Zum Rev101

Temporary Addendum December 31st 2016

The purpose of this page is assist users in getting the Rev101 Zum board on the air as soon as possible
Till the Rev101 document is complete.

The main differences between the Rev101 and the Rev 1.00 boards is the following

1. JP6 was a JST6 (JST S6B-PH-K-S(LF)(SN)) is now a JST8 (JST S8B-PH-K-S(LF)(SN)) connector this enables additional control signals for retro fitting of existing repeaters. The inner 6 pins are exactly the same as the REV1.00 board thus enabling the fitting of an existing JST6 wired plug into the Rev101 board.

See the following pin outs for reference
They are number exactly as per the photo on page 2 of the original document from Left to Right.

REV101		
Pin #	Pin Name	Pin Description
1	CTRL	Radio_CTRL
2	COS/STAT_1	COS Carrier on sense (squelch)
3	Rx Audio	Rx audio Receive audio from radio
4	GND	Ground
5	GND	Ground
6	Tx Audio	Tx audio Transmit audio to radio
7	PTT	PTT Push to talk (turn on transmitter)
8	STAT_2	Radio_Stat2

REV1.00		
Pin #	Pin Name	Pin Description
1	COS	Carrier on Sense (Squelch)
2	Rx Audio	Receive Audio From Radio
3	GND	Ground
4	GND	Ground
5	Tx Audio	Transmit Autio to Radio
6	PTT	Pust to Talk (Turn On Transmitter)

2. Changing of the Rx and Tx Pots to Multi turn these will need to be turned VERY slowly to get calibrated accurately.

3. Addition of TCXO on board. The correct Due firmware is required to enable the clock.

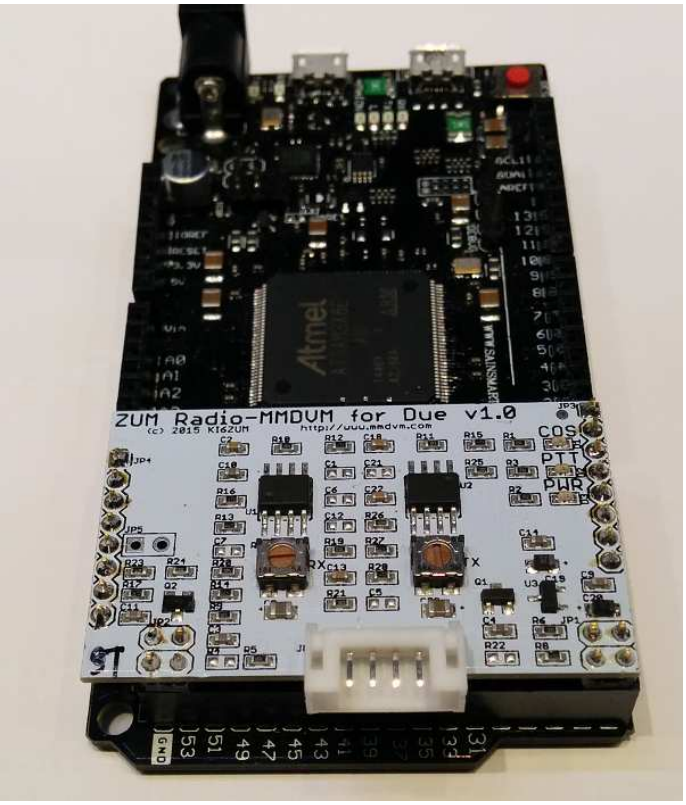
4. Addition of RSSI Connector (header will need to be soldered to the board)

5. Addition of I2C and Serial Interface for LCD control (headers will need to be soldered to the board if these are required)

6. Jumpers to remove Bypass large caps in the Rx and Tx stages if required for some radios these are J1 and J2

MMDVM board **Rev 0.01**

Board is interface between computer running software written by Jonathan Naylor and 9600 capable radios. The software supports DStar and DMR with Fusion, P25 and analog in the future.



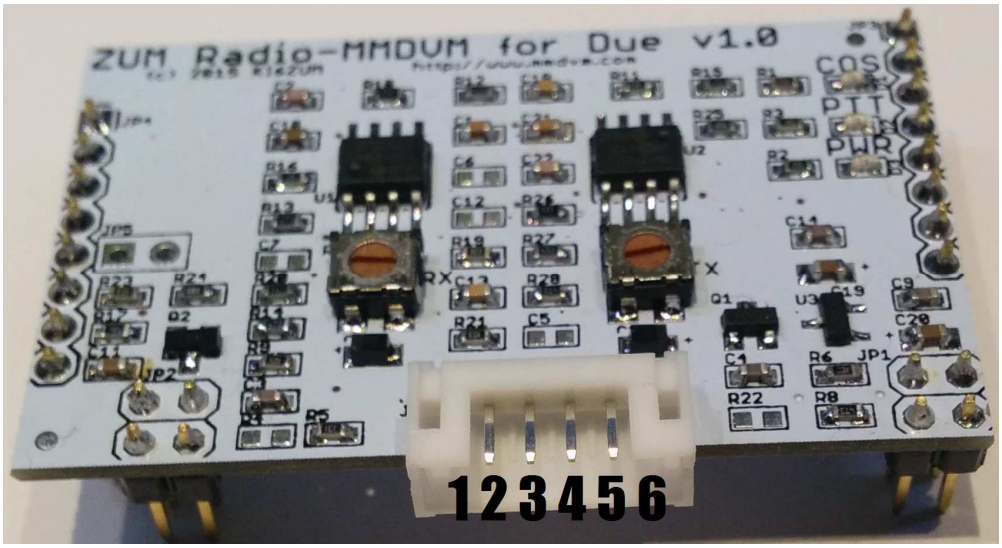
Radio connector

The connector is a JST S6B-PH-K-S(LF)(SN) (Digikey 455-1723-ND) male connector. The pin spacing is 1.0mm. The female connector is JST PHR-6 (Digikey 455-1162-ND) and the pins are JST SPH-002T-P0.5S (Digikey 455-1127-1-ND).

The pinout is:

Pin #	Pin name	Pin description
1	COS	Carrier on sense (squelch)
2	Rx audio	Receive audio from radio
3	GND	Ground
4	GND	Ground
5	Tx audio	Transmit audio to radio
6	PTT	Push to talk (turn on transmitter)

Here's a picture of the connector and the pin numbers:



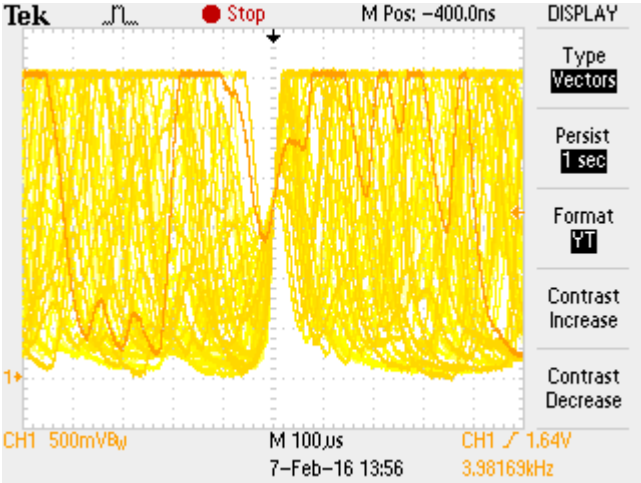
Programming the Due

Connect the USB able to the "Programming" connector which is the one closest to the DC barrel connector. The build instructions are contained in the MMDVM source code zip file available from the Files/Software section of the MMDVM Yahoo group.

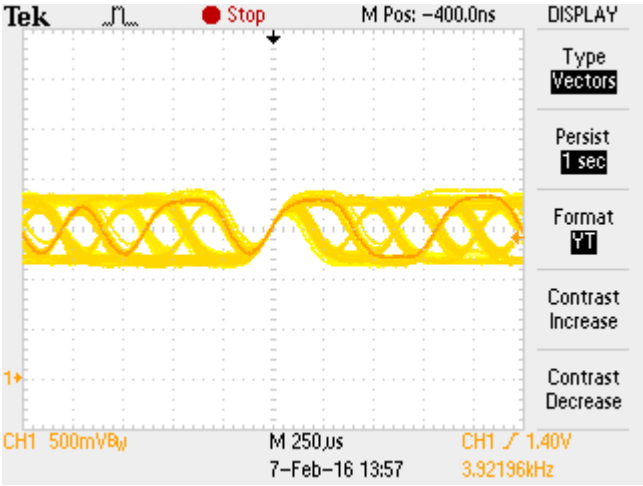
Setting signal levels

The receive audio levels are adjusted using the variable resistor marked RX on the PCB.

If you have an oscilloscope, adjust RX variable resistor so that the signal is as high as possible, but not so high that it clips. Here is a picture showing the input signal clipping.



Once the level has been adjusted, an incoming signal will look something like this:



The transmit audio levels are adjusted using the variable resistor marked TX on the PCB. Without a way to measure the deviation of the RF signal, the easiest way to set the correct level is to sweep the whole range of the resistor and settle on the point in the middle of the range where it works.