

cybernet inc.



# **JADE** Breakthrough

*The Visa Members'  
Global Payment Solution*



# The Fast, Most Competitive Payment Device for EMV Migration

## Cost Effective...High Security... Plug & Play

*JADEBreakthrough* addresses the varying requirements of different markets across the world. *JADEBreakthrough* features a powerful 32bit processor, runs on *CyberSoft*, its state-of-the-art operating system, and is delivered with an IDE (Integrated Development Environment) toolkit.

'C' based development environment, *CyberAPI*, is also available on *JADEBreakthrough* for easy application development. The main characteristic of this device is that it is easy to use, easy to manage and has a high security built-in PINpad complying to Visa PED requirements.

Moreover, in addition to dial-up communications using 2400bps or 33.6Kbps (option) modem, *JADEBreakthrough* supports the optional Ethernet communications with SSL encryption security that deliver a variety of advantages - super-fast transactions and always-on service.



## What is in the *JADEBreakthrough* package?

- A powerful payment machine, EMV level I, EMV level II and Visa PED
- A retail payment application for international credit and debit (ISO8583)
- A fast (12.5 lines/sec), easy to load printer
- An option to choose a fast modem (33.6Kbps)
- An option to choose Ethernet communications
- A license of the *CyberWrite* software development toolkit
- A license of the pcTMS™ terminal download system

# Technical Specifications



## Standard Configurations

### Processor

- RISC 32bit (20 MIPS)

### Memory

- SRAM: 512KB (Option: Up to 2MB)
- Flash: 1.5MB

### Display

- 128 x 64 pixel graphic display
- Up to 8 lines x 21 characters
- Backlit

### Keypad

- 21 keys
  - 12 numeric keys
  - 4 soft function keys
  - 2 scroll keys
  - CANCEL, CLEAR & ENTER keys

### Magnetic-stripe card reader

- Tracks: 1&2 or 2&3
- Bi-directional

### Smartcard reader

- ISO7816 compliant
- EMV level I (2000) certified

### Security Access Module (SAM)

- 2 (Option: Up to 4)

### Modem

- Async: 2400bps (Option: Up to 33.6Kbps)
- Sync: 1200, 2400bps

### Peripheral ports

- RS232 x 2
- Telco x 1

### 10/100 Base T Ethernet (Option)

- Standard RJ45 connection
- Supports static & dynamic IP address
- 1 x RJ45 or mini-din serial port
- Speed: 1200bps ~ 115Kbps
- Flow control
  - Software (AT command)
  - Hardware (RTS/CTS)
- Supporting protocols
  - ARP, IP/ICMP
  - TCP, UDP
  - DHCP client
  - PPPoE
- Security
  - User ID & password
  - Data encryption: SSL

### Security

- DES, 3DES encryption
- DUKPT, Master/Session key management
- Visa PED certified

### Printer

- 2" thermal
- 12.5 lines/sec
- Clamshell paper loading

### Power

- Input: AC 100V ~ 240V, 50/60Hz
- Output: DC 8.0V/3.0A

### Physical dimensions

- 86.4mm (W) x 212.6mm (L) x 94.5mm (H)

### Weight

- 537g

### Environmental

- Operating temperature: 0°C ~ 40°C
- Storage temperature: -40°C ~ 65°C

## Software Environment

### CyberSoft

### CyberAPI

EMV level II (2000) certified



## Software Development Tools

### CyberWrite

Since CyberWrite is a complete GUI, all the features of a windowing environment such as "Point & Click" and "Drag & Drop" visual programming methodology is supported, allowing users to create applications in an IDE that is delivered in Java™.\*

### CyberTerm

Applications written with CyberWrite can be tested and debugged on the host development system using CyberTerm, a PC based simulator to test and debug the applications before loading to any terminal or target devices.\*

\*Available on PC (Windows), Apple, Unix, Linux

IOS6593	VSDC	MCHIP	APACS30	PROTON	MONDEX	VISA CASH	SCRATCHLESS	LOYALTY	CLOCK	CALCULATOR
MCA (Master Control Application)										
VM (Virtual Machine CyberEngine)										
HAL (Hardware Abstraction Layer)										
Firmware Drivers										
Hardware										

