



Smart Card Reader For Copier Applications

Version 3.1

February 2013

SEM-6-CX6

Introduction

S.E.M. Inc. is proud to introduce you its new line of Smart Card Readers: The CX6-SM2 Series!

Nowadays copiers are much more elaborate than what it used to be no later than few years ago. Multifunction copiers now offer you multiple selections for paper size, color, duplex printing, scans to email, fax, etc. The new CX6-SM2 has been designed for this new generation of copiers and brings you a simpler programming, and a simpler way to connect your reader to a copier.

The new Intuitive Programming System drives a large trilingual 4-line, 20-character blue display. At any time, this system guides you thru the parameters and informs you on the next action required.

Connecting the new CX6-SM2 is a Plug & Play operation and with the introduction of the Copier Type System, the only thing you need to worry about is getting the proper harness and setting your vend prices.

The CX6-SM2 comes in two versions. The first goes on any copiers offering standard non-serial communication. The second version, equipped with a Smart Interface, is to be connected on MFP machines offering a Serial Communication such as Canon with G1 interface, Konica-Minolta Biz-Hub Series and Kyocera-Mita Task-Alfa Series

Installation

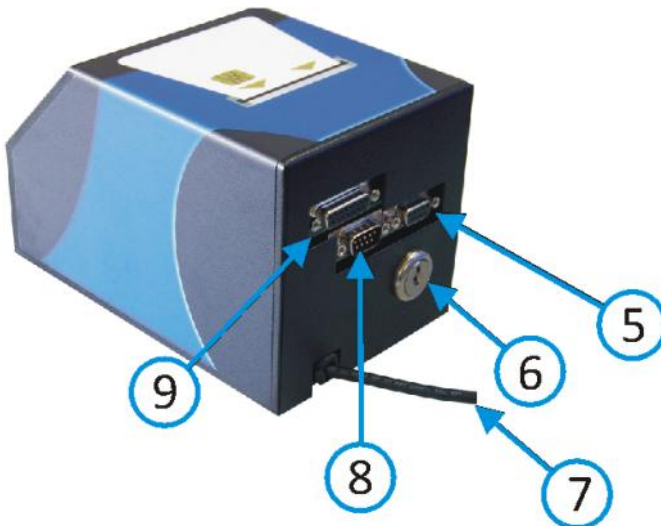
Installing the CX6-SM2 Smart Card Reader is quite simple. Its small size makes it easy to place it on the copier using double-sided tape or Velcro. If there is no room available on the copier, you can put the reader on any bracket or shelf available.

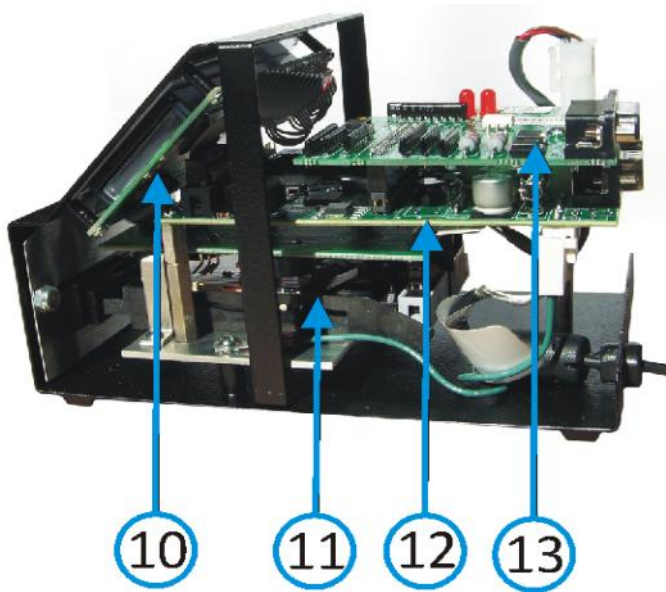
Your CX6-SM2 Smart Card Reader comes with the proper harness that fits your copier. Just locate the proper place to connect this harness. It can be on the board itself or to another harness. Make sure you have the proper harness to fit your copier. It is your responsibility to make sure you have the proper harness. Failure to comply could result in damages to both the copier and the reader.

Description of your CX6-SM2 Smart Card Reader



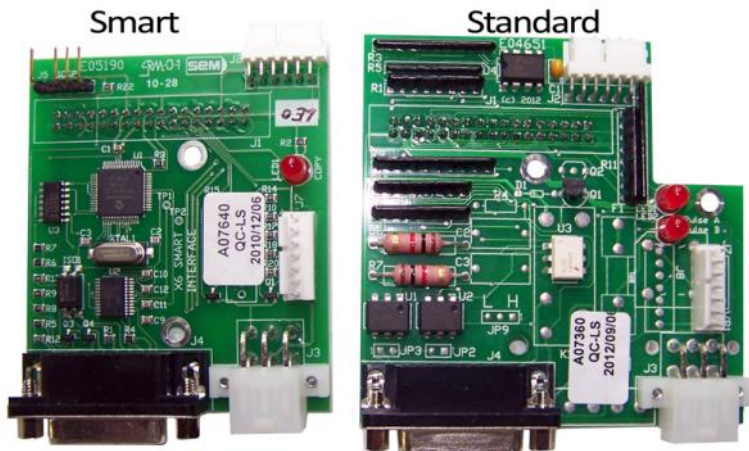
1. Indication on how to insert card into reader
2. 4-line, 20-character LCD display.
3. Card eject push button.
4. Bezel surrounded by flashing blue LEDs, goes red when card is inserted.
5. Serial printer port (9600, N, 8, 1).
6. Access lock.
7. Power cord.
8. Serial port for application such as Pay-per-Print Software.
9. DB-15 Copier port.





- 10. LCD display.
- 11. Card trap.
- 12. X6 Main circuit with programming push buttons (not visible).
- 13. Copier interface - standard shown; can be replaced with smart interface.

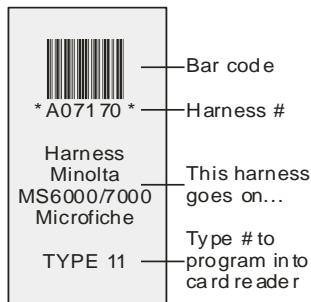
Interfaces



Connecting your CX6-SM2 Card Reader using the Copier Type System

S.E.M. Inc. has developed a new and easier way to connect your CX6-SM2 card reader to your copier. When ordering, you **MUST** specify for which copier it is intended for. If you change your copier once the reader has been installed and if this change requires an harness change, you will need to purchase a new harness.

Each harness comes with its own label onto which will be indicated the part number, the description of the copier it goes to and the type number you have to program into the CX6-SM2 card reader in the section “**Copiers Parameter 3 of 6**” (see page 12).



This new Copier Type System refers only to the programming of the card reader. It does not always designate a specific brand or model of copier. For example, many black & white copier, offering only one vend price, will be designated as Type One. However, the connector and pin-out will differ from one copier to the other. If you did not specify the copier type when ordering or if you are moving this card reader to another copier, please be aware that the **Black** and **Green** wires on the harness are for the loop giving permission to make a copy while the **Red** and **White** wires are for the debit pulse coming from the copier and going to the card reader. This is only valid for Type One copier.

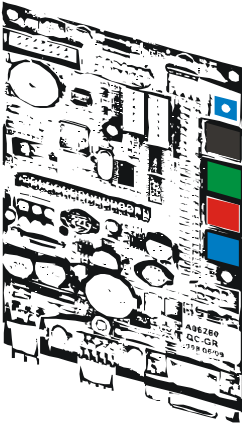
Programming your CX6-SM2 card reader

Your new CX6-SM2 card reader is much easier to program. The programming is divided in different sections called menu. Each menu regroups all parameters having a common function.

The menus are:

- | | |
|----------------------|---|
| 1. Audit | Gives the accounting information of your reader. |
| 2. System Parameters | Enables you to program the basic functions of your CX6-SM2 card reader. |
| 3. Copier Parameters | Enables you to adapt your CX6-SM2 card reader to your copier. |
| 4. Value Parameters | Enables you to set the different values such as copy price. |
| 5. Print Parameters | Enables you to print all the parameters. |
| 6. Firmware Version | Gives you the current firmware version of the reader for reference. |

Follow the instruction on the last line of the display to know which button to press. The buttons are:



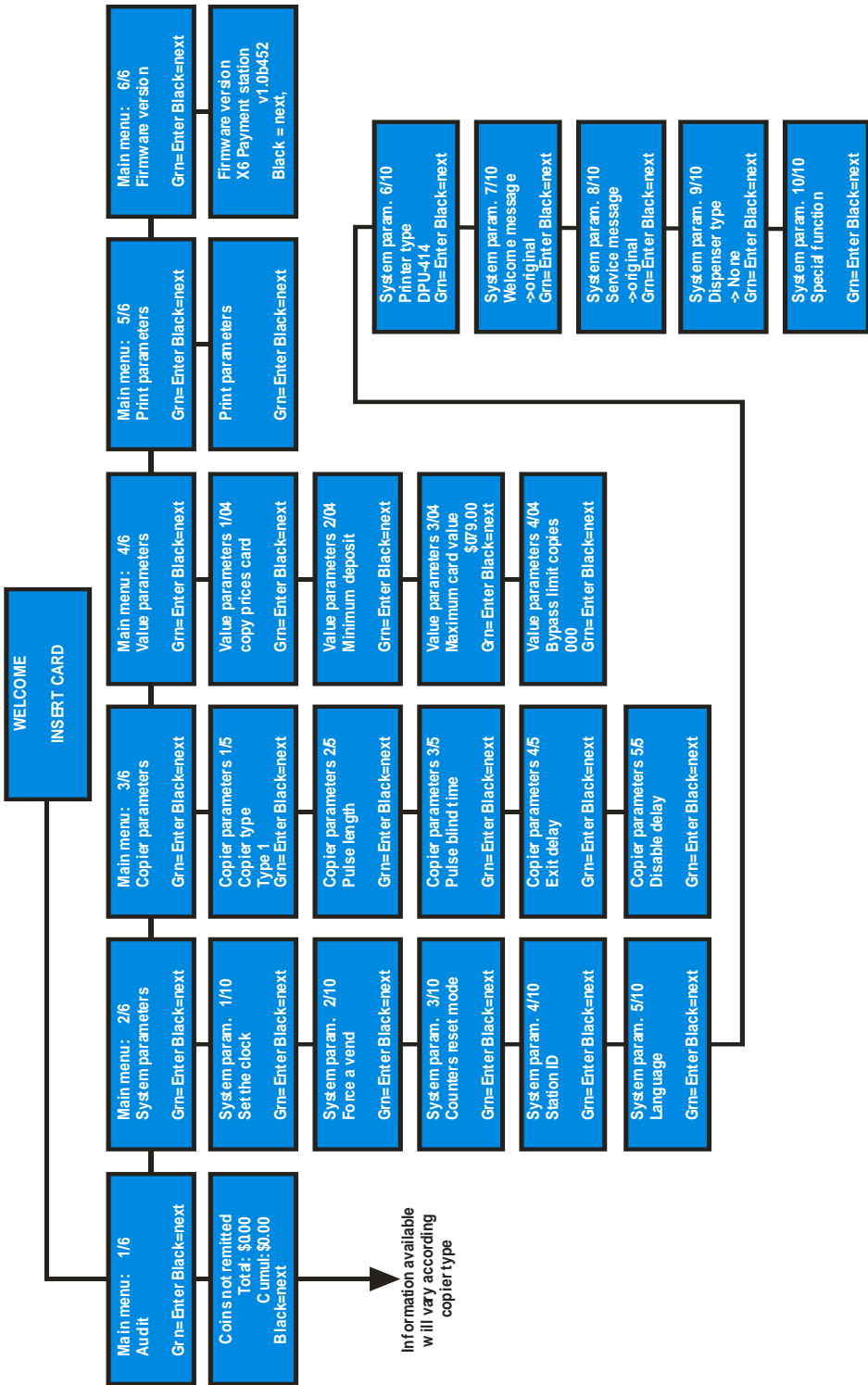
- | | |
|-------|--|
| Black | Browses through the menus |
| Green | Accesses the menu currently on the display. |
| Red | Modifies the value or setting currently shown. |
| Blue | Goes one step back (backspace) |

The next pages will explain in details all the menus and sub-menus.



Please note...

Once a parameter is changed, the display will show you the new setting for one second before moving automatically to the next parameter.



The audit -- # 1 of 6

The information available in the audit section will differ depending on the type of copier.

Some information can be erased manually by pressing on the red button. If you do not wish to erase anything but simply wish to browse through the audit, keep on pressing on the black button as indicated on the last line the display.

The flow chart description on the next page shows a CX6-SM2 card reader attached to a one-price copier (Simplex, black & white, one format).

You can attach a small serial type portable printer. This small printer will give you a hard copy of the audit. A printer kit (p/n: K00120) is available from SEM. It includes the printer, its power supply and the communication harness. An additional Battery Pack (p/n: BP-4005) is also available.

You can also download the audit using HyperTerminal from Windows. HyperTerminal can be found in the Accessories/Communication section of any Windows from 3.1 to Vista. Harness A03330 is required from SEM. The communication protocol is **Serial 9600, N, 8, 1, none**. You also need to go in the **ASCII set up** and click on **Append Line feed**. You can also download the audit on some small hand held pocket computer providing you have the proper harness and program running in it. Hyperterminal is not available on XP, Windows 7 and Windows 8.



Please note...

When you print or download the audit, all counters that have the capability of resetting back to zero will do so automatically providing the Auto-Reset has been enabled.

WELCOME
INSERT COINS

Main menu : 1/6
Audit
Grn=Enter Black=next

Coins not remitted:
Total: \$0.00
Cumul.: \$0.00
Red=clear Black=next

Does not
apply

Cash card sales:
Total: \$0.00
Cumul.: \$0.00
Red=clear Black=next

Bypass copies:
Total: 000
Cumul.: 000
Red=clear Black=next

Does not
apply

Copies counters:
Simplex blk/white
Format A: 0
Black=next

System parameters -- # 2 of 6

This is the menu leading to the different parameters you need to program in your card reader. Those menus apply to the entire operation and are not subject to any change except the type of copier connected to your system. This menu has 10 parameters you need to program. They are:

Set clock

Set time and date on your card reader. This information will appear at the top of any printed audit. The card reader uses the international (or military) time format. 8PM = 20:00. The date is also in the international YYYY/MO/DA format. Please note that your card reader WILL NOT adapt automatically to daylight saving time.

Force a vend

This is a parameter mainly used when the circuit is installed into a coin-op device. In the case of a card reader, it should stay Disabled.

Counter reset mode

Some of the internal counters of the audit can be reset back to 0. Setting this feature at enabled will reset those counters back to zero every time a print-out or a download of the audit is performed.

Station ID

The Station ID is there to identify your card reader should you have a fleet of card readers. The ID would be on top of the printed audit report. The ID is made of up to 10 digits. The characters available are: **A B C D E F G H I J K L M N O P Q R S T U V W X Y Z (space) _ # * - . 0 1 2 3 4 5 6 7 8 9 ; ; =**. This will enable you to enter a more descriptive ID for your card reader such as “**HLT 4 -321**” meaning Health Building, fourth level, room 321.

Languages

The language setting is divided in two. You have the menus interface and the customer interface messages. Both can be in different languages. Languages available are English, French, and Spanish. The station cannot post messages in more than one language at a time. This means it **cannot** alternate between English and Spanish messages (i.e. Insert Card / Inserte Tarjeta).

That feature can be interesting if you are operating your card reader in a predominantly Spanish-speaking area but still want to offer the English programming for your technicians.

Printer type

As this circuit can go into other type of equipment, the printer present can be different. Therefore, you have the choice between DPU-414 (default value for portable serial printer), Axhiom, and CT-S300. Press on the green button to enter the setting. If you enter the wrong setting or connect the wrong printer, nothing will come out.

Welcome message

You have the possibility to create your own welcome message or leave the default one. If you choose to create your own welcome message, you must select custom. Then, you will have to create two lines of message. You have Line 1 and Line 2. The characters available are: {}|}çéàèîôêç !"#\$%&'()*+,-.0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ [¥] ^`abcdefghijklmnopqrstuvwxy z

The two lines of the custom message will in fact be visible only on the first line of the display and will alternate (i.e. --**Welcome to** followed by **Gilbert Law Library**). The message will not self-center. You must calculate the number of characters, including spaces, to center your message.

Service message

It is possible to you to create your own service message in case the unit goes faulty. If you choose to create your own service message, you must select custom. Then, you will have to create two lines of messages. You have Line 1 and Line 2. The characters available are: {}|}çéàèîôêç !"#\$%&'()*+,-.0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ [¥] ^`abcdefghijklmnopqrstuvwxy z

The two lines of the service message will be visible at the bottom of the display. The top of the display will be the error itself (i.e. **MDB comm. Failure**) followed by your message (i.e. **Please call number** and **1-888-334-7569**). The message will not self-center. You must then calculate the number of characters, including space, to center your message.

Dispenser type

Does not apply and should be **none**

Special function

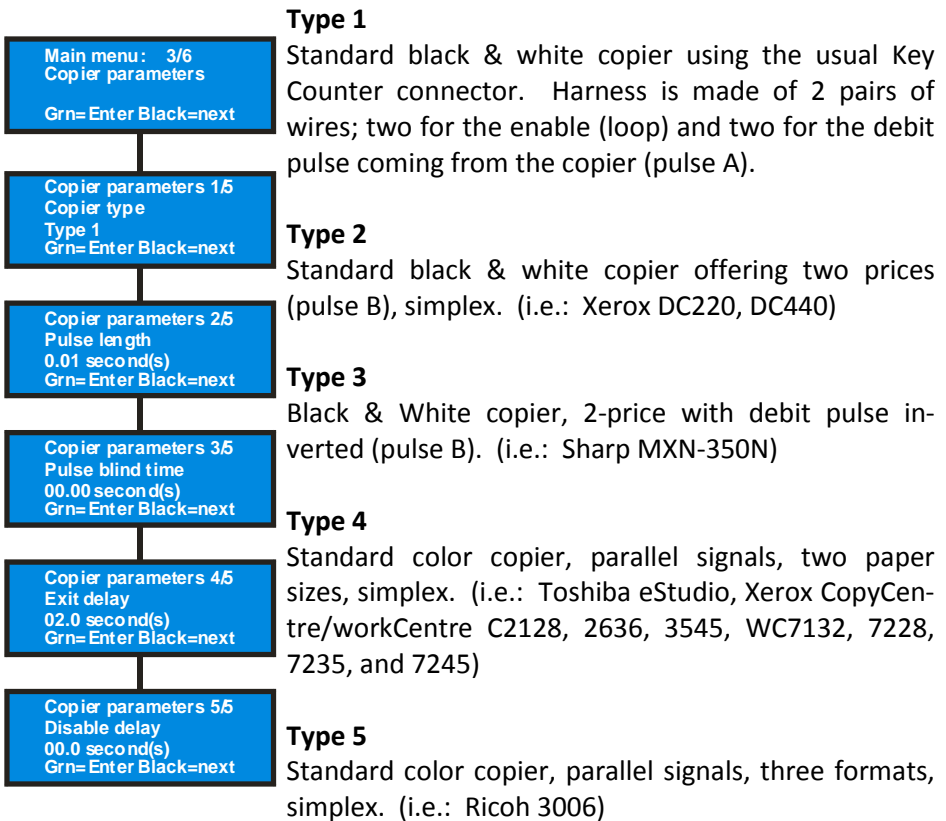
Does not apply. **MUST** stay all zeros.

Copier parameters -- # 3 of 6

The copier parameters menu enables you to adapt your card reader to your copier. The copier type may be followed by other settings you may need to adjust.

The CX6-SM2 card reader offers you an easier way to connect and program your card reader. You just have to program the copier type according to the specifications on the communication harness seen earlier. Programming a copier type other than the one prescribed on the harness may result in an erratic behaviour, including giving out free copies. At the time of printing of this manual, the following types of copiers are available:

Types possible with the Standard interface (see page 4 interface identification):



Type 6

Standard color copier, parallel signals, two formats, duplex.

Type 7

Standard color copier, parallel signals, three formats, duplex.

Type 8

Color copier, parallel signals, three formats, duplex. (i.e.: Sharp ARC250/260, Sharp Interface [Bear/Panther/Cougar])

Type 9

Color copier, parallel signals, three formats, duplex (2 pulses). This type will initiate an additional menu for a time delay for the second pulse on duplex. (i.e.: Ricoh 5560C, 3260C, Savin 7025)

Type 10

Black & White copier, parallel signals, three formats, duplex. (i.e.: Minolta K750)

Type 11

Black & white microfiche reader and printer. Harness is made of 2 pairs of wires; two for the enable (loop) and two for the debit pulse coming from the copier (pulse A). Enable is inverted (NC instead of NO) (i.e.: Minolta MS6000/MS7000)

Type 12

Reserved for internal use.

Type 13

HP FiSH colour

Type 14

Toshiba newer color copier

Type 15

Sharp MX Series with two enables, one for B&W and one for colour

None

Reserved for non-copier application.

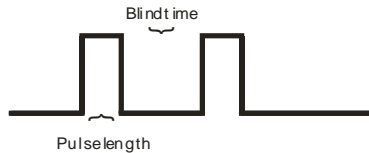
Pulse length

Pulse length is visible only with some types of copiers. Pulse length is the minimum time a debit pulse must last in order to be taken into account by

the card reader. If it is shorter, the card reader sees the pulse but disregards it as a non-valid pulse. It is not necessary to match the pulse length setting with the actual length of the debit pulse coming from the copier. (i.e. Do not set the pulse length to 0.10 if you see that your debit pulse last 100ms. The card reader may miss some pulses. We suggest to keep it the lowest possible. A value between 0.01 and 0.04 will fit most copiers).

Pulse blind time

The pulse blind time is the in-between pulses. Usually, this parameter is set at 0. However, some older copiers may suffer from pulse bouncing. If so, the card reader sees the bouncing and debits a copy for each bounce. If you wish to eliminate this, set a blind time. The card reader will see the bouncing but will not debit for the duration of the blind time. Be careful not to set a time too long. If the blind time is too long, the card reader may miss genuine pulses coming in fast on multiple copies. For example, an 80-copy minute copier would send a debit pulse every 750 milliseconds. If you set a blind time too high, you will miss genuine debit pulse thus giving out free copies.



Exit delay

The exit delay is the time lap between the moment the customer pushes on the eject button and the moment the card comes out of the reader. The 02.00 default value will fit most copiers. However, some copiers send their debit pulse a little bit late in the process thus forcing you to set an exit delay a little longer. From the moment, the customer pushes on the eject button, any debit pulse coming from the copier will be deducted from the card. Exit delay is inoperative in KO-MI 1 and 2 as the copier takes over the control of the card reader.

Disable delay

The disable delay is a small time period that will keep the loop closed after the eject button has been activated by the customer. This delay is there to let the copier finish its copy. Some copiers on the market will simply stop the entire process of making the copy just at the moment the loop opens, thus creating a paper jam. You then have to set a delay long enough so that the copy can come out of the copier. However, do not set that delay too long as you will then have the problem of starting a second copy –that will eventually jam- for the price of one.

Types possible with the Smart Interface *(see page 4):*

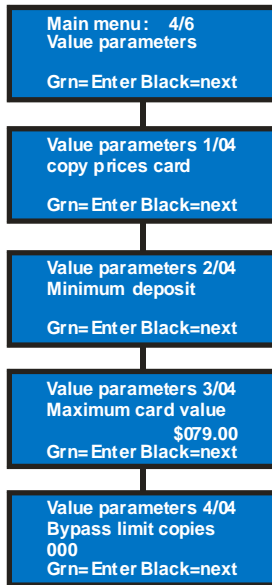
All copiers offering serial communication such as:

- Konica-Minolta Biz-Hub Vendor 1 & Vendor 2
- Canon G1 Interface
- Kyocera-Mita Task-Alfa

Only those three types of copiers will also be visible in the copier types when programming your vend station. You cannot connect to a Type 1 copier with the Smart Interface and vice-versa. You cannot connect to the above-mentioned types of copier with the standard interface.

Value parameters -- # 4 of 6

This is where you will set the different value parameters. Value refers to anything related to money or having a monetary impact. There are four sub-menus.



Copy prices card

This is where you will set the vend price(s) for your copy(ies). The number of prices depends on the copier type you have programmed previously. Copy identification is clearly visible on the display (i.e. simplex, black & white, format A; simplex, color, format A, etc.).

Pressing on the green button will make the first digit blinking. Change the value using the red button. Move digit with the green until your done.

Minimum deposit

Minimum deposit is a feature that sometimes is necessary on some copiers, black & white or color.

Some copiers are capable of sending a different signal either for ledger size or for color. However, this signal arrives too late to the card reader and there is no way the copy can be stopped if the customer does not have enough credit on the card to cover the higher cost. In other words, the customer would receive a premium copy for the price of a regular one. When this is the case, the way to counteract this problem is by requesting the cus-

tomers to have sufficient credits on the card so that it covers all the possibilities. If the copy purchased is a regular one, the proper amount will be debited from the card.

You have the choice between NONE, FIXED AMOUNT or NUMBER of COPIES. Fixed amount will enable the copier only if the card inserted contains sufficient credits. Number of copies will enable the copier only when the card inserted has a credit equal to the price of a basic copy times the number you entered (i.e. $15\text{¢} \times 2 =$ enables copier at 30¢ , the card must have a minimum of $\text{€}30$ in credit).

Maximum card value

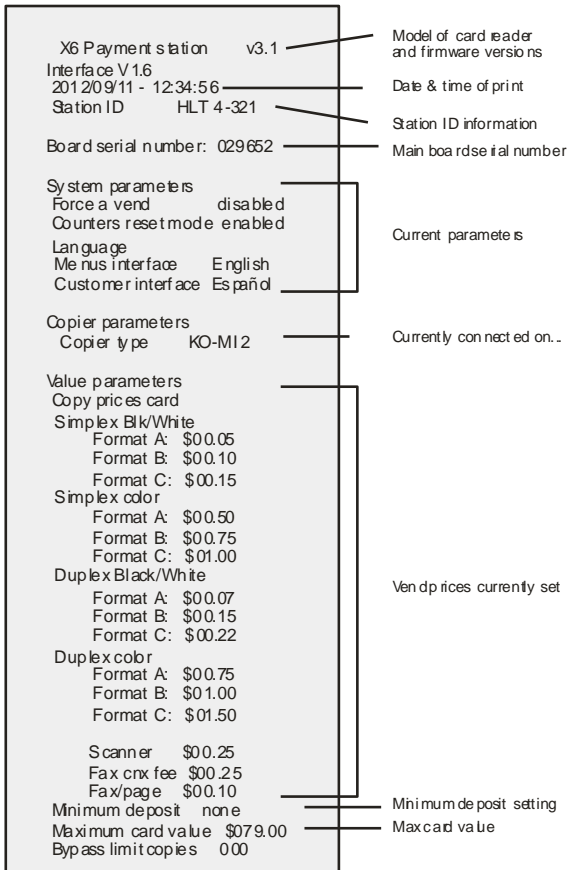
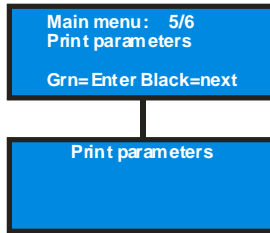
Maximum card value is the maximum amount a card can hold in credit. All cards having more credits than the value indicated will be refused.

Bypass limit copies

Does not apply.

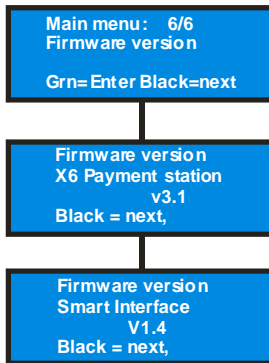
Print parameters -- # 5 of 6

Print parameters function enables you to print the actual settings of your card reader. Printing is achieved via the DB9 serial port on the back of the reader (see page 3). If you have your own serial printer, set it at 9600, N, 8 1. If the printer is not correctly attached, or configured, or if you have the improper cable, the display will prompt a warning. Parameters can also be downloaded on HyperTerminal in Windows (requires SEM cable # A03330).



Firmware version -- # 6 of 6

Firmware version is the current version of firmware in your card reader. It is used as a reference for technical support. If you have a Smart Interface instead of the standard interface, the firmware version will also be visible. The standard interface will not prompt a firmware version.



**Technical Support & Information: SEM Inc. www.sem.ca 1-888-334-7569
support@sem.ca**

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