



P2000 CDPD Technical / Functional description

The P2000 CDPD payment terminal is a self contained unit, comprising a Processor Board, a magnetic card swipe reader, a smart card reader, a printer, and a CDPD radio (cellular Digital Packet Data) at 824.4 Mhz center frequency, via a $1/8 \lambda$ Helical antenna.



Fig.1 P2000 CDPD

The Unit operates at 4 levels:

- 1 The operating System,
- 2 The Kernel.
- 3 The payment application.
- 4 The communication protocol

While the P2000 is on the base, the battery is in the charge mode and the unit is powered up. And is capable of communicating with payment processors via a choice of radio, or modem, depending on the original set up.

While off the base, the P2000 CDPD can only communicate with the processors via the CDPD radio. During periods of inactivity (beyond thirty seconds), the P2000 enters a sleep mode, during which all systems are down, except for the radio, which wakes up periodically to stay registered

The Terminal operation consists of the following typical steps:

A transaction is selected by pressing a selected key:

A credit card is swiped through the reader, which captures the pertinent Credit card Data.

A purchase (or credit) amount is entered via the Keypad

Certain other information such as Employee number, password, etc is keyed in as well when prompted by the display

The transaction data is formatted according to the Credit card processor's message format, and protocol and passed on to the CDPD Radio, which transmits the authorization request to the card

processor via TCPIP. The processor returns the authorization (or denial) Back to the CDPD radio, which communicates it back to the terminal. All prompts, activity and results are displayed on the display screen.

The built in thermal printer then prints a receipt.

The detail of all these operations are described in the document entitled "P2000 User's Manual"

Technical Specifications:

Intel® 32 bits micro-processor.

Applications stored in memory FLASH.

Transactions stored in battery secured memory.

Partitioned memory.

1 Mbytes of memory in basic version.

High speed, high resolution graphic thermal printer allowing printouts of personalized logos and bitmaps in less than 3 seconds.

Card Readers :

- Magstripe : ISO 1/2.

- Smart Card: ISO 7816 (EMV, synchronous / asynchronous).

17 keys: 10 numeric and 7 functions.

NI-MH battery pack allows more than 200 transactions.

Infrared EFT to base communication.

Battery charging and modem base.

Alphanumeric screen displays 2 lines of 16 characters.

Audio warning and paper feedback.

Modem multi-norms V21, V22, V22bis, V23, Bell 103, Bell 212 A..

Radio Specifications pertinent to the operation of the P2000 terminal:

Type:	Novatel Expedite CDPD Modem
Power:	.6 Watts Max
Frequency:	824.4 Mhz
Communications:	Full duplex



Fig.2 Expedite CDPD Modem Shown Without Shields