

## Description of device for N9Y0007

### Introduction.

The attached FCC application concerns a family of transmitters used as a component of a Wireless Monitoring System. This system can find application in various commercial, medical, and consumer environments. Examples of applications include biomedical physiological monitoring and industrial/environmental monitoring.

The transmitter and receiver operate in the 902-928 ISM band under part 15 of the FCC regulations. The superheterodyne receiver is covered by a Declaration of Conformity under the October 5<sup>th</sup>, 1998 rule changes. The transmitter is covered by the Certification procedure under part 15.249 of the regulations and is the subject of this FCC application.

### Tradenames.

The transmitter and monitoring system will be marketed under several Tradenames as market conditions dictate. The following Tradenames have been chosen so far: BioRadio, Crystal, and SnowStorm.

### Model numbers.

Various configurations of the transmitter will be marketed dependent on the target application. Each configuration will be assigned a different model number. All configurations will have the identical physical enclosure, antenna, radio circuitry, digital circuitry, PCB layout, and operating firmware. Different model numbers will be differentiated based on the signal acquisition parameters set for that model. These include: number of input signal channels, mode of input channels (single-ended or differential), signal conditioning parameters (gain and filtering), and digitization parameters (sample rate and digital word size). Hardware modification of any of these models is limited to the addition of one or more resistors or capacitors in the analog circuitry front-end.

### Operating modes.

#### *Normal mode*



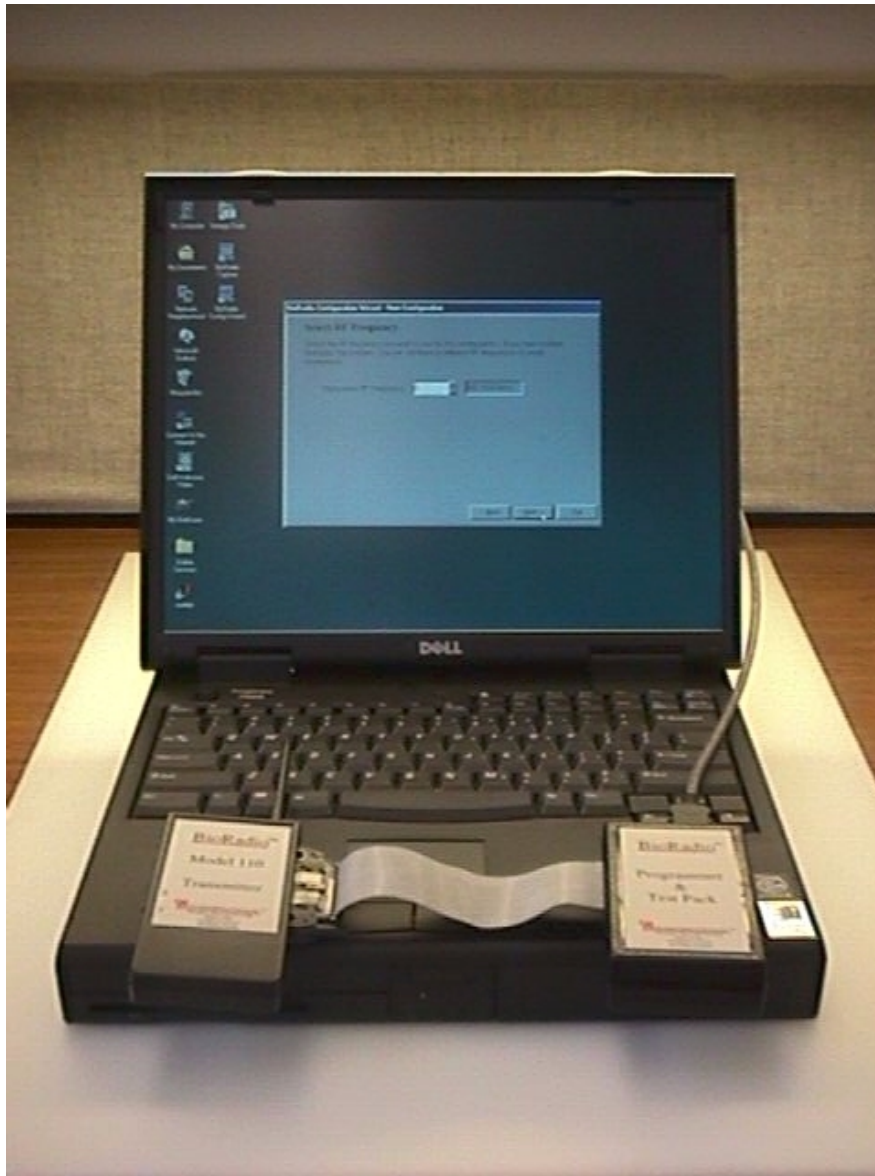
In this mode the transmitter is connected to the various source signals and continually transmits digitized data representing the acquired, processed signals. These input signals can number as few as one or as many as sixteen. Internal gain, filtering and digitization is applied to all the signals. Resulting data from all input signals is formatted into packets and transmitted to the receiver using a single RF frequency carrier.

### *Test mode*



In order to determine the functionality of the system (e.g. to test for adequate transmission range within a building or for system troubleshooting) the end user can connect the transmitter to a Test Pack. The Test Pack continually inputs a known signal (low frequency sinusoid) to the transmitter, allowing a system functionality check independent of the application's signal sources.

### *Programming mode*



In "full-featured" models, the end user will be able to configure the transmitter to match the application. User software will be supplied that allows selection of the transmitter RF carrier fundamental (for situations where an interfering source is present on any given channel, or where several transmitters are being used in the same area). The same software will allow setting of the signal acquisition parameters. The programming of the transmitter is accomplished by connecting a programming interface unit to the signal input connector and selecting parameters via a personal computer serial port. During programming the unit is not transmitting. The transmitter can be programmed to transmit on any one of 255 channels within the 902-928 ISM band. Channel 0 (the lowest fundamental frequency used) is set at 905.1648 MHz. Channel 255 (the highest fundamental frequency used) is set at 924.7488 MHz. All other channels are equally spaced between these two frequency extremes.