

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 Single Channel Basestation is the 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 single channel basestation may only receive data from a single meter unit at any given time in the basestation's receive sequence. The design provides a solid foundation for future iterations of basestations that will integrate additional receivers for simultaneous data reception from multiple meter units.

The basestation consists of an H-Net 5.0 radio, PC/104 computer, Compact Flash drive, AC/DC converter, DC/DC converter, battery back-up system and surge protectors. 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 radio respectively. The radio system is composed of two PCB assemblies (controller module and RF module) and an omnidirectional vertically mounted, horizontally polarized antenna. The controller and RF modules interface together via PCB mounted headers. The controller is 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 marked¹
- IEC 529, IP66