# Azur 650T Serial Control Protocol V1.0

## 1.1 RS232 Protocol

The protocol is accessed via the rear panel RS232C port.

| | Header | Command Group | | Command Number | | Command Data | Footer |
|---|---|---|---|---|---|---|---|
| | # | 1 to 6 | , | 01 to 18 | , | XXXX | CR |
| byte num: | 1 | 1 | 1 | 2 | 1 | XX | 1 |

Notes:
1) All data consists of ASCII bytes.
2) Settings for RS232 comm port are 9600,N,8,1 with no handshaking.
3) CR is carriage return, ASCII value 13 decimal.
4) Command Data consists of 32 characters maximum

## 1.2 Command Groups

Commands are split into the following groups:

| Command Group | Description |
|---|---|
| 1 | General Commands |
| 2 | FM/AM Tuner Commands |
| 3 | DAB Commands |
| 4 | Replies from General Commands |
| 5 | Replies from FM/AM Tuner Commands |
| 6 | Replies from DAB Commands |
| 7 | Error Messages |
| 8 | Special Commands (not published) |
| 9 | Replies from Special Commands (not published) |

## 1.3 Commands and Messages

### 1.3.1 Group 1 – General Commands

| Command Number | Command Description | Command Data | Example |
|---|---|---|---|
| 01 | Power State | 0 - Power Off, 1 - Power On | #1,01,0\r - Put 650T in standby |
| 02 | Frequency/Channel Up | No Data | #1,02,\r - Frequency/Channel up |
| 03 | Frequency/Channel down | No Data | #1,03,\r - Frequency/Channel down |
| 04 | Source Select | 0 - FM, 1 = AM, 2 = DAB/Sirius | #1,04,1\r - Source set to AM |
| 05 | Store Station | 1 - preset 1, 2 - preset 2, ….. 20 - preset 20 | #1,05,12\r - Store current frequency/Ch in preset 12 |
| 06 | Get Preset | 1 - preset 1, 2 - preset 2, ….. 20 - preset 20 | #1,06,06\r - Set tuner to preset 6 |
| 07 | Set NCT | 0 - Off, 1 - Warm, 2 - Dynamic | #1,07,1\r - Set NCT to Warm |
| 08 | Set Backlight | 0 - Off, 1 - Dim, 2 - Bright | #1,08,1\r - Set LCD backlight to Dim |
| 09 | Get Main Software Version | No Data | #1,09,\r - Get software version |

### 1.3.2 Group 2 – FM/AM Tuner Commands

| Command Number | Command Description | Command Data | Example |
|---|---|---|---|
| 01 | Auto Tune | No Data | #2,01,\r - Auto Tune |
| 02 | Audio Mode | 0 - Mono, 1 - Stereo | #2,02,1\r - Set Tuner Audio mode to Stereo |
| 03 | Tuner Display mode (Info Btn) | No Data | #2,03,\r - Cycle Display Mode |
| 04 | Get Frequency | No Data | #2,04,\r |
| 05 | Get Station name | No Data | #2,05,\r |
| 06 | Get PTY | No Data | #2,06,\r |

### 1.3.3 Group 3 – DAB Commands

| Command Number | Command Description | Command Data | Example |
|---|---|---|---|
| 01 | Auto Scan (rescan all station) | No Data | #3,01,\r - Auto Scan |
| 02 | DAB Display mode (Info Btn) | No Data | #3,03,\r - Cycle Display Mode |
| 03 | Get Prog Type | No Data | #3,03,\r |
| 04 | Get Ensemble | No Data | #3,04,\r |
| 05 | Get Station Name | No Data | #3,05,\r |

### 1.3.4 Group 4 – Replies from General Commands

| Command Number | Command Description | Command Data | Example |
|---|---|---|---|
| 01 | Power State | 0 - Standby, 1 - On | #4,01,0\r - Put 650T in standby |
| 02 | Frequency/Channel Up | No Data | #4,02,\r - Frequency/Channel up |
| 03 | Frequency/Channel down | No Data | #4,03,\r - Frequency/Channel down |
| 04 | Source Select | 0 - FM, 1 = AM, 2 = DAB/Sirius | #4,04,0\r - Source set to AM |
| 05 | Store Station | 1 - preset 1, 2 - preset 2, ….. 20 - preset 20 | #4,05,12\r - Store current frequency/Ch in preset 12 |
| 06 | Get Preset | 1 - preset 1, 2 - preset 2, ….. 20 - preset 20 | #4,06,06\r - Set tuner to preset 6 |
| 07 | Set NCT | 0 - Off, 1 - Warm, 2 - Dynamic | #4,07,1\r - Set NCT to Warm |
| 08 | Set Backlight | 0 - Off, 1 - Dim, 2 - Bright | #4,08,1\r - Set LCD backlight to Dim |
| 09 | Get Main Software Version | X.X | #4,09,1.2\r - Software is version 1.2 |

### 1.3.5 Group 5 – Replies from FM/AM Tuner Commands

| Command Number | Command Description | Command Data | Example |
|---|---|---|---|
| 01 | Auto Tune | No Data | #5,01,\r - Auto Tune |
| 02 | Audio Mode | 0 - Mono, 1 - Stereo | #5,02,1\r - Set Tuner Audio mode to Stereo |
| 03 | Tuner Display mode (Info Btn) | No Data | #5,03,\r - Cycle Display Mode |
| 04 | Get Frequency | No Data | #5,04,\r |
| 05 | Get Station name | No Data | #5,05,\r |
| 06 | Get PTY | No Data | #5,06,\r |

### 1.3.6 Group 6 – Replies from DAB Commands

| Command Number | Command Description | Command Data | Example |
|---|---|---|---|
| 01 | Auto Scan (rescan all station) | No Data | #6,01,\r - Auto Scan |
| 02 | DAB Display mode (Info Btn) | No Data | #6,03,\r - Cycle Display Mode |
| 03 | Get Prog Type | xxxxxx | #6,03,xxxxxx\r |
| 04 | Get Ensemble | xxxxxx | #6,04,xxxxxx\r |
| 05 | Get Station Name | xxxxxx | #6,05,xxxxxx\r |

| Command Number | Command Description | Command Data | Example |
|---|---|---|---|
| 01 | Command Group Unknown | No Data | #7,01,\r - Command group error |
| 02 | Command Number in Group Unknown | No Data | #7,02,\r - Command number error |
| 03 | Invalid Command | No Data | #7, 04,\r - Invalid Command |
| 04 | Busy | No Data | #7,05,\r - System Busy |

### 1.3.8 Group 8 – Special Commands (not published)

| Command Number | Command Description | Command Data | Example |
|---|---|---|---|
| 01 | All LCD Segments On | No Data | #8,01,\r - All segments on |
| 02 | Factory Reset | No Data | #8,02,\r - Restore factory defaults |

### 1.3.9 Group 9 – Replies from Special Commands (not published)

| Command Number | Command Description | Command Data | Example |
|---|---|---|---|
| 01 | All LCD Segments On | No Data | #9,01,\r - All segments on |
| 02 | Factory Reset Complete | No Data | #9,02,\r - Factory defaults restored |