZz command.

Returned: *CGDz,ccc,catagory,channel name,artist name,song title{cr} {lf}

Example: *CGD1,007,Pop,Totally 70's,Earth, Wind and Fire,Can't Hide Love{cr} {lf}

The above string will be returned after the selected catagory remains stable for one second. Nothing will be returned with rapid decrements. The Channel number returned is the first channel in the category found by decrementing.

***CGUz Category Up (increment)**

This command increments the category for the zone specified. For instance, CGU1 will increment the audio category for Zone 1. If the z specifier is not sent it will increment the currently active zone. In this way, category may be changed by a remote controller that does not keep track of the current category the receiver is set to. Note that the current category type can be determined using the QZz command.

If the z specifier is not sent it will increment the currently active zone.

Returned: *CGUz,ccc,catagory,channel name,artist name,song title{cr} {lf}

Example: *CGU1,007,Pop,Totally 70's,Earth, Wind and Fire,Can't Hide Love{cr} {lf}

The above string will be returned after the selected catagory remains stable for one second. Nothing will be returned with rapid increments. The Channel number returned is the first channel in the category found by incrementing.

***PPz Preset program command**

This command stores a preset for the selected zone.

If *PPz,n{cr} is sent, where n is the preset number 0 – 9, the channel currently tuned to in the selected zone will be stored as Preset number n .

Returns *PPz,1{cr}{lf} if successful.

***PSz Preset select command**

This command selects a preset for the selected zone and tunes to the channel associated with that preset.

If *PSz,n{cr} is sent, where n is the preset number 0 – 9, the channel in the selected zone will be changed to the stored channel in preset n.

Returned: *PSz,n,ccc,catagory,channel name,artist name,song title{cr}{lf}

Returns *PSz,0{cr}{lf} if unable to tune to the channel.

***QZz Query Zone Information**

This command dumps all pertinent information about the specified zone including Channel Name, Category Name, Artist Name, Song or Program Title. This information may be used for display on a remote control panel.

QZz,ccc,nnn{cr} where z is zone number, nnn is number of ascending channels to get data from, starting with ccc channel. nnn must less than or equal to 20. If a number greater than 20 is entered, it will be truncated to 20.

Returned: QZz,ccc,(channel name),(category name),(artist name),(song title),ccc+1,(channel name),(cataegory name),(artist name),(song title),ccc+2,.....{cr}{lf}

***SKz Skip Channel**

This command removes the specified channel number from the universe of channels allowed when using Up/Down commands. Note that unlike parental blocked channels skipped channels may still be tuned to directly by their channel number. The number following the SK is the zone (ie SK1 skips the channel on zone 1). Valid parameters for z are 1,2,3.

If SKz,ccc{cr} is sent, the receiver will skip channel ccc for the requested zone z.

Returned *SKz,1{cr} {lf} if skip is successful
 *SKz,0{cr} {lf} channel number is invalid (> 255)

***USz Unskip Channel**

This command adds the specified channel number to the universe of channels allowed when using Up/Down commands. Parental blocked channels cannot be added. The number following the *US is the zone (ie *US1 unskips the specified channel on zone 1). Valid parameters for z are 1,2,3.

If *USz,ccc{cr} is sent, the receiver will unskip channel ccc for the requested zone x.

Returned *USz,1{cr} {lf} if unskip is successful
 *USz,0{cr} {lf} if channel number is invalid (>255)

***LKz Lock Channel**

This command locks out the specified channel number from the universe of channels allowed when using Up/Down commands or direct tune commands. This command requires a 4 digit password that is previously programmed via the front panel or the *PW command. The number following the *LK is the zone (ie *LK1 locks the channel on zone 1). Valid parameters for z are 1,2,3. pppp is the 4 digit password.

If *LKz,ccc,pppp{cr} is sent, the receiver will lock channel ccc for the requested zone z if the password pppp is correct.

Returned *LKz,1{cr} {lf} if lock is successful
 *LKz,0{cr} {lf} if password is incorrect

***ULz Unlock Channel**

This command unlocks the specified channel number from the universe of channels allowed when using Up/Down commands or direct tune commands. This command requires a 4 digit password that is previously programmed via the front panel or the *PW command. The number following the *UL is the zone (ie *UL1 unlocks the channel on zone 1). Valid parameters for z are 1,2,3. pppp is the 4 digit password.

If *ULz,ccc,pppp{cr} is sent, the receiver will unlock channel ccc for the requested zone z if the password pppp is correct.

Returned *ULz,1{cr} {lf} if unlock is successful
 *ULz,0{cr} {lf} if password is incorrect

***SLz Select command**

This command is the equivalent of the select button on the front panel. It can be sent after a *CD, *CU, *CGD and *CGU command to cause the receiver to direct tune to the last channel sent by these commands. This command must be sent within 4 seconds of the previous listed commands or it will be ignored.

***XIDz Serial Identification Number Query**

This command is used to query the 8 digit identification number of each music zone. The number following the ID is the zone (ie *XID1 queries zone 1).

Returned: *XIDz,nnnnnnnn{cr } {lf}

***Zz Zone select command**

This command changes the currently active zone.

If *Z1{cr} {lf} is sent zone 1 will become the currently active zone.

Nothing is returned.

***MZ1 Zone 1 Mute ON command**

Mutes Audio Output on zone 1.
Return: command echo.

***MZ2 Zone 2 Mute ON command**

Mutes Audio Output on zone 2.
Return: command echo.

***MZ3 Zone 3 Mute ON command**

Mutes Audio Output on zone 3.
Return: command echo.

***UM1 Zone 1 UNMute command**

Enables Audio Output on zone 1.
Return: command echo.

***UM2 Zone 2 UNMute command**
Enables Audio Output on zone 2.
Return: command echo.

***UM3 Zone 3 UNMute command**
Enables Audio Output on zone 3.
Return: command echo.

Mode Commands

***DIRz Sets Zone z to DIRECT Mode**
Return: command echo.

***PREz Sets Zone z to PRESET Mode**
Return: command echo.

***CATz Sets Zone z to CATEGORY Mode**
Return: command echo.

***UMDz Unsolicited notification of DIRECT Mode**
This message sent if unsolicited messages turned on (*UN1) to indicate Zone z has been placed in DIRECT Mode.

***UMPz Unsolicited notification of PRESET Mode**
This message sent if unsolicited messages turned on (*UN1) to indicate Zone z has been placed in PRESET Mode.

***UMCz Unsolicited notification of CATEGORY Mode**
This message sent if unsolicited messages turned on (*UN1) to indicate Zone z has been placed in CATEGORY Mode.

Note: it is recommended that remote panels always set the mode before issuing any commands that have different functionality in different modes such as channel up or down.