

## EXPOSITORY STATEMENT / CIRCUIT DESCRIPTION

### BLOCK DIAGRAMS

Guardian transceiver Model 20603 used in a hospital to transmit ECG and blood oxygen level of a patient to the central nursing station. The receiver allows the central nursing station to download into transceiver EEPROM a patients' room number, name etc.

Please refer to Programmable Frequency Synthesizer Transmitter Block Diagram with the following brief description of each block :

- \* ECG                      Amplifies ECG signal from leads connected to patient. Amplified signal from ECG leads is sent to CPU board where it is digitized and packetized for transmission by the transmitter.
- \* SP02                    SP02 board measures blood oxygen level of patient. The measured levels are sent to CPU board over a serial digital interface. The CPU board packetizes the data for transmission by the transmitter.
- \* 9 RECEIVER            The receiver is a single chip, direct conversion type receiver with a low noise preamplifier between receiver chip and the antenna. The receiver allows the central nursing station to download to transceiver EEPROM information such as patient name and room number.
- \* 9V BATTERY            Supplies power to DC to DC converter.
- \* DC to DC                DC to DC converter operates at Approximately 85 Khz switching rate. Converts 9V to 3.3v and 5.0v
- \* CPU                      CPU board takes signals from ECG, SP02 and receiver circuits and packetizes the data to be transmitted by the transmitter.

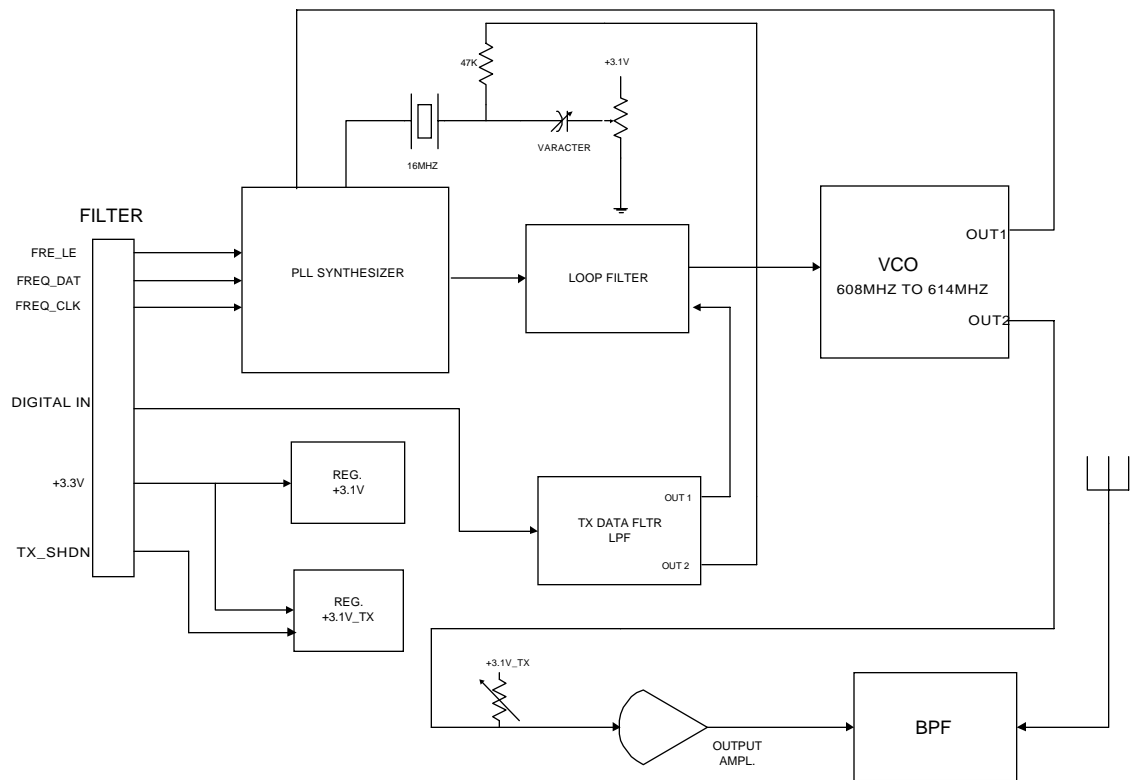
- \* **PROGAMMABLE TRANSMITTER**

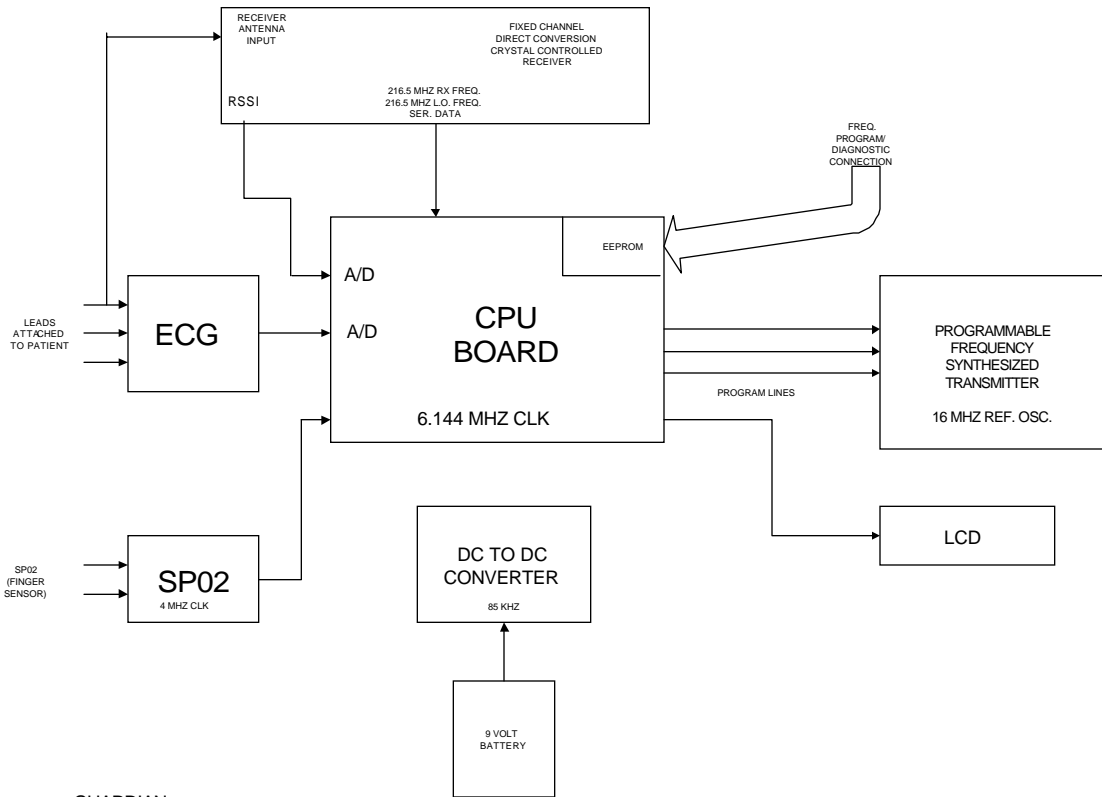
Transmitter can be programmed with a computer in 12.5 KHz steps from 608 Mhz to 614Mhz.  
Transmitter is an FM transmitter with 5.5 KHz deviation at a maximum baud rate of 9600. Nominal power out is 5 mw. See schematic and transmitter block diagram for more detail of transmitter circuitry.
- \* **VHF ANTENNA**

The 216.5 Mhz receiver uses one of the ECG leads for its antenna.
- \* **UHF ANTENNA**

The 608Mhz to 614Mhz transmitter is capacitively coupled into ECG leads for its antenna.
- \* **LCD**

Displays status and configuration data.





GUARDIAN  
TRANSCIVER BLOCK  
DIAGRAM