Theory of Operation

MicroWIS PC Interface Unit

Upon power up, the MicroWIS PC Interface Unit initializes its acknowledge packet buffer with the default sample rate of 1 sample per minute. Next, the radio is put into receive mode and the serial interrupt (from the PC) is enabled. The microprocessor of the MicroWIS PC Interface Unit monitors the radio for incoming RF ASK modulated data with a base-band bit time of 9 micro seconds. Upon reception of data, the processor checks to ensure that the message is a valid data packet. If the data packet is invalid, contains a false node, or fails the CRC check, the processor returns to monitoring the radio for incoming data packets. If the data packet is identified as a valid MicroWIS Sensor data packet, the radio is put into its transmit mode. The PC Interface Unit then ASK transmits with 9 micro second bit times the acknowledge message, containing the current sample rate, addressed to the node that transmitted the data packet. The acknowledge packet transmission takes 1.1 mS. Immediately after transmitting this message, the processor puts the radio back into its receive mode. The data packet is then transmitted at 19.2 kbps via RS-232 to the PC running the MicroWIS Graphical User Interface. The receiver then returns to monitoring the radio for incoming MicroWIS Sensor data packets. Upon an interrupt from the RS-232 serial port, the receiver will monitor the RS-232 port for a command packet transmitted at 19.2 kbps from the MicroWIS Graphical User Interface running on the PC. The processor check the command packet for validity and if it is a valid command packet, updates its sample rate in the acknowledge packet buffer, otherwise it returns to normal operation.

19221 I-45 South, Suite 530
Conroe, TX 77385