



Introduction



The *MIC* is an miniature bar code multi-interface controller.

It's very small

We've used surface mount technology to produce a bar code controller that measures only 60 x 50 x 22 mm.
(2,4 x 1,97 x 0,9 inches)

It's very powerfull and fully-programmable

Because it combines the ultimate RISC processor technology with our software know-how.



Description



1) General characteristics

Multi-function

The *MIC* is an advanced decoder of bar codes and magnetic stripes with a powerful communication interface that is capable of adapting the data format so that it transmits the data exactly as is required by a given application.

Multi-inputs

The universal input port of the *MIC* (sub-D9 pins) recognize automatically the following devices (see figure 1):

- 1- Undecoded Laser
- 2- Pen (Light pen, optical badge reader)
- 3- RS232C Equipment (laser projection scanner, in counter scanner, electronic scale, PDT, ...)
- 4- Magnetic Stripe Reader

Multi-interfaces

The *MIC* integrate the following popular interfaces:

- 1- Keyboard - wedge communication
- 2- RS232C (using the RS232 cable)
- 3- TTL Serial ASCII
- 4- TTL Wand Emulation
- 5- OCIA

Multi-programming mode

The *MIC* can be programmed in 3 ways:

- 1) Through the keyboard of a Windows™ PC
- 2) Downloading a configuration using a PC Windows™ program
- 3) Bar codes menu

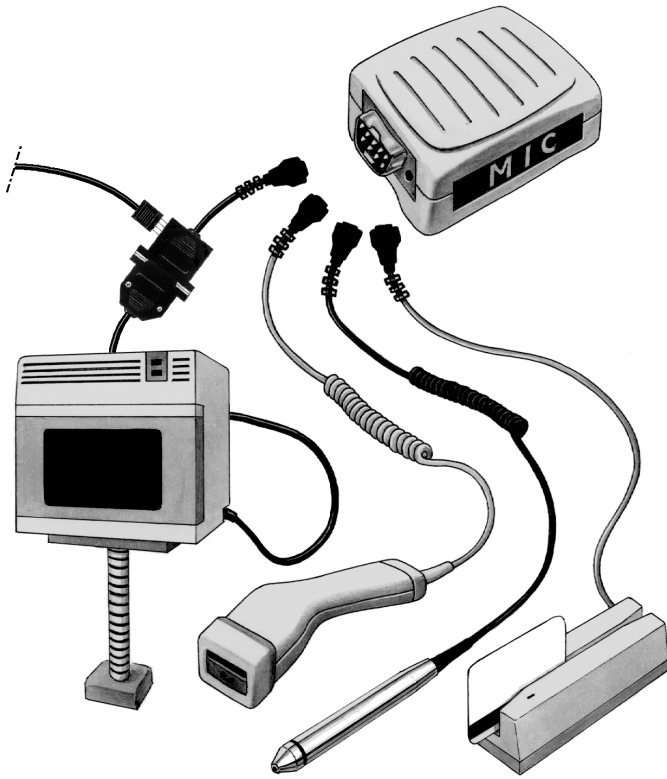


Figure 1



2) Input port

The connector is a SUB-D 9 pins male.

The pin assignment for each input device must be:

a) **Undecoded laser**

- 1 - Start of scan
- 2 - Data
- 3 - Good read led
- 4 - N/C
- 5 - Trigger signal
- 6 - Enable laser
- 7 - GND
- 8 - GND
- 9 - Vcc (DC. 5V.)

b) **Pen**

- 2 - TTL Data Signal
- 7 - GND
- 8 - GND
- 9 - Vcc (DC.5V.)

c) **RS232 Equipment**

- 1 - RD (Received Data Input)
- 2 - GND *
- 3 - TD (Transmitted Data Output)
- 4 - RTS (Request to Send Output)
- 5 - N/C
- 6 - GND *
- 7 - GND *
- 8 - GND *
- 9 - Vcc (DC.5V.)

* **Note:** All the GND pins (2, 6, 7 and 8) must be connected together.



d) Magnetic Stripe Reader

- 1 - Clock ISO 1 or 3
- 2 - Card selection
- 3 - GND
- 4 - Data ISO 2
- 5 - Clock ISO 2
- 6 - Data ISO 1 or 3
- 7 - GND
- 8 - GND
- 9 - Vcc (DC.5V.)

3) Interface port

The following interfaces are integrated:

a) **Keyboard - wedge emulation (using an Y-xx cable)**

The *MIC* must be connected between keyboard and terminal or PC with an “Y” cable.

Data is transmitted to the terminal in a format that emulates signals from the terminal's keyboard.

b) **RS232C (using the single/dual RS232C output cable, ref. M-01)**

The pin assignement of the DB25 female connector single RS232 output cable is:

- 2- TX Output
- 3- RX Input
- 4- RTS Output
- 5- CTS Input
- 7- GND
- 13- Vcc (DC.5v) Output/Input



c) TTL Serial ASCII

The RJ45 output port pin assignment is:

- 4 - RX Input
- 8 - TX Output
- 6 - GND
- 7 - CTS Input

d) TTL Wand emulation

The RJ45 output port pin assignment is:

- 5 - Vcc (DC 5v.) Input
- 6 - Ground
- 7 - Data Pen Bar Low
- 8 - Data Pen Bar High

4) Physical characteristics

Length: 2,4 x 2 x 0,9 (inches) / 60 x 50 x 22 (mm)

Weight: 1,8 oz (50 g)

Electrical characteristics: 5v. \pm 10%, 30 mA.

Case: ABS.



Installation



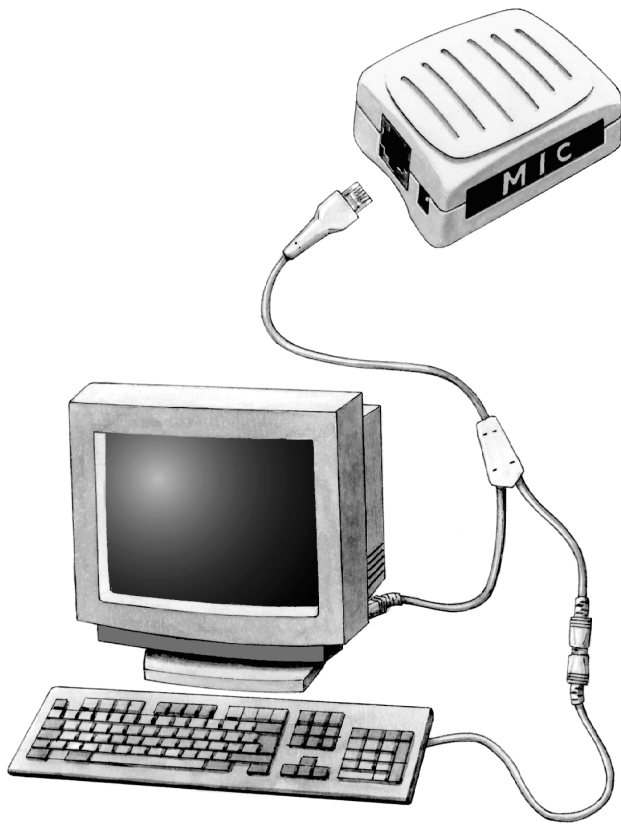
1) Keyboard Wedge mode

The *MIC* must be connected between the keyboard and the terminal with the “Y” cables series (figure 2)

The list of terminals supported with the required cables is enclosed to this manual.

To install the *MIC* in keyboard wedge mode follow these steps:

- 1 - Turn off power to the terminal.
- 2 - Install the correct *MIC* cables plugging the 8 pins modular connector to the port labeled "interface".
- 3 - Disconnect the keyboard from the terminal and plug the connectors of the *MIC* cables in the keyboard and display.
(See next diagram)
- 4 - Connect the power supply, if necessary. Power up the host.
The *MIC* will beep and after a short delay, will beep again.
- 5 - Type on the keyboard to verify that the *MIC* is transparent to the system.
- 6 - Now, the *MIC* is ready to work or, if necessary, to be configured.



Installation

Figure 2



2) RS232C Mode

The installation of the *MIC* requires the M-01 cable and a power supply (figure 3). See page 2 - 5 for pin assignment.

To install the *MIC* in RS232C Mode follow these steps:

- 1 - Turn off power to the terminal
- 2 - Install the M-01 cable plugging the 8 pins modular connector to the port labelled "interface"
Plug the jack connector of the power supply.
- 3 - Power up the terminal and configure RS232C MIC parameters.

NOTE: To update the configuration, *MIC* should be powered off and on.



Figure 3



Configuration



When you install *MIC* for the first time, all its parameters set are in the default position. If this configuration doesn't correspond with your application, you must configure it.

There are three main ways to configure a *MIC* unit:

- I) Via an IBM PC-AT KEYBOARD, with the standard Windows™ based program "NOTEPAD".
This way, once the *MIC* is in this mode, it will provide the options on your screen via menus and you will select the desired one.
No special software or hardware is required, just connect *MIC* in wedge mode.
- II) Via the RS232 port of a IBM PC-AT, with the special Windows™ based program MICCFG.
This user friendly software allows to updownload configurations to a large amount of MICs in a short time.
No reader is required, just this software and a RS232 cable (ref. M-05)
- III) Via a BARCODE menu. The user must read bar codes to configure the *MIC*. A bar code reader is required with one of the following interfaces: Laser, RS232 or Light pen emulation.

Once adjusted, the new parameters are saved in an Eeprom (non volatile memory) which keeps the parameters values even if power-off.



I) PC KEYBOARD QUICK CONFIGURATION

You can program your *MIC* using your PC-AT keyboard, with this method the configuration is much easier and eliminates the need of scanning a list of bar codes.

First connect an undecoded laser or a light pen with *MIC* and install it in an IBM Compatible PC AT, then run "*Note Pad*", a Windows™ environment program, and finally read the bar code "*Enter Keyboard Configuration*", now you will begin the keyboard configuration.

It can be also possible to begin the keyboard configuration by pressing **CRTL** for a few seconds and without releasing it, pressing **ALT + SPACE**. No reader must be connected to the input port.

Configuration

_____ **Enter keyboard configuration** _____



Once you have read this "*Enter Keyboard Configuration*" bar code, you'll see the next menu in your PC monitor.

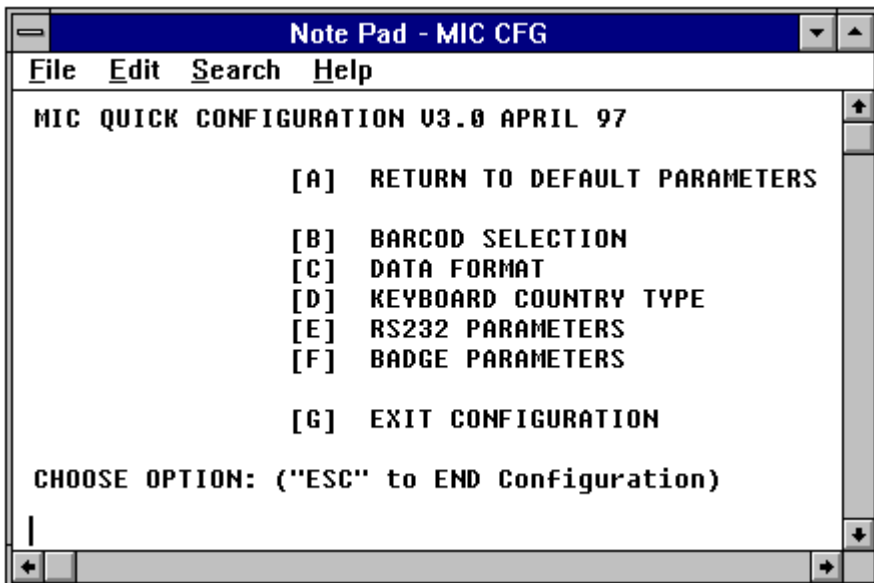
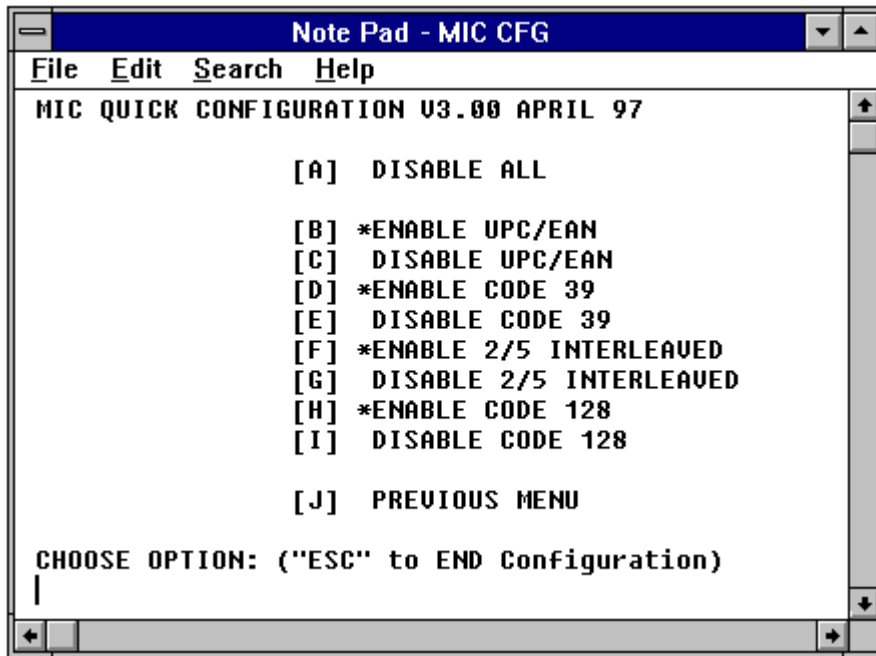


Figure 4

This is the main menu, all the most common parameters to configure your *MIC* are available through this configuration screen. To choose an option, just press the letter that is between brackets [] besides the corresponding family of parameters, so you'll get to new sub-menus (see example in figure 5 when you press 'B'), see also figure 6 for input data description).



Configuration

Figure 5

Figure 5 is a typical configuration screen, the asterisks indicate the selected parameters and only by pressing a letter you change to a new selection. Finally, press "ESC" and all the new parameters are saved in the non volatile memory.

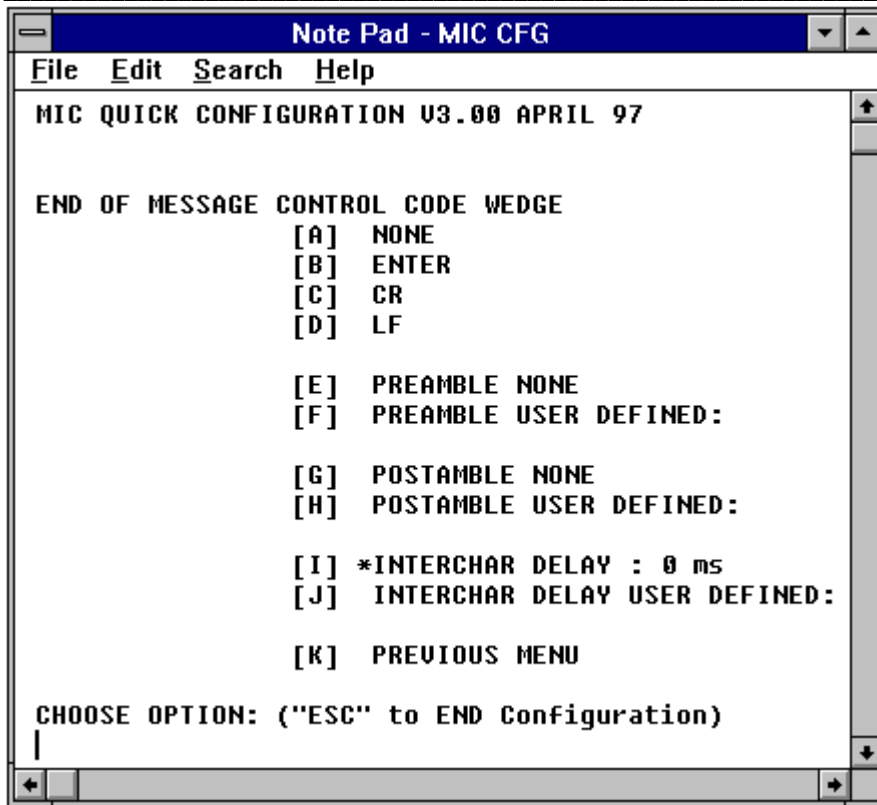


Figure 6

In figure 6 there is a configuration screen with input data request. For example, if you want to define an intercharacter delay, you have to press the [J] letter and then type two numbers from 00 to 99 (The duration of the delay is composed of a number of 5 ms increments). For "Postamble User Defined" special parameter, after pressing [H] key, you can add up to 8 programmable suffixes, for each suffix you have to type its hexadecimal value (Appendix C), if you want to program less than 8 suffix, press [ESC] to finish suffix input data. All types of similar parameters in the keyboard configuration have to be programmed in the same way.



II) DOWNLOADING RS232 CONFIGURATION MODE

It is possible to configure the *MIC* via a Windows™ PC program called **MICCFG**.

This program provides all the features of this manual without the need to use any reader, just simply connect the *MIC* to the RS232 port of your PC (MIC M-05 cable is required).

MICCFG allows to upload configurations from *MIC* to PC, modify and download them again to *MIC*.

MICCFG provides the possibility to download special configurations when large quantities of MICs require to be configure. Just simply fix your "Master" configuration and connect the "*Blank MIC*" to the RS232 of your PC. After few seconds your *MIC* will be configured.

All the possible explanations for the options in the MICCFG program can be taken from this manual.

MICCFG is free distributing, its aim is to make a user friendly programming of *MIC*.





III) BARCODE MENU

1) STARTING BARCODE CONFIGURATION

If you want to configure the *MIC* using barcode menus, first connect a reader to *MIC* and install it in a terminal as described in "*Installation*", then you only have to scan the new desired parameters.

The default parameters are mentioned all along the "Barcode Configuration" section with a "*" beside the corresponding bar code.

Configuration under RS232 device

To configure the *MIC* with RS232 devices the ENTER/EXIT RS232 configuration barcode should be read before starting configuration.

Once you have changed all the parameters you need to read again this code in order to keep on working.

When you are in this mode a special "End selection RS232 MODE" must be used in the numeric keypad appendix D.

ENTER/EXIT RS232



AUTO RS232 CONFIGURATION

To match the *MIC* with the RS232 device read the following label just after the second beep when the *MIC* is powered.(You have 3 secondes to read this label)

AUTO RS232





2) SYSTEM COMMAND

Return to default

This command returns the reader to the original default configuration



Modify Parameters

This command is used to test new parameters temporarily without storing them in permanent memory. When you power down the *MIC*, it returns to the last set of permanent parameters stored in memory.



Command



Update modified parameters

This command stores in permanent memory the modifications done with "*Modify Parameters*".



Recall last configuration

This command returns the *MIC* from modifications to the last management stored parameters, without necessarily having to power down the *MIC*.



Display Prom version

By scanning this label, the *MIC* will display the prom version.





Beeper activation

Activate or deactivate the beeper.

*** Activated**



Not Activated



Laser - off mode

If you use "Until Time Out" the laser remains on while the trigger is pressed, the laser turn off only when you release the trigger or when the time out elapses. In you use "After Good Read" the laser turn off after a good read, when you release the trigger or when the time out elapses. It is also possible to select a CCD device with laser emulation.

Command

*** LASER**



CCD



*** Until Time Out**



After Good Read





Laser timeout

The time that the laser remains on while trying to read can be controlled. When this time is elapsed the laser will be off until a new trigger is produced.

When NO TIMEOUT is selected the laser will remain always active.

NOTE: Most of the hand lasers are not designed to work with the laser always active. Be carefull when using this parameter.

When defining your own laser timeout the step used is 6 seg.

(ie: an input of 8 will generate $6 \times 8 = 48$ seg. timeout).

Max. timeout is: $99 \times 6 = 9$ min and 54 seg.

(NO TIMEOUT)



* **6 s**



12 s



24 s



42 s



102 s



User Defined





No read message

If this option is activated a NO READ message is sent in the selected *keyboard country type* when the laser “times out”.

Active



* No Active



Command

Free-hands mode

This option is used with lasers operating in a stand for “free-hands” operation. Mic will generate a pulsing laser to give the possibility to operate in free-hands mode.

When enabled is recommended to configure the laser-off mode as UNTIL TIMEOUT. Under configuration stand operation is disabled, that means that the trigger should be used.

* Pulsing scan Disabled



Pulsing scan Enabled





3) WEDGE PROGRAMMING

Terminal type

To program a terminal type, scan "terminal type", then scan the two digit terminal types in the appendix D from configuration list that corresponds to your terminal or PC.



Keyboard country type

Scan the applicable keyboard country type label below that corresponds with your computer.

* **US**



UK



German



French



(.../...)



Italian



Spanish



Norwegian



Belgian



Interfaces



End of message control codes

MIC sends a control code after each message, which emulates a command key of the keyboard, allowing automatic entry data. You can add any control character by reading "User defined" and then a code of the "Control code table" in Appendix B.

* Enter



Field Exit



None



CR



Tab



LF



Field Advance





F1



F3



F5



F7



User Defined



F2



F4



F6



F8



Interfaces



Caps Lock activation

In order to transmit alphabetical characters in correct case, *MIC* must be set for the caps lock position of the terminal keyboard to which it is interfaced. (MIC will not check this option if Auto Caps Lock detection is active)

*** NOT Active**



Active



Auto Caps Lock Detection

When it is impossible to determine the position of the Caps, MIC is able to detect its position automatically if this option is set. (Only available with AT and PS2 compatible).

*** NOT Active**



Active





Alt Mode activation

When this mode is activated, the characters are sent to the keyboard like decimal codes.

For example: "A" letter is sent like ALT + 65.

*** NOT Active**



Active



Numeric keypad activation

When this mode is activated, the numeric characters are sent via the numeric keyboard.

*** NOT Active**



Active



NOTE: The numeric keyboard should be active.



Control character activation

"Control Character Activation" allows MIC to send characters below 20H with the following format:

If it is active, the character is sent to the keyboard like CTRL + X, X is "A" for 00H, "B" for 01H, ...

If "Control Character Activation" is not active, MIC will send the received character to the keyboard like a control code. For example, if 00H is received, it will emulate a "right arrow", 01H will emulate a "left arrow", and so on. See appendix A.

*** NOT Active**



Active





4) **RS 232 OUTPUT**

When this option is chosen, the decoded data is transmitted via RS232. A special cable M-01 is required.



The RS232 parameters for the output interface are the same as for the input interface.



5) WAND EMULATION

_____ **Same as read barcode** _____

When this option is chosen, the decoded data is transmitted like the read barcode.



_____ **Different as read barcode** _____

When this option is chosen, the decoded data is transmitted like Code 39.



_____ **High speed transmission** _____

*



_____ **Low speed transmission** _____





6) BARCODE SELECTION

Barcode activation

Read the bar code(s) corresponding to the code formats to be activated or deactivated.

Disable all



* **Enable CODE39**



Disable CODE39



* **Enable UPC/EAN**



Disable UPC/EAN



(.../...)

Barcodes



Enable CODABAR



*** Disable CODABAR**



*** Enable CODE128**



Disable CODE128



Enable 2/5 Interleaved



*** Disable 2/5 Interleaved**



Enable 2/5 Standard



*** Disable 2/5 Standard**



(.../...)



Enable 2/5 Matrix



*** Disable 2/5 Matrix**



Enable AMES



*** Disable AMES**



Enable CODE93



*** Disable CODE93**



(.../...)



Enable Code MSI



*** Disable Code MSI**



Enable PLESSEY



*** Disable PLESSEY**



Enable TELEPEN



*** Disable TELEPEN**



Enable CODE 11



*** Disable CODE 11**





Barcode identifiers activation

A barcode identifier is a character which can be transmitted as a preamble before any bar code or as a postambles after any barcode. The characters are:

<u>CODES</u>	<u>ID</u>	<u>CODES</u>	<u>ID</u>	<u>CODES</u>	<u>ID</u>
Code 39	M	2/5 I	I	Code 128	C
EAN 13	F	UPC A	A	EAN 8	F
UPC E	E	EAN 13 add 2	F	EAN 13 add 5	F
UPC A add 2	A	UPC A add 5	A	EAN 8 add 2	F
EAN 8 add 5	J	UPC E add 2	E	UPC E add 5	E
Code TELEPEN	B	CODABAR	N	Code 93	G
Code 11	H	Code MSI	M	Code PLESSEY	P
2/5 Std (4 bars)	R	2/5 Std (6 bars)	H	AMES	m
2/5 Matrix	n				

If you choose AIM ID, the scanner transmits AIM symbology identifiers. In each barcode section, you can define your own ID character.

Enable Barcode ID



* Disable Barcode ID



Barcodes



ID TRANSMISSION

* Transmitted before barcode



Transmitted after barcode



* AIM ID NOT Active



AIM ID Active



MINIMUM LENGTH

This option avoid to read barcodes with a length less than the user defined.

NOTE: When no minimum length checking is desired it should be fixed to 00.

Minimum length





7) CODE 39 PARAMETERS

Code selection

Activate or deactivate the reading of Code 39.

*** Enable CODE39**



Disable CODE39



Standard / Full ASCII

The full ASCII Code 39 permits the transmission of the 128 characters of the ASCII table. Every ASCII character is the result of 2 code 39 characters. *For example, the characters /D represents a \$.*

*** Standard**



Full ASCII





Start / Stop transmission

This function activates the transmission of the start and stop characters with the data message.

*** Start/Stop NOT Transmitted**



Start/Stop Transmitted



Check digit parameters

In case of high level security required, a check digit can be integrated at the last position of a code and checked before the transmission.

You can use Modulo 43, CIP (used in the French Pharmaceutical industry), or Italian (used in the Italian Pharmaceutical industry).

*** Not Calculated**



Mod 43



CIP



Italian





Check digit transmission

Activate the transmission of the check digit.

NOT transmitted



*** Transmitted**



Barcode identifier

You can activate the default barcode identifier or define one.

*** Default**



User Defined



Barcodes



8) INTERLEAVED 2 OF 5 PARAMETERS

Code selection

Activate or deactivate the reading of Interleaved 2 of 5.

Enable I 2 of 5



*** Disable I 2 of 5**



Check digit parameters

The Interleaved 2 of 5 check digit can be used as the last encoded character of a label; it is specially recommended when using variable length. You can transmit this character or not.

*** Not Calculated**



Calculated



Check Digit NOT transmitted



*** Check Digit Transmitted**





Code length

In order to minimize the chance of misreads, interleaved 2 of 5 codes are often restricted to one or a few fixed lengths. It is possible to fix up to 3 lengths. Scan length 1, 2 or 3 and then using the numeric keypad in Appendix D compose the length. The decoder can be configured to read and transmit all lengths, in this case, it is recommended to activate a check digit.

Length 1



Length 2



Length 3



*** Variable**



Barcode identifier

It is possible to activate the default barcode identifier or define one.

*** Default**



User Defined





9) STANDARD 2 OF 5 PARAMETERS

Code selection

Activate or deactivate the reading of standard 2 of 5.

Enable STD 2 of 5



*** Disable STD 2 of 5**



Check digit parameters

The standard 2 of 5 check digit can be used as the last encoded character of a label; it is specially recommended when using variable length. You can transmit this character or not.

*** Not Calculated**



Calculated



NOT transmitted



*** Transmitted**





Start / Stop type

Two types of start/stop are used with 2/5 standard, 4 bars and 6 bars. MIC can use both.

6 BARS



*** 4 BARS**



Code length

In order to minimize the chance of misreads, standard 2 of 5 codes are often restricted to one or a few fixed lengths.

Is is possible to fix up to 3 lengths. Scan length 1, 2 or 3 and then using the numeric keypad in Appendix D compose the length. The decoder can be configured to read and transmit all lengths, in this case, it is recommended to activate a check digit.

Length 1



Length 2



Length 3



*** Variable**



Barcodes



Barcode identifier

It is possible to activate the default barcode identifier or to define one.

*** 6 BARS None**



6 BARS User Defined



*** 4 BARS None**



4 BARS User Defined





10) MATRIX 2 OF 5 PARAMETERS

Code selection

Activate or deactivate the reading of Matrix 2 of 5.

Enable Matrix 2 of 5



*** Disable Matrix 2 of 5**



Check digit parameters

The Matrix 2 of 5 check digit can be used as the last encoded character of a label; it is specially recommended when using variable length. You can transmit this character or not.

*** Not Calculated**



Calculated



NOT transmitted



*** Transmitted**



Barcodes



Code length

In order to minimize the chance of misreads, Matrix 2 of 5 codes are often restricted to one or a few fixed lengths.

It is possible to fix up to 3 lengths. Scan length 1, 2 or 3 and then using the numeric keypad in Appendix D compose the length. The decoder can be configured to read and transmit all lengths, in this case, it is recommended to activate a check digit.

Length 1



Length 2



Length 3



*** Variable**



Barcode identifier

It is possible to activate the default barcode identifier or to define one.

*** Default**



User Defined





11) UPC / EAN PARAMETERS

Code selection

Activate or deactivate the reading of the different kinds of UPC/EAN.

* **Enable EAN 13**



Disable EAN 13



* **Enable EAN 8**



Disable EAN 8



* **Enable UPCA**



Disable UPCA



* **Enable UPCE**



Disable UPCE



Barcodes



Check digit parameters

It is possible to transmit the check digit in all kinds of UPC/EAN or not transmit it.

EAN 13 CHECK DIGIT

* Transmitted



NOT Transmitted



UPC A CHECK DIGIT

* Transmitted



NOT Transmitted



EAN 8 CHECK DIGIT

* Transmitted



NOT Transmitted





UPC E CHECK DIGIT

*** Transmitted**



NOT Transmitted



System number UPC A

Activate or deactivate the transmission of the UPC A system number character.

NOT transmitted



*** Transmitted**



I S B N Format

*** NOT transmitted**



Transmitted



*** Add-on 378/379 non active**



Add-on 378/379 active





Add on digits

This function allows the reading of 2 or/and 5 digits supplements. If you choose "Add on required" all UPC/EAN labels that were scanned must have a supplement, if you chose "Add on not required", it's not necessary that all codes have supplement but it will be transmitted if it is present.

* Disable Add-on Digits



2 Char. Add-on ONLY



5 Char. Add-on ONLY



2 or 5 Char. Add-on



Add on Required



* Add on NOT Required





UPC / EAN Conversion

It is possible to convert UPC A to EAN 13 by transmitting an extra leading zero before the bar code, and it is also possible to convert UPC E to the 12 digits equivalent UPC A.

UPC A = EAN 13



UPC E = UPC A



* **UPC A = UPC A**



* **UPC E = UPC E**



System number UPC E

Activate or deactivate the transmission of the UPC E number system character.

NOT transmitted



* **Transmitted**





Barcode identifier

You can activate the default bar code identifier or define one.

EAN 13 Identifier

* Default



User Defined



EAN 13 ADD 2 Identifier

* Default



User Defined



EAN 13 ADD 5 Identifier

* Default



User Defined





EAN 8 Identifier

* **Default**



User Defined



EAN 8 Double Identifier

* **Not active**



Active



EAN 8 ADD 2 Identifier

* **Default**



User Defined



EAN 8 ADD 5 Identifier

* **Default**



User Defined



Barcodes



UPC A Identifier

* **Default**



User Defined



UPC A ADD 2 Identifier

* **Default**



User Defined



UPC A ADD 5 Identifier

* **Default**



User Defined





UPC E Identifier

* Default



User Defined



UPC E ADD 2 Identifier

* Default



User Defined



UPC E ADD 5 Identifier

* Default



User Defined



Barcodes



12) CODE 128 PARAMETERS

Code selection

Activate or deactivate the reading of Code 128.

*** Enable Code 128**



Disable Code 128



Control code parameters

This allows the emulation of control keys such as special function keys, tab or back space, by reading bar code labels composed of specially defined dual character combinations.

These control codes can be activated either when in a separate label (see Appendix B), or when embedded in a label, usually as the last two characters (see *Command Translation Table* in Appendix A).

*** Control Codes NOT Embedded**



*** Control Codes NOT Active**





Control Code Embedded



Control Code Active



Barcode identifier

You can activate the default bar code identifier or define one.

CODE 128 Identifier

*** Default**



User Defined



Barcodes



13) CODABAR PARAMETERS

Code selection

Activate or deactivate the reading of Codabar.

Enable Codabar



* **Disable Codabar**



Check digit parameters

Codabar can be used with or without check digit and if this one is used, it is possible to transmit it or not.

* **Not Calculated**



Calculated



Check Digit NOT transmitted



* **Check Digit Transmitted**





CLSI Activation

Libraries in the CLSI System used in the United States, require insertions of spaces within the 14 character label.

For example, the label "388811128161" is transmitted:
"3 888 1112 8161".

*** CLSI NOT Activated**



CLSI Activated



Start / Stop transmission

The start/stop transmission code can be transmitted or not transmitted according to this selection.

*** ST/SP NOT Transmitted**



ST/SP Transmitted



Barcodes



Concatenation

Allows to read two adjacent barcodes in a single read and transmit them like one barcode. Only the first Start and the last Stop character are transmitted.

Enable the possibility to read concatenated barcodes.

*** NOT Active**



Active



When this option is enabled only concatenated barcodes can be read. If disabled, both concatenated and single barcodes can be read.

*** NOT Requested**



Requested



Concatenation Start / Stop

Certain START/STOP combinations can be selected in order to interpret two barcodes as concatenated.

Used by the American Blood Commission in which left concatenated barcode must start by: A, B, C, or D and stop by D character. The right concatenated barcode must start by: D and stop by: A, B, C, or D.

ABC Active





The first label stop character must match the second label start character

Same Start / Stop Active



The first label stop character and the second label start character are not checked.

Start / Stop Not Checked



Barcode identifier

It is possible to activate the default bar code identifier or to define one.

CODABAR Identifier

* **Default**



User Defined



Barcodes



14) CODE 93 PARAMETERS

Code selection

Activate or deactivate the reading of Code 93.

Enable Code 93



*** Disable Code 93**



Barcode identifier

It is possible to activate the default bar code identifier or to define one.

CODE 93 Identifier

*** Default**



User Defined





15) CODE MSI PARAMETERS

Code selection

Activate or deactivate the reading of Code MSI.

Enable Code MSI



*** Disable Code MSI**



Check digit parameters

Code MSI can be used with or without check digit and if this one is used, it is possible to transmit it or not.

*** Not Calculated**



Modulo 10



Double Modulo 10



Barcodes



Check digit transmission

*** Check Digit Not Transmitted**



Check Digit Transmitted



Barcode identifier

It is possible to activate the default bar code identifier or to define one.

CODE MSI Identifier

*** Default**



User Defined





16) CODE PLESSEY PARAMETERS

Code selection

Activate or deactivate the reading of Code PLESSEY.

Enable Code PLESSEY



* Disable Code PLESSEY



Barcode identifier

It is possible to activate the default bar code identifier or to define one.

CODE PLESSEY Identifier

* Default



User Defined





17) CODE TELEPEN PARAMETERS

Code selection

Activate or deactivate the reading of code TELEPEN.

Enable Code Telepen



*** Disable Code Telepen**



Numeric Mode Activation

You can activate or deactivate the numeric mode of code TELEPEN.

Enable Numeric Mode



*** Disable Numeric Mode**



Barcode identifier

It is possible to activate the default bar code identifier or to define one.

*** Default**



User Defined





18) CODE 11 PARAMETERS

Code selection

Activate or deactivate the reading of Code 11.

Enable Code CODE 11



* Disable Code CODE 11



Barcode identifier

It is possible to activate the default bar code identifier or to define one.

CODE 11 Identifier

* Default



User Defined





19) RS-232 PARAMETERS

NOTE: To get these parameters updated the *MIC* should be powered off and on after changing them.

See section III point 1 for **AUTO RS232** configuration

Baud Rate

A baud rate is a unit that measures the speed with which information are transferred. The baud rate of the *MIC* must equal the baud rate of the RS-232 device. Select the rate that matches the device requirements.

38400



19200



*** 9600**



4800



2400



1200



600



300





Data Bits

RS-232 serial communication requires ASCII data to be transmitted in either 7 or 8 data bits. Select the option that matches the device requirement.

*** 8 Data Bits**



7 Data Bits



Parity

Parity is an additional bit that makes the number of bits in the ASCII code odd or even. The MIC's parity must match the RS-232 scanner or device.

*** None**



Even



Odd



Others



Stop bits

RS-232 serial communication requires one or two stop bits at the end of the data. Select the option that matches the device requirements.

1 Stop bit



*** 2 Stop Bits**



Terminator

Data from the RS-232 device is buffered until a "Terminator" is received. When the "Terminator" is received the *MIC* sends the record to the host system.

CR



LF



*** CR LF**



ETX



EOT



User Defined





XON / XOFF

Activate or deactivate XON / XOFF handshaking. When this option is enabled, *MIC* sends a XOFF (ASCII 13H) to the RS-232 device to interrupt reception of data; to restart the flow, it sends the XON character (ASCII 11H)

Not Active



*** Active**



ACK / NAK

Enable or disable ACK/NAK handshaking. When ACK/NAK is enabled, the RS-232 device will not scan again unless an ACK (ASCII 06 H) is received from the *MIC* after the transmission of a bar code. If a NAK (ASCII 15H) is sent from the *MIC* to the RS-232 device, this one will retransmit the bar code.

*** Not Active**



Active



Others



RTS / CTS OUTPUT

When this option is enabled, RTS / CTS hardware protocol is activated. MIC will output a request to send (RTS) signal when it is ready to receive any data.

NOTE: RTS/CTS is always active in the input port.

* **Not Active**



Active



FRAMMING ERROR

When this option is enabled, no framing error is detected.

* **Detected**



Not detected



DOUBLE RS232 INPUT

This option allows two RS232 inputs to share the MIC RS232 input port.

Notes: - Cable M-06 is required.

- Only hardware handshake is supported

- One of the two RS232 devices must provide 10ms interchar delay.

* **Not Active**



Active





20) MAGNETIC STRIPE

Tracks Transmission

It is possible to configurate the order of the track transmission.

- * Track 1 or 3 transmitted, then track 2



- Track 2 transmitted, then track 1 or 3



Inter Track Character

The default separator character transmitted by the *MIC* between the two tracks is CR (ASCII 0D H) but it can be changed by reading "*User Defined*" and then the hexadecimal value of this character in the numeric keypad (Appendix D). See ASCII Table in the Appendix C.

User defined



Others



Tracks Request

You can authorize the transmission if only one track is decoded or even if both tracks are decoded.

Both Tracks required



* Only one Track required



Start Stop Transmission

You can transmit start/end sentinels or not .

* ST/SP NOT Transmitted



ST/SP Transmitted





LRC Transmission

LRC is a badge check digit. It is possible to transmit it or not.

*** LRC NOT Transmitted**



LRC Transmitted



Others



21) DATA FORMAT

MIC is able to manage the decoded data in many different ways using special features as *Preambles, Postambles,....*

The followed sequence is:

- 1º) Apply EDIT FUNCTIONS
- 2º) Apply CHARACTER SUBSTITUTION
- 3º) Add BARCODE/DEVICE IDENTIFIERS
- 4º) Add PREAMBLES
- 5º) Add POSTAMBLES
- 6º) Add END OF MESSAGE CONTROL CODES

This way the data will be like this:

{Preambles} {Identifiers}{ EDITED Data}{Postambles}{End of Message}

The user should notice this to get the desired data.



Preambles

When this option is chosen, up to 8 programable prefix character can be added to the scanned data. To specify these characters read *"User Defined"* and then the hexadecimal value of each character in the numeric keypad, finally read *"End Selection"*. If you read 8 prefix is not necessary read *"End Selection"*. You can see the hexadecimal value of each character in Appendix C.

* **None**



User Defined



Postambles

If you choose this option, up to 8 programable suffix character can be added to the scanned data. To specify these characters read *"User Defined"* and then the hexadecimal value of each character in the numeric keypad, finally read *"End Selection"*. If you read 8 postfix is not necessary read *"End Selection"*. You can see ASCII Table in the Appendix C.

* **None**



User Defined





Character Substitution

Up to 3 scanned characters can be substituted by users defined characters. To do this, read "*Character Substitution 1*", "*2*" or "*3*", then read the hexadecimal value of the character to be substituted and finally the hexadecimal value of the character to be transmitted in its place. Use the ASCII Table in Appendix C.

To *delete a character whenever it appears*, scan FFH as the hexadecimal value of the character to be transmitted.

To *remove a character substitution*, scan FFH as the hexadecimal value of the character to be substituted.

Character substitution 1



Character substitution 2



Character substitution 3





Character Substitution: Advanced

MIC allows the possibility to modify the defined character substitution in the following way only for PC AT interface:

- Allows substitute one character by another character.
- Allows substitute one character by a defined scancode.
- Allows substitute one character by a defined scancode and

modifies the scancode as follows: Ctrl + scancode, Alt+ scancode, Shift+ scancode.

Once the "Character Substitution i" characters has been defined it can be possible:

Character Substitution

The substitution engine will consider that:

- The value of the character to be substituted is its ASCII value.
- The value of the character to be transmitted in its place is its ASCII value.

The following barcodes should be used:

**Character/character
when substitution 1**



**Character/character
when substitution 2**



**Character/character
when substitution 3**





Scancode Substitution

The substitution engine will consider that:

- The value of the character to be substituted is its ASCII value.
- The value of the character to be transmitted in its place is its scancode value.

The following barcodes should be used:

**Character/Scancode
when substitution 1**



**Character/Scancode
when substitution 2**



**Character/Scancode
when substitution 3**



Scancode Modifiers

When scancode substitution is selected, the substitution engine will modify the transmitted scancode as follows:

**** NO MODIFIER ****

***No modifier applied
when substitution 1**



***No modifier applied
when substitution 2**



***No modifier applied
when substitution 3**





**** CTRL MODIFIER ****

**CTRL+Scancode
when substitution 1**



**CTRL+Scancode
when substitution 2**



**CTRL+Scancode
when substitution 3**



**** ALT MODIFIER ****

**ALT+Scancode
when substitution 1**



**ALT+Scancode
when substitution 2**



**ALT+Scancode
when substitution 3**



**** SHIFT MODIFIER ****

**SHIFT+Scancode
when substitution 1**



**SHIFT+Scancode
when substitution 2**



**SHIFT+Scancode
when substitution 3**



Data
Format



Inter Character Delay

The insertion of a delay between each character can sometimes avoid eventual errors due to a too quick transmission. The time specified represents the interim of time in between transmission of characters. It is possible too, to define one, read *"User Defined"* and then compose a value from 00 to 99, the duration of the delay is composed of a number of 5 ms. increments.

Example: A value of 05 will result in a delay of 25 ms.

*** 0 ms**



10 ms



20 ms



40 ms



80 ms



100 ms



User Defined





EDITING FUNCTIONS

Editing functions allows manipulate the data before to be transmitted by using basic functions.

MIC allows to edit up to five different data at the same time which are defined by its length and type (**Masks**).

Before fixing any mask parameter it is required that the user fixes the desired mask.

Remove all Masks

Remove all editing functions associated to all masks.



Mask Selection

Always fix the desired mask before start fixing the mask definition and the functions associated to it.

Mask 1



Mask 2



Mask 3



Mask 4



Mask 5





Remove one Mask

Select the mask you want to remove (MASK SELECTION) and read the following barcode. All functions associated to this mask will be removed as well as its data type and length definition.

Remove one mask



Mask definition

Each mask is defined by its length and data type. Always select the desired mask in MASK SELECTION before defining "String length" and "String type" parameters.

String length



String Type



Mask Functions

These basic functions will allow the user to manipulate the decoded data. Select the mask you want to work with (MASK SELECTION) and start defining functions for that mask.

Copy & Insert



Copy & Replace



Move & Insert





Delete Character



Move & Replace



Insert DELAY Char.



Insert Character



Swap Character



Delete a Block



Delay of the “Delay Character”

This parameter defines the “Delay character” duration used by the Edit function “Insert Delay Char.”. Using appendix D compose a value from 00 to 99. The duration of the delay is composed of a number of 5 ms. increments. Example: A value of 05 will result in a delay of 25 ms. in the position in which the “Delay char” is inserted.

'DELAY CHARACTER' DELAY User Defined





Editing functions is a group of basic functions:

MASK DEFINITION FUNCTIONS:

Input String length:

Fixes the length of the data. Barcodes with different length that the defined will be transmitted normally.

When fixed a length the positions assigned to data are: 123,... up to length.

When 'String Length' is defined the 'String Type' is fixed to EDIT ALL TYPES. See 'String Type' for more information.

Scan two digits in the appendix D.

Input String Type:

It is possible to apply the editing functions to a defined barcode type, RS232 or Badge device.

'String Length' must be defined prior to 'String Type' otherwise an error will result.

To fix the 'String Type' scan two digits from appendix D using the table MASK-1:



EDIT ALL TYPES	00
CODE 39	41
TELEPEN	42
CODE 128	43
ALL EAN	45
ALL UPC	45
CODABAR	46
CODE 93	47
CODE 11	48
2/5I	49
MSI	4D
PLESSEY	50
STANDARD 2/5 4BARS	52
STANDARD 2/5 6BARS	53
AMES	58
MATRIX 2/5	58
RS232 DEVICE	5A
BADGE	5A

Table MASK-1

When EDIT ALL TYPES is selected no barcode type or device criteria is checked.

Copy and Insert: This function copies a character and inserts it in other place of the data.

Two lectures must be done:

- Position Origin: Scan two digits in the appendix D.
- Position Destination: Scan two digits in the appendix D.

For example, if the original label is 12AB3456 and we want to transmit the data 12AB34B56 then the origin should be 04 and the destination should be 07. Note that the new data has got one character more and the positions of the data are reassigned.





Move and Insert: This function moves a character and inserts it in other place of the data. Two lectures must be done:

- Position Origin: Scan two digits in the appendix D.
- Position Destination: Scan two digits in the appendix D.

For example, if the original label is 12A**B**3456 and we want to transmit the data 12A34**B**56 then the origin should be 04 and the destination should be 07. Note that the new data has got the same number of characters and the positions of the data are reassigned.

Copy and Replace: This function copies a character and replaces it in other place of the data. Two lectures must be done:

- Position Origin: Scan two digits in the appendix D.
- Position Destination: Scan two digits in the appendix D.

For example, if the original label is 12A**B**3456 and we want to transmit the data 12AB34**B**6 then the origin should be 04 and the destination should be 07. Note that the new data has got the same number of characters and the positions of the data are reassigned.

Move and Replace: This function moves a character and replaces it in other place of the data. Two lectures must be done:

- Position Origin: Scan two digits in the appendix D.
- Position Destination: Scan two digits in the appendix D.

For example, if the original label is 12A**B**3456 and we want to transmit the data 12A34**B**6 then the origin should be 04 and the destination should be 07. Note that the new data has got one character less and the positions of the data are reassigned.



Insert character: This function inserts a character in a specific position of the data. Two lectures must be done:

- Position Destination: Scan two digits in the appendix D.
- Character to insert: Scan two digits in the appendix D.

See Appendix C

For example, if the original label is 12AB3456 and we want to insert the letter X (ASC 58) in the 4th position the origin should be 04 and the character to insert should be 58. The data will result as 12AX3456. Note that the new data has got one character more and the positions of the data are reassigned.

Insert Delay: This function inserts a transmission delay in a specific position of the data. One lecture must be done:

- Position Destination: Scan two digits in the appendix D.

For example, if the original label is 12AB3456 and we want to insert a delay between the 'B' and the '3' the destination should be 05. **This function must be the last one that is implemented .**

Delete a character: This function removes a character from the data. One lecture must be done:

- Position of data to delete: Scan two digits in the appendix D.

For example, if the original label is 123456 and we want to transmit the data 12356 then the position should be 04. Note that the positions of the data are reassigned.

Delete a block: This function removes a complete group of characters from the data. Two lectures must be done:

- Position Origin: Scan two digits in the appendix D.
- Position Destination: Scan two digits in the appendix D.

For example, if the original label is 12**AB**3456 and we want to transmit the data 123456 then the origin should be 03 and the destination should be 04. Note that the positions of the data are reassigned.

Data
Format



Swap character: Swaps the positions of two characters.

Two lectures must be done:

- Position first character: Scan two digits in the appendix D.
- Position second character : Scan two digits in the appendix D.

For example, if the original label is **123456** and we want to transmit the data **153426** then the position for first character should be 02 and for the second should be 05. Note that the new data has got the same number of character and the positions of the data are reassigned.



Appendix



APPENDIX A						
Command Translation Table						
Control Codes Code 128	Embedded			Control Codes Code 128	Embedded	
	1 st	2nd			1 st	2nd
RIGHT ARROW	01H	30H		F5	01H	48H
LEFT ARROW	01H	31H		F6	01H	49H
UP ARROW	01H	32H		F7	01H	4AH
DOWN ARROW	01H	33H		ESC	01H	4BH
HOME	01H	34H		F8	01H	4CH
END	01H	25H		F9	01H	4DH
ENTER	01H	36H		F10	01H	4EH
SEND	01H	37H		F11	01H	4FH
BACKSPACE	01H	38H		F12	01H	50H
TAB	01H	39H		F13	01H	51H
LINE FEED	01H	3AH		F14	01H	52H
CLEAR	01H	3BH		F15	01H	53H
DEL	01H	3CH		F16	01H	54H
RETURN	01H	3DH		F17	01H	55H
FIELD +	01H	3EH		F18	01H	56H
FIELD -	01H	3FH		F19	01H	57H
FIELD EXIT	01H	40H		F20	01H	58H
DUP	01H	41H		F21	01H	59H
RESET	01H	42H		F22	01H	5AH
BACK TAB	01H	43H		F23	01H	5BH
F1	01H	44H		F24	01H	5CH
F2	01H	45H		ALT	01H	5DH
F3	01H	46H		SHIFT	01H	5EH
F4	01H	47H		CTRL	01H	5FH



APPENDIX B

Control Codes Table

RIGHT ARROW



LEFT ARROW



UP ARROW



DOWN ARROW



HOME



END



ENTER



SEND



BACKSPACE





TAB



FIELD -



LINE FEED



FIELD EXIT



CLEAR



DUP



DEL



RESET



RETURN



BACK TAB



FIELD +



ESC





F1



F2



F3



F4



F5



F6



F7



F8



F9



F10







F22



F23



F24



ALT



SHIFT



CTRL





ALT+F1



ALT+F2



ALT+F3



ALT+F4



ALT+F5



ALT+F6



ALT+F7



ALT+F8



ALT+F9



ALT+F10



ALT+F11



ALT+F12





SHIFT+F1



SHIFT +F2



SHIFT+F3



SHIFT +F4



SHIFT +F5



SHIFT +F6



SHIFT +F7



SHIFT +F8



SHIFT +F9



SHIFT +F10



SHIFT +F11



SHIFT +F12





CTRL+F1



CTRL +F2



CTRL +F3



CTRL +F4



CTRL +F5



CTRL +F6



CTRL +F7



CTRL +F8



CTRL +F9



CTRL +F10



CTRL +F11



CTRL +F12





APPENDIX C

ASCII Code Table

		<i>First Reading</i>							
		0	1	2	3	4	5	6	7
S e c o n d R e a d i n g	0	NUL	DLE	SP	0	@	P	`	p
	1	SOH	DC1	!	1	A	Q	a	q
	2	STX	DC2	"	2	B	R	b	r
	3	ETX	DC3	#	3	C	S	c	s
	4	EOT	DC4	\$	4	D	T	d	t
	5	ENQ	NAK	%	5	E	U	e	u
	6	ACK	SYN	&	6	F	V	f	v
	7	BEL	ETB	'	7	G	W	g	w
	8	BS	CAN	(	8	H	X	h	x
	9	HT	EM	)	9	I	Y	i	y
	A	LF	SUB	*	:	J	Z	j	z
	B	VT	ESC	+	;	K	[	k	{
	C	FF	FS	,	<	L	\	l	|
	D	CR	GS	-	=	M	]	m	}
	E	SO	RS	.	>	N	^	n	~
	F	SI	US	/	?	O	_	o	DEL



APPENDIX D

Numeric Keypad







NOTES:

**MIC CONNECTION LIST**

June 1998

PC or Terminal model	Num.	Cables	Notes
A PLUS 3477	03	Y-06	
ACER 1120/1133	01	Y-01	
ACER 1120SX	01	Y-02	
ACER 530 Am 386 SXLV	01	Y-01	
ADDX / NORMEREL AT MAX	01	Y-02	
ADDX / NORMEREL NS 58	01	Y-02	
ADDX / NORMEREL S TURBO 2	02	Y-01	
ADDX / NORMEREL OP AT	01	Y-01	
APPLE MAC CLASSIC	04	Y-04	PWSR
APPLE MAC SE	04	Y-04	PWSR
APPLE MAC SE/30	04	Y-04	PWSR
APPLE MAC CX	04	Y-04	PWSR
APPLE MAC FX	04	Y-04	PWSR
APPLE MAC SX	04	Y-04	PWSR
APPLE MAC II	04	Y-04	PWSR
APPLE MAC LC II	04	Y-04	PWSR
APPLE MAC LC III	04	Y-04	PWSR
APPLE MAC LC 465	04	Y-04	PWSR
APPLE MAC LC 495	04	Y-04	PWSR
APPLE MAC PERFORMA 450	04	Y-04	PWSR
APPLE QUADRA 800/840	04	Y-04	PWSR
APPLE QUADRA A/V/900/950	04	Y-04	PWSR
APRICOT XEN I 386	01	Y-01	
AST 386 SX/20	01	Y-01	
AST BRAVO 4/33S	01	Y-01	
AST BRAVO 4/66D	01	Y-01	
AXEL IRIS PLATINE	01	Y-02	
BULL HDS1	02	Y-01	
BULL MICRAL 200/400	01	Y-02	
BULL MICRAL 40/65/75/600	01	Y-01	
BULL MICRAL 600	01	Y-01	
BULL QUESTAR 210	17	Y-11	PWSR
BULL QUESTAR 310	18	Y-11	PWSR
CANON PC A200	02	Y-01	
CARRY 1	01	Y-01	
COMMODORE 1935 386-25	01	Y-02	
COMMODORE 386-25	01	Y-01	
COMMODORE PC	02	Y-01	
COMPAQ 286 E / 386 S	01	Y-02	
COMPAQ 286/386	01	Y-01	
COMPAQ 36 XT	02	Y-01	
COMPAQ SLT 286	01	Y-02	
COMPAQ DESKPRO	02	Y-01	



PC or Terminal model	Num.	Cables	Notes
COMPAQ PROLINEA 386-25S/3-25 ZS	01	Y-02	
COMPAQ 286/386	01	Y-01	
COMPAQ 286E/386S	01	Y-02	
COMPAQ 36XT	02	Y-01	
COMPAQ DESKPRO	02	Y-01	
COMPAQ DESKPRO 386S/XL450	01	Y-02	
COMPAQ SLT 286	01	Y-02	
COUGAR PC/AT/AT3	01	Y-01	
DATAPoint 7322/7333/7373	01	Y-01	
DATAPoint 7350	53	Y-21	
DECISION SYSTEMS INTERNATIONAL	03	Y-07	
DELL 210/316 SX/433 L/486 P-33	01	Y-02	
DELL 320 N+	01	Y-01	
DONATEC PC	02	Y-01	
DSI 3876	03	Y-07	
DSI 3877	03	Y-07	
DSI 3781	03	Y-07	
DSI 3986	03	Y-02	
EAGLE PC	02	Y-01	
ELONEX 325 X	01	Y-02	
EPSON EQUITY 320 SX+	01	Y-02	
EPSON PC AX2	01	Y-01	
EPSON PC E	02	Y-01	
ERGO SYSTEM	01	Y-01	
ERICSSON PC	02	Y-01	
FALCO 500	21	Y-01	PWSR
FALCO INFINITY PC	07	Y-01	
FORCE F476/477M	03	Y-07	
FORCE TM 1471W	03	Y-07	
FORUM AT 286	01	Y-01	
FT 8700	47	Y-09	PWSR
FUJITSU FT8520	29	Y-09	PWSR
GOLDSTAR GS 317	01	Y-02	
GOUPIL G6	01	Y-02	
GOUPIL GOLF	01	Y-02	
GOUPIL G5 386 / G40	01	Y-01	
HARRIS ADACOM NV471 / NV472	03	Y-01	
HERMES H220	01	Y-02	
HEWLETT PACKARD 700/92	51	Y-17	BOARD 2V01 W-X 1B-1C 1F-1E Q-R
HEWLETT PACKARD 700/96	51	Y-17	BOARD 2V01 W-X 1B-1C 1F-1E Q-R
HP APOLLO 9000 715/33 IBM PC	01	Y-02	
HP APOLLO 9000 735 IBM PC	01	Y-02	
HP VECTRA 286/12	01	Y-02	
HP VECTRA 386/25	01	Y-01	
HP VECTRA 486VU/486VL/486-33	01	Y-02	
HP VECTRA VL 5/100 S3	01	Y-02	
HP VECTRA VL 5/100 S4	01	Y-02	



PC or Terminal model	Num.	Cables	Notes
HP VECTRA VL 5/90 S4	01	Y-02	
IBM INDUSTRIAL COMPUTER	01	Y-02	
IBM PC/AT/AT3	01	Y-01	
IBM PS/2 8540	01	Y-02	
IBM PS/2 8560	01	Y-02	
IBM PS1	01	Y-02	
IBM PS2/30 H21-H31-H41	01	Y-02	
IBM PS2/40/50/55/60/80	01	Y-02	
IBM PS2 56	14	Y-02	
IBM PSVP SERIE 6382/6384	01	Y-02	
IBM 3151	03	Y-06	
IBM 3152-010	03	Y-06	
IBM 3151-020	03	Y-06	
IBM 3153	03	Y-16	
IBM 316X	03	Y-07	
IBM 3179	03	Y-07	
IBM 3180	03	Y-07	
IBM 319X	03	Y-07	
IBM 3270	03	Y-07	
IBM 3471	03	Y-06	
IBM 3472	03	Y-06	
IBM 3476	03	Y-06	
IBM 3477	03	Y-06	
IBM 3486	03	Y-06	
IBM 3487	03	Y-06	
IBM 3489	03	Y-06	
IBM 4684 (W CONNECTION)	01	Y-02	
IBM PC 330	01	Y-02	
IBM PC ET PC/XT	02	Y-01	
ICL P415 GE / P420 GE	01	Y-02	
ICL DRS 3000	01	Y-02	
ICL DRS M15	01	Y-02	
ICL DRS M40/M45/M55/M75/M95	01	Y-02	
ICL DRS M80	01	Y-01	
IDEA 276/277	03	Y-03	
IPC 386DX 33C	01	Y-01	
IPC 5349	01	Y-01	
ITT XTRA	02	Y-01	
KENITEC 486 SX-25	01	Y-02	
KIMTRON KT-70 PC/XT	02	Y-01	
KONTRON ICU/IR	01	Y-01	
KONTRON IPLITE 486 DX-33 LP	01	Y-02	
KONTRON KAT 286	01	Y-01	
KONTRON INLITE 386SL-25	01	Y-02	
KONTRON KPR8/KPR10/KPR20	01	Y-01	
KONTRON MARLIN	01	Y-02	
LEANORD CHALLENGER 2	01	Y-01	
LEANORD TOWER 386 SX-16	01	Y-01	
MACDONNELL DOUGLAS	50	Y-20	PWSR R5=1K Ohm



PC or Terminal model	Num.	Cables	Notes
MAI DT 4315	01	Y-02	
MANNESMANN 9008	22	Y-01	
MANNESMANN KIENZLE 9008	22	Y-01	PWSR
MANNESMANN KIENZLE PC 920	01	Y-01	PWSR
MEMOREX PC 7000	02	Y-01	
MEMOREX TELEX 1471	09	Y-01	
MEMOREX TELEX 1472	09	Y-01	
MEMOREX TELEX 1191	09	Y-01	
MEMOREX TELEX 1192	09	Y-01	
MEMOREX TELEX 1197	09	Y-01	
MEMOREX TELEX 1488	09	Y-01	
MEMOREX TELEX 1477	09	Y-01	
MITAC 3060 G	01	Y-02	
NCR 3301	01	Y-02	
NCR 6/8	01	Y-01	
NCR 7901 / 7912	48	Y-18	PWSR
NCR PC 4I / 6I	02	Y-01	
NIXDORF M35	02	Y-01	
NIXDORF M55	01	Y-01	
NOKIA DATA DT 215 / 326 / 336	01	Y-01	
NOKIA VDU 191B	52	Y-01	
NOKIA VDU 471W	01	Y-01	
NORMEREL AT MAX	01	Y-02	
NORMEREL OP AT	01	Y-01	
NORMEREL S TURBO 2	02	Y-01	
OCIA DTS	20	Y-	
OCIA NCR	19	Y-	
OLIVETTI CP 486	01	Y-02	
OLIVETTI M200	02	Y-01	
OLIVETTI M290S	01	Y-02	
OLIVETTI M300	01	Y-02	
OLIVETTI M460	01	Y-02	
OLIVETTI PC PRO 386SX / 486SX	01	Y-02	
OLIVETTI PCS 286	01	Y-02	
PC AT	01	Y-PC	
PC XT	02	Y-PC	
PC 1512	06	Y-05	
PC 1640	06	Y-05	
PHILIPS P3102	02	Y-01	
PHILIPS P3105	02	Y-01	
PHILIPS P3230/P3204/P3238	01	Y-01	
PHILIPS P33XX	01	Y-01	
PHILIPS PC	02	Y-01	
PLANAR ELT 320-P1 IBM PC	01	Y-01	
QUME QVT 61	10	Y-08	
QUME QVT-PCT	10	Y-08	
REXON SUBMIT 1000	01	Y-01	
SANYO PC 16	02	Y-01	
SANYO PC 17	01	Y-01	



PC or Terminal model	Num.	Cables	Notes
SHARP 7100 PC	02	Y-13	
SHARP 7200 PC	01	Y-13	
SIEMENS-NIXDORF PCD-H	01	Y-02	
SIEMENS-NIXDORF 97801	05	Y-01	
SIEMENS-NIXDORF 97808	05	Y-01	
SIEMENS-NIXDORF M35	02	Y-01	
SIEMENS-NIXDORF M55	01	Y-01	
SIEMENS-NIXDORF OLD SM 9412	10	Y-08	
SIEMENS-NIXDORF NEW SM 9412	01	Y-08	
SILICONGRAPHICS INDIGO 2	01	Y-02	
SPERRY UNIVAC PC	02	Y-01	
SUN 350/360	45	Y-14	
SUN 370/380	45	Y-15	
SUN 410/420	45	Y-15	
SUN SPAC 5/10/15	45	Y-15	
SUNRIVER ST SERIES	01	Y-01	
TANDON PCA 12 SL	01	Y-01	
TANDON PCA 20	01	Y-01	
TANDON PCA 30	01	Y-01	
TANDON PCX 10	02	Y-01	
TANDON PCX 20	01	Y-01	
TANDON PLUS TM 7630	01	Y-01	
TANDY 1000 SL/2	02	Y-01	
TANDY 3000	01	Y-01	
TELEVIDEO AT	01	Y-12	
TELEVIDEO PC	02	Y-12	PWSR
THOMSON MICROMEGA 16	02	Y-01	
TULIP AT COMPACT 2/3	01	Y-01	
UNISYS PCI 32/561	01	Y-02	
UNISYS PWT 120/1120	54	Y-22	R1=R2=220 OHM IN CABLE
UNISYS SVT 1120	54	Y-22	R1=R2=220 OHM IN CABLE
UNISYS TO 275	47	Y-09	PWSR
UNISYS TO 300	47	Y-09	PWSR
UNISYS UT 325	47	Y-09	PWSR
VERSAL 6477	02	Y-01	
VICTOR V286 M/S/C/A/VPC III	01	Y-01	
VICTOR V286 P	01	Y-02	
VICTOR V386 A/S/CX/MX/SX	01	Y-01	
VICTOR VPC IIc VICKI	02	Y-01	
VISA MC2	46	Y-09	PWSR
VT 220/320/420	11	M-09	PWSR
VT 510 KBD PC	13	Y-02	
VT 510 KBD VT	12	Y-02	
WANG PC - 280	01	Y-01	
WYSE 160 ASCII	42	Y-09	PWSR
WYSE 160 AT 85	43	Y-09	PWSR
WYSE 160 PC 102 KEYS	41	Y-09	PWSR



PC or Terminal model	Num.	Cables	Notes
WYSE 185 ES PC 103	44	Y-09	PWSR
WYSE 2012	01	Y-01	PWSR
WYSE 285	40	Y-09	PWSR
WYSE 325	29	Y-09	PWSR
WYSE 370 AT 85	39	Y-09	PWSR
WYSE 370 PC 102 KEYS	38	Y-09	PWSR
WYSE DECISION 386SX-20/486SX-20	01	Y-01	
WYSE 120 IBM 316X	28	Y-09	PWSR
WYSE 120/60/65 ANSI	27	Y-09	PWSR
WYSE 120/60/65 ASCII	25	Y-09	PWSR
WYSE 120/60/65 AT 84 KEYS	26	Y-09	PWSR
WYSE 120/60/65 PC 102 KEYS	24	Y-09	PWSR
WYSE 85/185	29	Y-09	PWSR
ZENITH 320 SX	01	Y-01	
ZENITH AT Z 286	01	Y-01	
ZENITH Z 425 SX	01	Y-01	
ZENITH Z SELECT 100 XXX	01	Y-02	
ZENITH Z STATION 420 SN	01	Y-02	
ZENITH Z STATION 500	01	Y-02	

NOTES:

PWSR : Power supply required



SAMPLES SHEET

EAN 13



UPCA



EAN8



UPCE



CODE 39



CODE 128



INTERLEAVED 2/5 (*)



CODABAR (*)



(*) These barcodes are disabled by default.





PROJECTION SCANNERS SHEET

Use this sheet if you are using a projection scanner when programming the MIC. This way you will avoid barcode misreadings which will cause a wrong MIC configuration.



Cut through the shadow line to get an open window.
Locate the generated window on the selected MIC configuration barcode.
Show it to the scanner and read.

