

## 2.1033 (b) (4) Brief Description of Circuit Function

Introduction: The H-Net™ radio system has been developed by ConectiSys Corp. as an Automatic Meter Reading (AMR) solution for residential and commercial energy markets. H-Net™ utilizes a proprietary protocol for two-way communication using a wireless, tower-less network. The H-Net™ 5.0 Eight Channel Basestation is a controlling hub for an H-Net™ 5.0 radio system network. The basestation provides a central point for data collection from individual meter units, synchronizing and communicating with individual meters in a TDMA scheme. The eight channel basestation is designed to receive data from up to eight meter units simultaneously time in the basestation's receive sequence. The design provides a solid foundation for future iterations of basestations that will integrate additional receivers.

The basestation consists of a PC/104 computer, Compact Flash drive, AC/DC converter, DC/DC converter, battery back-up system, surge protectors and 8 H-Net™ 5.0 radios (one of which has been modified to be the transmitter unit, while the other seven will only receive). The power system is comprised of a 120VAC to 12VDC converter with a 12VDC-battery backup and a 12VDC to 5VDC/3.3VDC converter to power the PC/104 and radios respectively. The radio system is composed of eight radios, each composed of two PCB assemblies (controller module and RF module), a multiplexing board and an omnidirectional vertically mounted, horizontally polarized antenna. The controller and RF modules interface together via PCB mounted headers. The controllers are interfaced to the PC/104 via RS232 serial lines. The antenna is weather sealed and mounted on the top of the basestation. The basestation is housed within an environmentally sealed enclosure meeting the following standards:

UL 508 Type 3R, 4, 12 and 13  
CSA Type 3R, 4, 12 and 13 Complies with  
NEMA Type 3R, 4, 12 and 13  
JIC EGP-1-1967 unless marked'  
IEC 529, IP66