

AT779-UV Mic to Radio Serial Protocol

Mic interface uses an RJ45 Connector.

Keypad and PTT button presses are sent from the Mic to the Radio via serial communication using pins 1 and 3 of the RJ45 connector. Data is also sent from the Radio to the Mic and used to control the color of the LED in the Mic.

Mic Connector Pinout

Pin	Function	Direction
1	Tx Data	Mic to Radio
2	+5v	Radio to Mic
3	Rx Data	Radio to Mic
4	NC	
5	Mic Audio Gnd	-
6	Mic Audio	Mic to Radio
7	NC	
8	Gnd	-

Serial Format:

115200 Baud – 8 Data Bits, No Parity, 1 Stop Bit

Serial Commands

Pressing the various buttons on the mic results in the byte strings in the following table (shown here in Hex representation) to be sent to the radio.

Four different cases exist:

1. When the button is initially pressed
2. When the button is held pressed (long press)
For most buttons, the 'Hold' byte string is sent only once if the button remains pressed (i.e. for a 'long press'). The exceptions being the Up and Down buttons where the byte string is repeated as long as the button remains pressed. This allows for continuous up/down changing of channel or frequency.
3. When the button is released
4. PTT is a different case, where there is no 'Hold' byte string transmitted.

Byte Strings for each button on AT779-UV Mic

Key	Press Hex	Hold Hex	Hold Rpt	Release Hex
0	41 00 01 00 01 00 00 06	41 00 01 01 01 00 00 06	No	41 00 00 00 01 00 00 06
1	41 00 01 00 02 00 00 06	41 00 01 01 02 00 00 06	No	41 00 00 00 02 00 00 06
2	41 00 01 00 03 00 00 06	41 00 01 01 03 00 00 06	No	41 00 00 00 03 00 00 06
3	41 00 01 00 04 00 00 06	41 00 01 01 04 00 00 06	No	41 00 00 00 04 00 00 06
4	41 00 01 00 05 00 00 06	41 00 01 01 05 00 00 06	No	41 00 00 00 05 00 00 06
5	41 00 01 00 07 00 00 06	41 00 01 01 06 00 00 06	No	41 00 00 00 07 00 00 06
6	41 00 01 00 07 00 00 06	41 00 01 01 07 00 00 06	No	41 00 00 00 07 00 00 06
7	41 00 01 00 08 00 00 06	41 00 01 01 08 00 00 06	No	41 00 00 00 08 00 00 06
8	41 00 01 00 09 00 00 06	41 00 01 01 09 00 00 06	No	41 00 00 00 09 00 00 06
9	41 00 01 00 0a 00 00 06	41 00 01 01 0a 00 00 06	No	41 00 00 00 0a 00 00 06
A	41 00 01 00 1a 00 00 06	41 00 01 01 1a 00 00 06	No	41 00 00 00 1a 00 00 06
B	41 00 01 00 1b 00 00 06	41 00 01 01 1b 00 00 06	No	41 00 00 00 1b 00 00 06
C	41 00 01 00 1c 00 00 06	41 00 01 01 1c 00 00 06	No	41 00 00 00 1c 00 00 06
D	41 00 01 00 1d 00 00 06	41 00 01 01 1d 00 00 06	No	41 00 00 00 1d 00 00 06
Up	41 00 01 00 10 00 00 06	41 00 01 01 10 00 00 06	Yes	41 00 00 00 10 00 00 06
Down	41 00 01 00 11 00 00 06	41 00 01 01 11 00 00 06	Yes	41 00 00 00 11 00 00 06
PTT	41 01 00 00 00 00 00 06	N/A	N/A	41 00 00 00 00 00 00 06

Keepalive

The hex byte 06 (0x06) is sent by the Mic to the Radio as a 'keepalive' approx. every second and appears in the byte string for many of the commands. If the keepalive is not sent then Radio will only remain on Transmit for 3 secs.

Examples of byte strings sent when various buttons are pressed

Note: Line breaks are used here for readability and are not present in the data sent

"A" button pressed and immediately released (short press)

```
41 00 01 00 1a 00 00 06
41 00 00 00 1a 00 00 06
```

"A" button pressed and held for approx. 1 sec (long press)

```
41 00 01 00 1a 00 00 06
06
41 00 01 01 1a 00 00 06
06
41 00 00 01 1a 00 00 06
```

"A" button pressed and held for approx. 5 sec (longer press)

41 00 01 00 1a 00 00 06
06
41 00 01 01 1a 00 00 06
06
06
06
41 00 00 01 1a 00 00 06

“UP” button pressed and held for approx. 5 sec

41 00 01 00 10 00 00 06
06
41 00 01 01 10 00 00 06
41 00 01 01 10 00 00 06
41 00 01 01 10 00 00 06
41 00 01 01 10 00 00 06
41 00 01 01 10 00 00 06
41 00 01 01 10 00 00 06
41 00 01 01 10 00 00 06
41 00 01 01 10 00 00 06
41 00 01 01 10 00 00 06
41 00 01 01 10 00 00 06
41 00 01 01 10 00 00 06
41 00 01 01 10 00 00 06
41 00 00 01 10 00 00 06

PTT pressed and held for approx. 5 sec

41 01 00 00 00 00 00 06
06
06
06
06
06
41 00 00 00 00 00 00 06

Fourth byte appears to be set to 0x01 when PTT is active – this sets the LED in the Mic to Red

Radio returns:

[illegible]

Third byte appears to be set to 0x01 when squelch is open, this sets the LED in the mic to Red. Then 0x00 when it is closed which turns the LED off.

Additional Data

Unable to identify any additional data being sent from the Radio to the Mic.

There is no apparent change to the data sent by the Radio when changing from Memory to VFO, or to indicate when the frequency is changed or a different channel is selected.