



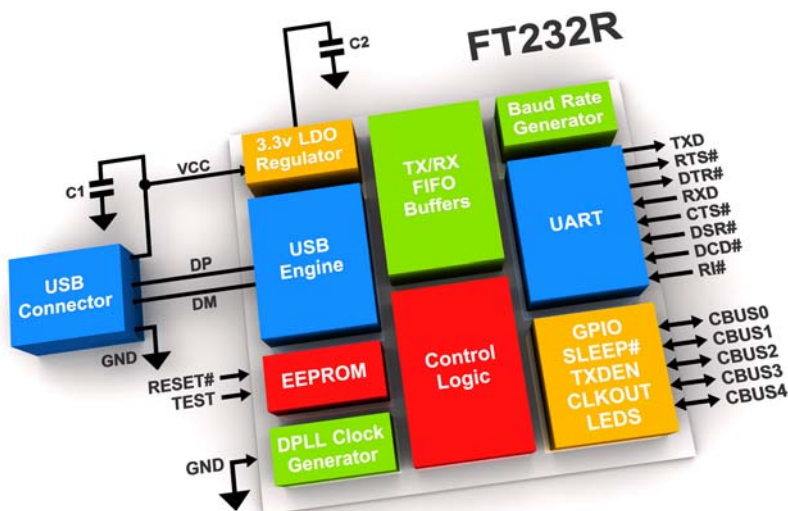
## Technical Details: 1200-Baud RS232/USB Port-Powered Packet Modem

### Project Introduction:

This modem is a true 1200-baud Bell 202 using a MX614 from [Maxcom](#), making it ideal modem for VHF & Satellite digital work. Modem is self-powered as it takes power from either RS232 Com port or USB port.

[MX614](#) is a low voltage low current modem chip. This modem is powered from RS232 or USB port. (Just like good old [Hamcom](#)! :) Headers are required to be properly installed to select source of power: from a Com port or from an USB port.

For USB operation, a surface mounted FT232RL is used. This Chip includes crystal oscillator and requires minimum of external components:



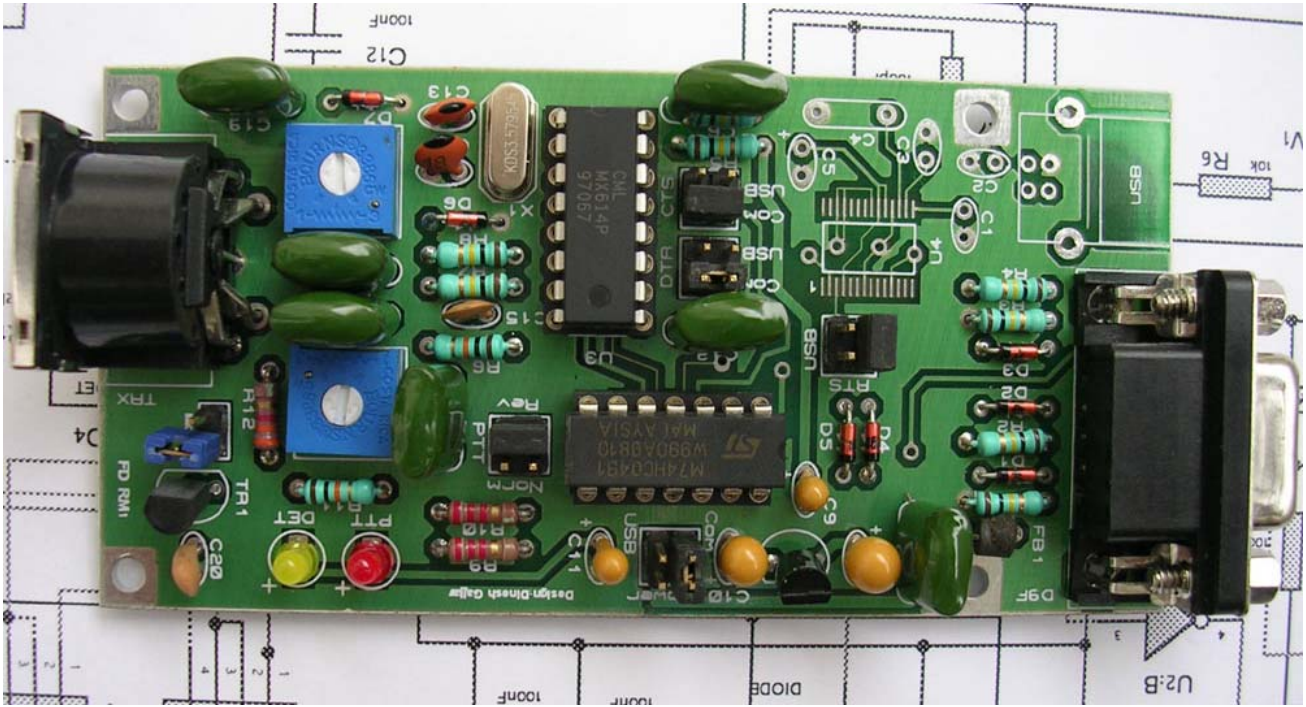
Only required data Pins are used. For [BayCom](#) Type Software Modem Interface, RTS, DTR & CTS are used. Please refer to [FT232RL](#) datasheet for details on use of C1 & C3, which may be installed to reduce EMI coming from USB port and so is C2, a 1000pf ceramic.

USB drivers for Win/Linux etc may be installed directly from [FTDICHIP](#). When installed, these drivers create a virtual come port for your PC (com 3, 4, 5 etc)

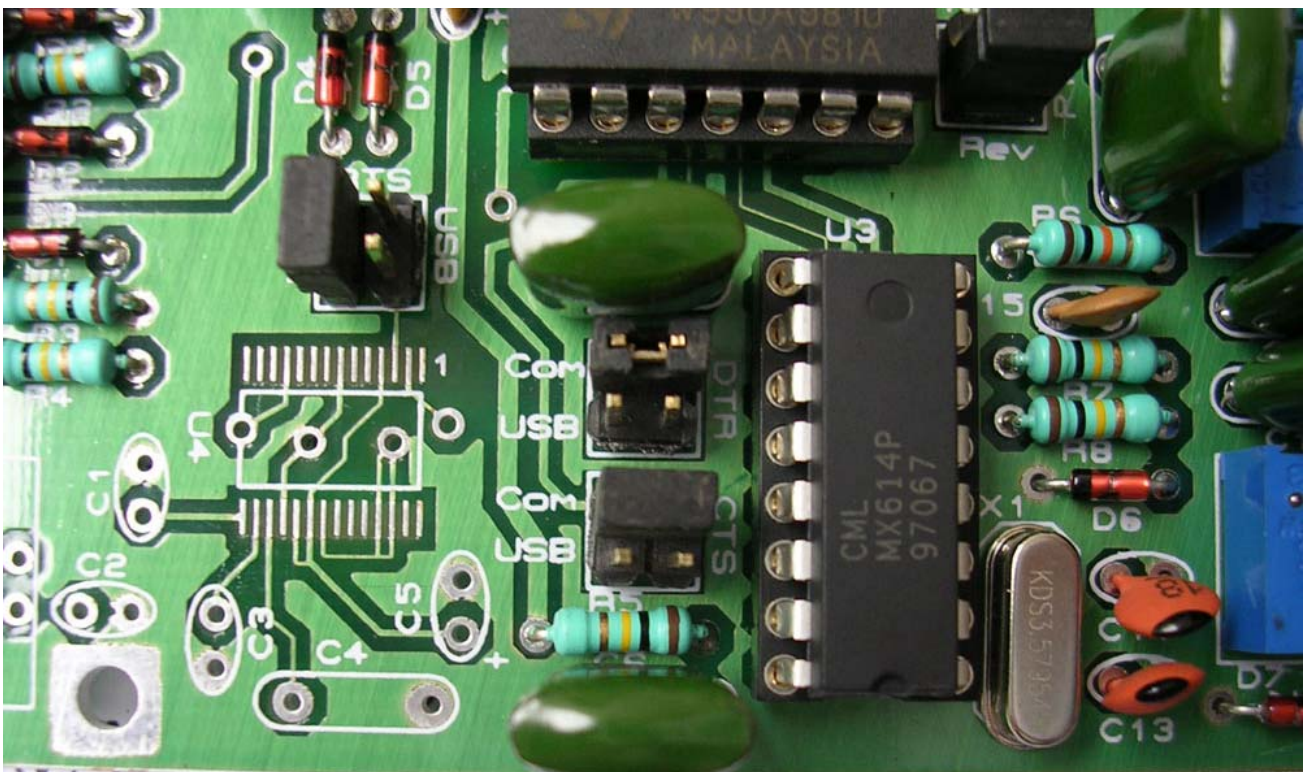
Modem has front panel DIN5 connector to connect to Rig Microphone and other Transceiver connections.

Project is designed on 10cm X 5cm Double Sided PTH board and results were very encouraging. With this modem, perhaps, you will not require another modem in future.

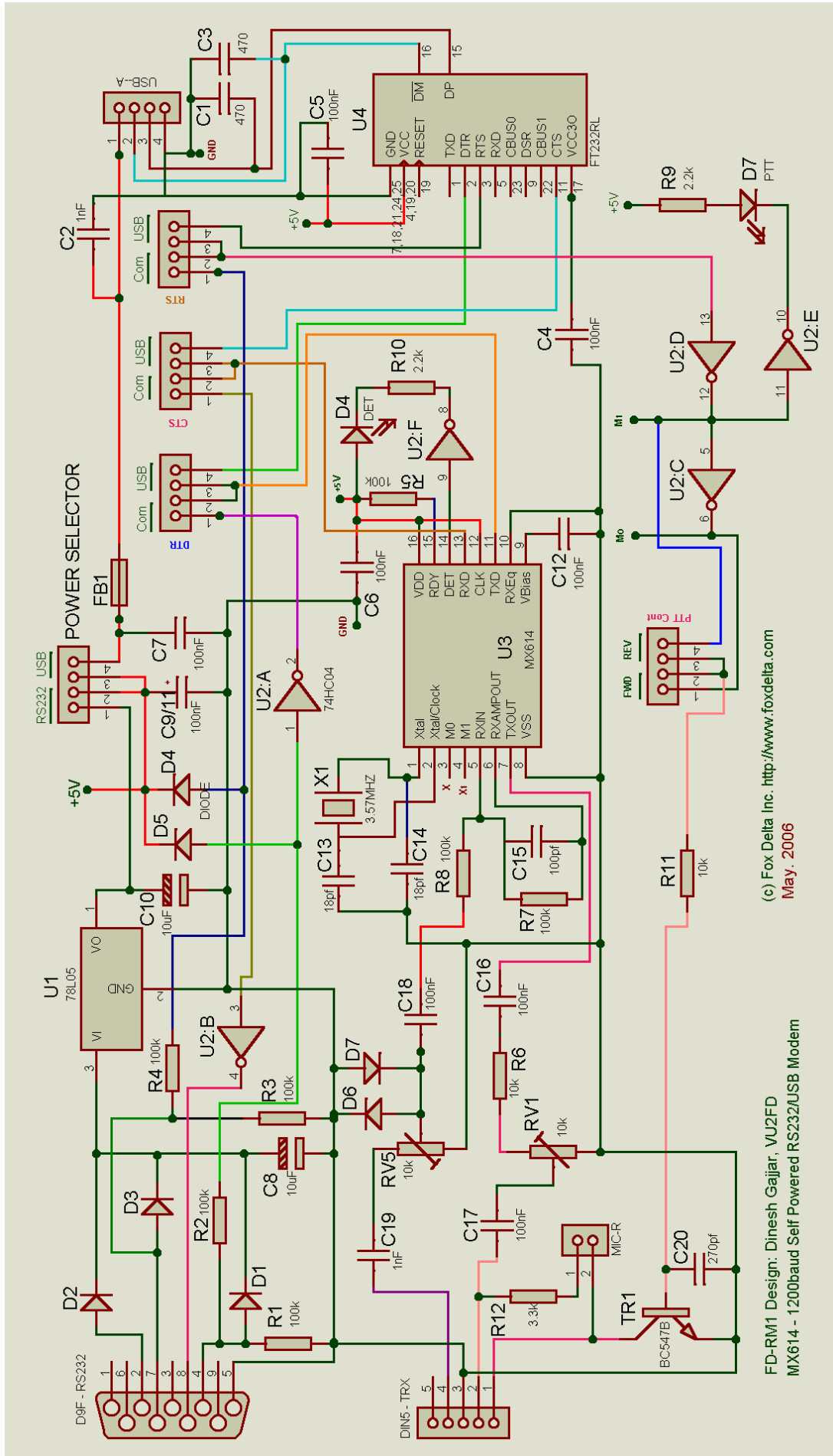
**Picture of the Completed 1200baud Port Powered Modem:**



**SMD SOIC28 Area for FT232RL:**



# Schematic of the 1200-Baud Modem:



(c) Fox Delta Inc. <http://www.foxdelta.com>  
May, 2006

FD-RM1 Design: Dinesh Gajjar, VU2FD  
MX614 - 1200baud Self Powered RS232/USB Modem

## **Assembly Notes:**

**This modem project is not for everybody. It is built on a PTH PCB & it is very important that you fully understand the Schematic, your Rig Connections and knowledge of using required software.**

**Support on hardware as well as software is always available on project forums but that should be limited to discussion of technical problems related to operation of this modem by individuals.**

**Assembly of this modem is simple. All the parts in kit are packed separately in plastic bags clearly marked with its value.**

**Construction may start by first installing DB9 Connector, DIN5 connector and USB Connector.**

**Next step would be to solder IC sockets, 7805 regulator, Crystal and all the diodes & capacitors. FT232RL (SMD) is supplied soldered on the PCB.**

**Install headers and presets, followed by all resistors, Transistors & capacitors.**

## **COMPONENT ID:**

**Observe the polarity of LEDs. Long lead is always Anode. On Tantalums, + is marked as a black line on capacitors and there is + sign on PCBs.**

**IC pin #1 is clearly marked as usual and transistor configuration is standard TO92, i.e. EBC. You may use 2N2222 in place of BC547 if you like.**

## **POWER SUPPLY:**

**Modem requires 5V DC supply, which it takes from USB or RS232 ports.**

## **Amendments:**

**Any design change or improvement suggestions will be posted on project website.**

**Please visit <http://www.foxdelta.com>.**