Block Diagram STAR-Modem RF910MHz

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STAR-Modem RF910MHz: FUNCTIONAL DESCRIPTION AND BLOCK DIAGRAMS

Functional blocks description of the EUT with reference to page 3/4/5 block diagrams:

Main Processor
It's a 16 bits embeeded Microprocessor with internal Flash and Ram memories.
It runs at 16 Mhz. This processor moves data between other blocks and controls block funtionality.

Radio Transceiver
Receives and transmit data packets at 36864 baud Manchester encoded.
Tx Power out (50 Ohm) +0 dBm typ.
Tx FM deviation = 45 KHz typ.

Charger State Indicators
Three leds indicates PowerOn (green), Status (red) and Tx/RX (yellow).

Antenna
StarModem has an external fixed antenna.

UART
External UART witch drives Radio Transceiver. It's frequency work is 3.6864 MHz.

PIC
Programmable OTP microcontroller witch converts uart NRZ (start+data+stop) bits into radio output Manchester RZ data bits. It works at 3.6864 MHz.

Power Supply (Step Down)
No batteries.
The 10-30V model supplies 10-30 Vdc. It sources 200 mA max. A step-down Converter supplies 5 V to all circuitry.
The 5V model supplies 5 V to all circuitry. It sources 200 mA max.

Multiinterface
Transmit and received the data via rs232 and wedge/pen interface.
The wedge interface operates as follow: the Star-modem is connected betweenth the keyboard and the cpu of a personal computer. When the Star-modem wants to send a barcode to the PC, simply emulates the keyboard and behaves as the user was typing the barcode with the keyboard.

STAR-Modem RF910 MHz USA **is make-up of two variants :**
1) STAR-Modem RF910MHz with input power 10-30 Vdc.
2) STAR-Modem RF910MHz with input power 5 Vdc
This two variants differs only for power supply and not for functionality.

Clock sources description (GEL-2369 into 10-30Vdc model, GEL-2370 into 5Vdc model)

16.00 MHz Quartz Crystal	Main Microprocessor Clock
3.6864 MHz Ceramic Resonator PIC	Microcontroller & UART Clock

Radio transmitter/ receiver:

X1: 14.21875MHz	XTAL TX
X2: 14.05160MHz	XTAL RX

RF suppression devices (GEL-2369 into 10-30Vdc model, GEL-2370 into 5Vdc model):

On dc power input:

N.2 inductor 1uH	TDK NCL453232T-1R0K
N.2 ferrite bead	TDK ZBFS5101-PT
No.9 capacitors	Y5V C=100nF

On DC output:

No DC output.

On interface port:

No.10 ferrite beads	MURATA BLM21A601S
No.4 T filters	100 Ohm + 1nF + 100 Ohm

STAR-Modem RF910MHz BLOCK DIAGRAMS

Fig. 1 - Block Diagram of the Connections inside STAR-Modem RF910MHz and Printed Circuit Boards.

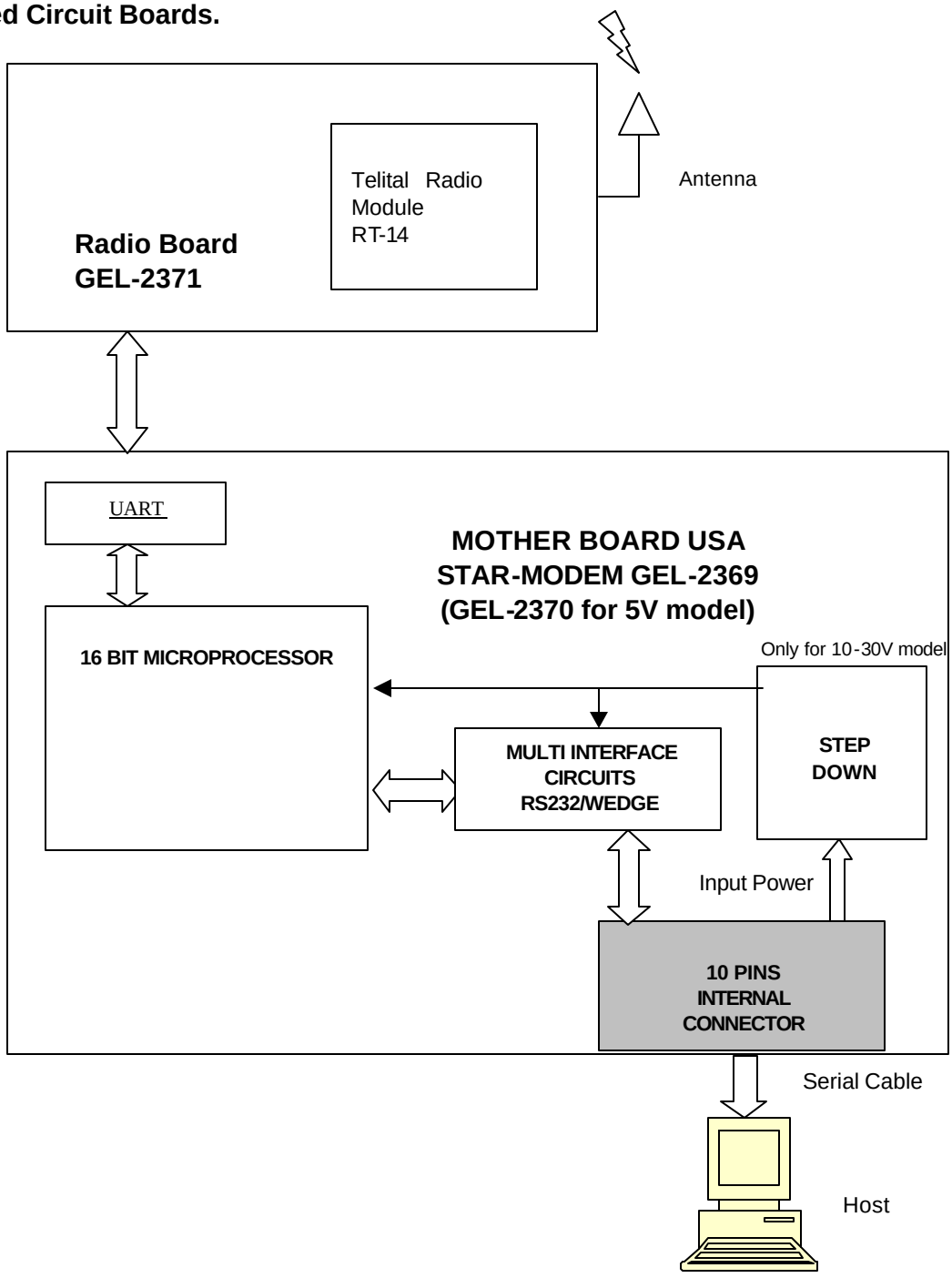

Fig. 2 - Block Diagram of the EUT

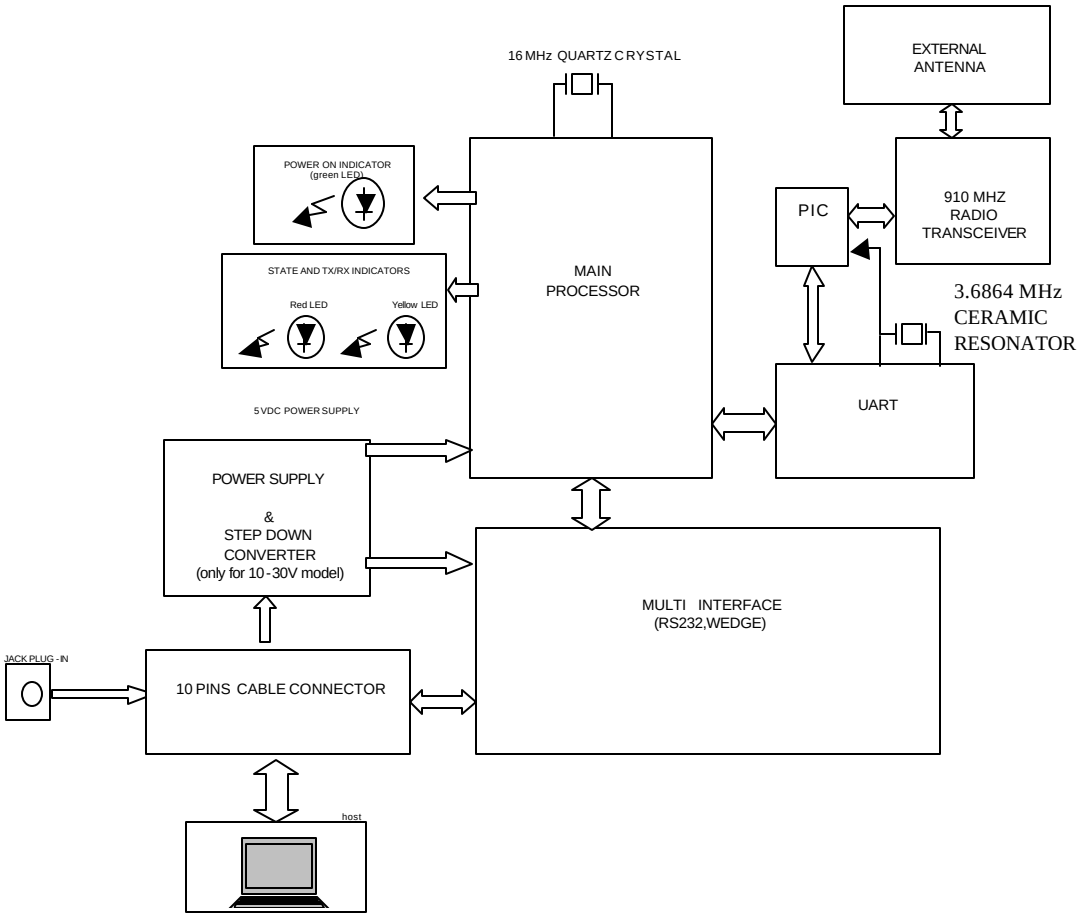

Fig. 3 - Block Diagram of Transceiver