System III CEMA Protocol

SYSTEM III™

CEMA Protocol

Patented Network Protocol

Collision Eliminating Multiple Access (CEMA) Network Protocol is a patented channel access protocol providing efficient and reliable data transfer from multiple users across a metropolitan area network (MAN). Operating with the System III Intelligent Radio Modem (IRM), Repeater and Network Manager products, CEMA software combines non-polled channel access with user terminal protocol processing to carry data packets efficiently within a wireless MAN. Designed specifically for transaction-oriented data, CEMA achieves maximum data throughput by avoiding packet re-transmissions caused by collisions of simultaneous transmits by different network participants.

Features:

- Multiple hosts/multiple protocols
- Hubless, non-polled channel access
- Error free data transfer
- Collision free data transfer
- Supports multiple users and terminal protocols
- Spectrum re-use
- Peer-to-peer communications
- Broadcast and multicast
- Low latency
- Fault Tolerant
- Automatic Responder Queuing
- Full Network Managment capability

In the ISO, layered model, CEMA performs MAC and Data Link layer functions, including reliable, error-checked data transfer. Users simultaneously access the network by submitting a request during fixed contention slot intervals, which are reserved at the end of each packet transmission. This mechanism insures uninterrupted data transfer. Each CEMA transmission can hold up to eight data packets of 256 bytes each for a total of 2048 bytes of data. Transmissions that are more than 2K bytes are queued, transmitted and then restored to a continuous data stream at the receiving end. Error checking is proved by use of a 16 bit CRC with positive acknowledgement for each transmission.

Terminal protocol processing software is an inherent part of CEMA. Protocol modules are optimized for commonly used terminal protocols and efficiently carry the protocol data on the RF network and include:

- Flexible Baud Rates
- Polling Emulation
- Acknoledgement Timing
- Data Compression & Security

User protocols supported by CEMA:
SNA/SDLC, HDLC, IBM 3270 Bisynchronous, ISO Poll Select, SLIP/PPP, Asynch. Terminal
X.25 Level 2,/LAPB, TCP/IP
VISA-1 & 2, Datapac 3201/POS

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