Cipher-201 Programmable Terminal

User's Guide

Syntech Information Co., Ltd.

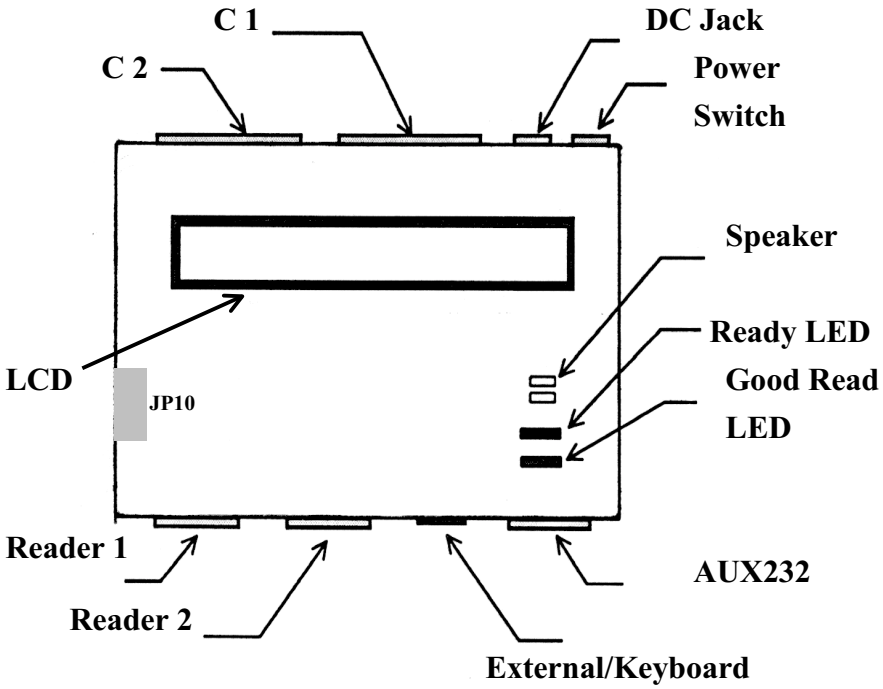
1. Packaging

This pack includes:

(1) This User's Guide
(2) The Cipher-201 main unit
(3) Optional LCD display and Calendar (if ordered)
(4) Power Adaptor (110VAC or 220VAC)
(5) Default System Master Card (1234567890)

2. Components

2.1. Top View



Note:

The data memory can be a **32KB** or **128KB SRAM**. However, to accommodate different pin assignments, The **SRAM** type must be selected via the jumper (JP10) on the main board.

3. Installation

3.1. Power Source

The Cipher-201 requires +5V from either C1 or C2. In case this host power is not available or is not adequate, The 201 will accept power through its DC jack using a power supply with a range of between 8V and 20V.

3.2. Reader Ports

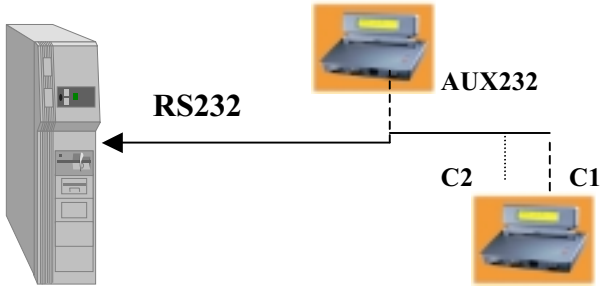
These two reader ports are used to connect either a Wand, Barcode slot reader, Barcode Scanner with Laser emulation or up to dual-track magnetic card reader.

3.3. External Keyboard Port

Besides the built-in keypad, an external PC/AT keyboard can be attached to facilitate data entry.

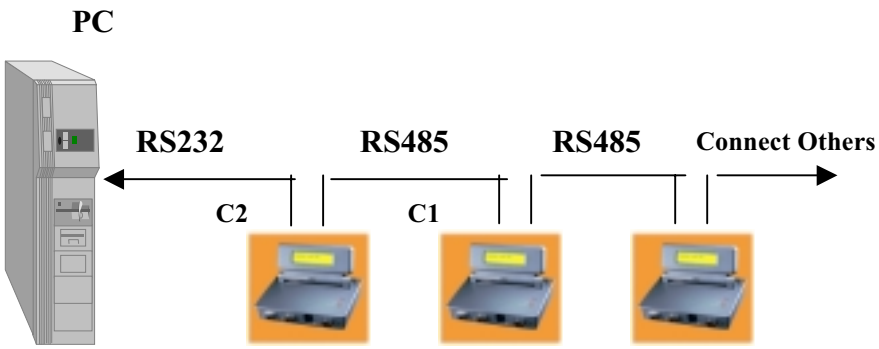
3.4. RS232 Connection

The factory settings of the RS232 port are 9600 baud, 8 data bits, no parity, and 1 stop bit. All units are initially set up as ONLINE MASTER Users can use the Aux232/C1/C2 to connect to the host and transfer data.



3.5. RS485 Connection

The RS485 ports are used to connect multiple Cipher-201s. Every Cipher-201 station is connected to the RS485 bus line in a daisy chain style.



Connect Others

RS-485 Connection between Cipher-201s

3.6. Digital I/O

The Cipher-201 provides 2-digital inputs and 2-digital outputs for controlling and monitoring external devices. These inputs and outputs are photo-isolated and share the same DB-25 connector as COM2

13. Digital Output 1 14. Digital Output 0
15. Digital Input 1 16. Digital Input 0

COM2 Port Connector and Digital Pin Assignment

3.7. Speaker

A low power speaker is supported and the sound level has 4-tunable levels. This speaker electrically behaves like a capacitor, which implies that current flows only when states are changed (charge/discharge capacitor) and very little power is consumed. However, a higher voltage, e.g. 10V is needed to drive it.

3.8. LED Indicator

There are **2 LEDs** on the panel for showing the system status.

- **READY, Red**
- **GOOD READ, Green**

3.9. LCD Display

A 2 x 20 LCD is used to display current system time, scanned card ID, system messages and so on. This is an easy-to-read wide viewing angle LCD equipped with LED back light and can easily be read even in a dimly lit environment. The viewing angle can be adjusted via a variable resistor as depicted in the *Nomenclature*.

4. Programming System Parameters

The system parameters of Cipher-201 Terminal can be programmed manually or through RS232 commands. Manual programming of the Cipher-201 terminal is described in this section and programming the Cipher-201 via RS232 commands will be described under the section **RS232 Command**.

4.1. Manual programming

Power on the Cipher-201 scan the master card and enter the password. If the password was set to none, this step is simply ignored. If the password is correctly entered, Cipher-201 will enter System Management mode where 2 major tasks can be done as follows,

1. **Setup**

```
System Manager
1.Setup
```

(1) Press the ENTER key and the Cipher-201 is in the setup mode and is ready to accept system parameter modifications. The Cipher-201 will show the name of the parameter on the upper side of the display and the original setting value on the lower side.

```
2. Line Connection:
=Master
```

(2) Press the ENTER key to change the value of the parameter. Use the "◂" and "▸" keys to select a new value or type in a new value using the numeric keys. Press the ENTER key to conclude the new setting.

```
1. Line Connection:
-><Single>
```

(3) After all the system parameter modifications are completed, the F1 key must be pressed to update and save the new settings into memory. The system will restart with the new settings. If the F2 key, instead of the F1 key is pressed, all modifications will be

discarded and the original settings retained.

(4) The following are the system parameter settings,

a. Station ID
b. Line Connection
c. Max. Station ID
d. Manager Card
e. Manager Password
f. LCD backlight
g. Master Card
h. Password
i. Buzzer Volume
j. Time
k. Timer Fine Tune
l. COM1
m. COM3/AUX
n. Symbologies
o. Reader1
p. Reader2
q. Time Stamp
r. ID Stamp
s. Source Stamp

2. **Self Test**

This mode provides a simple yet efficient way for diagnostics.

Press the **ENTER** key to execute the following items test, in order

- Flash test
- SRAM test
- Beeper test
- LCD test
- LED test
- DI & DO test

- COM1 test
- COM2 test
- COM3 test
- RS485 test
- Wedge test
- ADC test
- Calendar test
- Reader test
- Keypad test
- AT Keyboard test
- Shutdown test

3. **Init System**

This is used to set all system parameters to their default value and initialize the file systems. Care should be taken, as this will destroy all data stored in memory.

4. **Flash Clone**

This is used to copy the program in FLASH memory to another terminal. Usually it is used for diagnostic or software update.

5. **Flash Download**

This is used to update program code stored in flash memory. The code can be downloaded from a PC using the “MDL6” or as described in the previous section, from another machine. Also, the RS232 parameters have been fixed to 38400,N,8.

4.2. Host Command

The host computer can get access to terminals on the RS485 network via COM1 of the master station.

Basic characteristics of the Cipher-201 are listed below,

4.2.1 Command Format

Each command is composed of <CC><ss><p..p>^,where,

<CC> command code string
<ss> 2 digits station ID depending on command code
<p..p> parameters
^ delimiter carriage return, hex 0d

4.2.2 Command for master station

The following commands are for master station only and thus NO station ID should specified.

Command Code	Parameter	Operation	Echo
ONLINE	null	inquire on-line-status	aa,bb,..,cc lists of all station Ids that are currently on-lined including the master station itself
READ	null	read one record	d…d: if available OVER: if empty
REMOVE	null	remove one record	NEXT: done OVER: done and data file now empty
MAXID	null or =ss	inquire/set maximum station IDs to be polled	ss: 2 digits maximum ID
TIME	null or =YYMMDDhhmmss	inquire/set system time	YYMMDDhhmmss: system time after command execution. Once set, all stations on the net are modified.

Note:

The command **REMOVE** is effective only after the current record has been read by the command **READ**, else the data file remains unchanged even NEXT is echoed.

When command **TIME** is issued, the master automatically issues a broadcasting command to update all stations.

^ Delimiter carriage return, hex 0d

4.2.3 Command for Individual station

Individual stations can be accessed through these commands and 2-digit station **ID MUST** be specified.

Command Code	Parameter	Operation	Echo
DCOUNT	null	inquire on-line status stored in the data file	aa,bb,..,cc
TTUNE	null or = offset	inquire/fine tune calendar offset = offset value from –128 to +127	d..d: value of the tuning register
MCARD	null or = tm..m	inquire/set master card t: code type m..m: up to 20 characters card ID	tm..m: updated master card
PWD	null or = p..p	inquire/set password	p..p: updated password
BL	null or = d	inquire/set backlight level d: 0 to 3	d: updated backlight level
VOL	null or = d	inquire/set buzzer volume d: 0 to 3	d: updated buzzer volume
COM1	null or = b,p,d,h	inquire/set COM1 setting b: baud rate from 0 to 7 p: parity from 0 to 3 d: data bits from 0 to 1 h: handshake from 0 to 3	b,p,d,h: updated settings
COM3	null or = b,p,d,h	inquire/set COM3 setting b,p,d,h: as above	b,p,d,h: updated settings

BCODE	null or = p..p	inquire/set symbologies p..p: 20 digits for each symbologies	p..p: updated setting
READER1	null or = s,t,r	inquire/set reader1 s: scan mode from 0 to 7 t: time out from 0 to 225 r: redundancy from 0 to 3	s,t,r: updated setting
READER2	null or = s,t,r	inquire/set reader 2 s,t,r: as above	s,t,r: updated setting
TMSTP	null or = d	inquire/set time stamp d: 1/0, enable/disable	d: update setting
IDSTP	null or = d	inquire/set IDstamp d: 1/0, enable/disable	d: update setting
SRSTP	null or = d	inquire/set source stamp d: 1/0, enable/disable	d: update setting