Model 6000

RF Barcode Reader

USER'S MANUAL

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FCC NOTICE

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and the receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.

There are no user-serviceable internal parts. Changes or modifications not expressly performed by the manufacturer will void the manufacturer's warranty and may void the user's legal authority to operate the equipment.

FCC PRODUCT LABEL INFORMATION

This device complies with FCC Part 15. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

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INTRODUCTION

The Model 6000 RF Barcode Reader (M6000) provides the user with the means of converting an undecoded laser, CCD, or wand into a wireless device. By allowing many types of input devices, this system provides users the ability to customize according their needs and is an affordable alternative to purchasing an integrated RF system. The M6000 has a superior range, up to 150 feet, providing users with an RF link to an IBM compatible PC.

The RF host is used as a companion to the M6000, receiving the RF data and converting it into useable IBM compatible PC keyboard data. For an AT or PS/2 PC keyboard interface, the Model 6200 RF Host (M6200) is used. For a USB keyboard interface, the Model 6300 USB RF Host (M6300) is used. The M6000 can be custom configured using the M6000/M6200/M6300 Setup Menu Sheet to allow multiple independent users, as well as, other standard options that allow the equipment to be tailor-fitted for your individual data collection application. The M6000's simple but rugged construction allows for extended reliable operation. Once configured, simply connect a scanning device, push the ON button, and you are ready to scan. Every valid scan is confirmed with an audible beep. The M6000 automatically turns off power after a few minutes, so batteries are not wasted or accidentally discharged. Reliability, ease of use, and affordability make the M6000 system an excellent choice for wireless barcode data collection.

FEATURES

- Expandable: Allows ten (10) M6000 RF portables per host, by setting the Portable ID. The total system allows up to eight (8) RF hosts to be used, by setting the Host ID.
- Reader automatically recognizes and reads the following barcode types:
  - -Code 39
  - -Extended Code 39 (full ASCII)
  - -Interleaved 2 of 5
  - -UPC-A, UPC-E
  - -EAN-8, EAN-13
  - -UPC & EAN supplements (2 and 5 character)
  - -Codabar
  - -Code 128
  - -Code 93
  - -Code 11
  - -MSI/Plessey
- Supports any low cost 5 Volt undecoded laser, CCD, or wand devices.
- Convenient momentary ON button turns on the M6000 power. After a user settable idle time (in minutes), the M6000 automatically turns off the power, so there are no accidentally discharged batteries.

SETUP INSTRUCTIONS

Step 1: Insert the 9V battery into the M6000 battery compartment. Make note of the battery polarity markings in the compartment. If the battery is inserted backwards, the M6000 will not turn on.

Step 2: Replace the battery compartment door. Now press the ON button to verify that the M6000 is working. When the ON button is pressed and released you will hear an audible beep.

Step 3: Plug the barcode scanning device of your choice (laser, CCD, or wand) into the 9-pin D-shell connector interface. Note that the barcode interface connector has built-in cable locking tabs.

USAGE GUIDELINES

The Model 6000 RF Barcode Reader communicates to the RF Host using a radio frequency (RF) data link. The radio's typical range is about 150 feet in an unobstructed line-of-sight environment. Factors that effect the M6000 radio's performance in any given environment are related to the physics of radio wave (electromagnetic wave) transmission, and include: distance, reflection, cancellation, interference, and energy absorption.

Distance effects signal strength in that signal power diminishes rapidly with the "inverse square rule", which means as you go twice as far away there is only one-fourth of the total signal strength present, and so on. The M6000 provides long battery life, but if there seems to a notable decrease in range, try replacing the battery with a new, fresh one.

Reflection from metal objects effects radio waves in the same way that a mirror reflects light; radio waves typically do not pass through metal objects. When using the M6000 near metal objects, allow a sufficient distance of two feet or so to allow radio waves to propagate. Using an M6000 radio when directly separated from the RF Host by a metal wall would reduce transmission range or perhaps block the signal.

A side effect of reflection is wave cancellation, in which the signal strength coverage is dependent on the exact position in a room; this effect is associated with "peaks" of strong signal and "nulls" of weak signal. You may have heard the effect of static "nulls" on your car's stereo when stopped at a traffic signal, but when moving again the sound quality improves because both "peaks" and "nulls" are being received. Moving the M6000 unit by an inch or two to find a stronger wave "peak" can compensate for the occasional "nulls" when scanning.

Interference from other equipment may also be present in an environment. The radio's 916.5 MHz frequency is located near the center of the FCC allocated Industrial, Scientific, and Medical (ISM) 902-928 MHz frequency band. Interference in this frequency band is not common and not effected by cellular telephones or pagers. The 900 MHz cordless telephones typically operate at each end of this ISM frequency band, and so would not likely interfere with the M6000.

Absorption is the final factor affecting the performance of the M6000 radio. The M6000 transmits a safe level of radio frequency energy, however, any radio signal is to some degree absorbed by human body mass. When using the M6000 at long range, the user's body may disrupt the line-of-sight path to the RF Host. The user will likely find satisfactory use from wearing the M6000 at one's waist, but to minimize the effect of body mass, for better reception, wear the M6000 higher up on the body, such as in a chest pocket or on the arm using an armband. For best reception, the M6000 can be affixed to the top of some lasers or CCD's using Velcro strips, thereby keeping the radio at arm's length.

SETTING THE HOST ID AND PORTABLE ID

In a multiple system, the Host ID is used to determine to which PC host the M6000 communicates. The Portable ID is used to distinguish each M6000. Each M6200/M6300 RF Host (Host ID) supports up to ten (10) M6000's (Portable ID's). Each ID pair MUST NOT be used more than once, or else the data integrity will be compromised. The default settings are Host ID=1 and Portable ID=1, and must be changed if using more than one M6000.

Step 1: Make sure that an RF Host unit has already been installed on the PC and configured. Refer to the M6200 or M6300 User's Manual for installation and configuration instructions.

Step 2: Locate the Model 6000/6200/6300 Setup Menu Sheet.

Step 3: Scan the "START" barcode at the upper left corner of the Menu.

Step 4: Set the Host ID by scanning "HOST ID ADDRESS" and then select the channel number of the desired host (0 to 7). This number should match that to be used with the M6200 or M6300 host.

Step 5: Set the Portable ID by scanning "PORTABLE ID ADDRESS" and then select the number (0 to 9) to identify each M6000.

Step 6: If you wish to keep and store these changes, scan "EXIT (SAVE CHANGES". If you wish to discard these changes, and revert to your previous settings, select "EXIT (IGNORE CHANGES)".

Step 7: Open a text editor, such as Microsoft Notepad on your PC. Scan the "START" barcode from the Setup Menu Sheet again. Then scan "DIAGNOSTICS". Scan the "EXIT (IGNORE CHANGES)" barcode. Note that the current Host ID and the Portable ID settings are displayed along with other M6000 diagnostic information in the PC window.

Step 8: If the M6000 diagnostic data from Step 7 was displayed on the PC, the system is configured correctly; however, if no data is displayed, make sure the RF host unit is connected and that the Host ID setting is correct. Verify the Host ID setting by connecting a scanning device to the RF Host and scanning "START", "DIAGNOSTICS", and "EXIT (IGNORE CHANGES)".

DEFAULT SETTINGS

The M6000 default settings can be restored, aborting all user changes, using the Model 6000/6200/6300 Setup Menu Sheet by scanning "START", "RESET ALL DEFAULTS", and "EXIT (SAVE CHANGES)". Using the Setup Menu Sheet, the individual settings of the M6000 can be changed by the user, see "CHANGING THE DEFAULT SETTINGS".

The M6000 is shipped from the factory with the following default settings:

Code 39	
Code 39 Decoder	ON
Full ASCII	OFF
MOD 43 Check Digit	OFF
Send Check Digit	OFF
Concatenate Mode	OFF

UPC	
UPC Decoder	ON
Convert UPC-E to UPC-A	OFF
Convert UPC-A to EAN-13	OFF
Send UPC-A Number System	ON
Send UPC-E Number System	ON
Send UPC-A Check Digit	ON
Send UPC-E Check Digit	ON

EAN	
EAN Decoder	ON
Zero Fill EAN-8 to EAN-13	OFF
Send EAN-13 Country Code	ON
Send EAN-8 Country Code	ON
Send EAN-13 Check Digit	ON
Send EAN-8 Check Digit	ON
ISBN Conversion	OFF

UPC/EAN SUPPLEMENTS	
Supplements Decoder	OFF
Allow 2 Digit Supplements	ON
Allow 5 Digit Supplements	ON
Require Supplements	OFF
Send Separator Space	OFF

INT. 2 of 5	
I 2 of 5 Decoder	ON
Check Digit	NONE
Send Check Digit	OFF
Fixed Length	OFF
Set Fixed Length #1	00
Set Fixed Length #2	00

CODABAR	
CODABAR Decoder	ON
Send Start/Stop	OFF
CLSI Formatting	OFF
CLSI Check Digit	OFF

CODE 128	
Code 128 Decoder	ON
UCC-128 Verification	OFF
Send MOD 10 Check Digit	ON

CODE 93	
Code 93 Decoder	ON
Concatenate Mode	OFF

MSI/PLESSEY

MSI/Plessey Decoder	OFF
Two Check Digits Required	OFF
First Check Digit MOD 11	OFF
Send 1st Check Digit	OFF
Send 2nd Check Digit	OFF
ISBN Plessey	OFF

CODE 11

Code 11 Decoder	OFF
Two Check Digits Required	OFF
Send 1st Check Digit	OFF
Send 2nd Check Digit	OFF

PREAMBLE

Enter Preamble	OFF
Preamble Send Delay	0.0 Sec.
Active Types	ALL

POSTAMBLE

Enter Preamble	OFF
Postamble Send Delay	0.0 Sec.
Active Types	ALL

BARCODE OPTIONS

Send Barcode Type ID	OFF
Duplicate Reads Allowed	ON
Barcode Function Keys	OFF
Barcode Special Keys	ON
Barcode Term Char Override	OFF
Keyboard Auto Caps/Num Lock	ON
Alternate Numeric Keys	OFF

BARCODE EDIT

Barcode Editing	OFF
Enter # of Leading Chars to Strip	0
Enter # of Trailing Chars to Strip	0
Enter Barcode to Edit	ALL
Strip Leading and Trailing Spaces	OFF

LASER/CCD OPTIONS

Laser Trigger Mode	0
Laser/CCD Timeout	0 Sec
Read Delay	0.0 Sec
Read Verification	0

TERMINATION CHARACTER

2) Carriage Return

HOST KEYBOARD TYPE

0) USA (English)

HOST TRANSMIT SPEED

0) FAST

HOST ID ADDRESS

Host Unit ID	1

PORTABLE ID ADDRESS

Portable Unit ID	1

SCAN BEEP

Length: 1) Medium Short
Tone: 6) Medium High

PORTABLE ACKNOWLEDGE BEEP

Length: 0) Short
Tone: 5) High
Number of Beeps: 2

PORTABLE SHUTDOWN TIME

Minutes:	10

CHANGING THE SETTINGS

You can easily change the settings by simply scanning the barcode options located on the M6000/M6200/M6300 Setup Menu. The Setup Menu is a sheet of barcodes supplied with this manual and will be available for download from the American Microsystems' website: **www.barcodepower.com**.

The basic programming sequence is similar to the process used in "SETTING THE HOST ID AND PORTABLE ID" and follows the form:

START
..CATEGORY
…OPTION (0 to 9)
….ON/OFF or NUMBER DATA
…..EXIT (SAVE CHANGES) or EXIT (IGNORE CHANGES)

Follow these instructions to change any setting:

Step 1: Scan the START label at the top left corner of the M6000/M6200/M6300 Setup Menu. This puts the M6000 into the program mode.

Step 2: Scan one of the CATEGORY labels (i.e. Code 39, UPC, Scan Beep, Remote Shutdown Time)

Step 3: Select the desired numbered option by scanning one of the numeric labels (0 – 9). If an invalid choice is made the M6000 will emit an error beep. If there is only one option under the label, such as in "REMOTE SHUTDOWN TIME", go on to Step 4.

Step 4: If there is a (ON/OFF) next to the description, scan an ON to enable or OFF to disable the option.

Example: To enable the MOD 43 check digit on Code 39, perform the following:

1) Scan the "CODE 39" category label.
2) Scan the option 2) label to select the "MOD 43 CHECK DIGIT" option.
3) Scan the "ON" label to enable the option.

If there is a range of numbers next to the option, scan numeric labels located on the right side of the Setup Menu Sheet. Some

options require only one (1) digit, these appear as (0-9). Others require two digits, for example (00-99), and both digits must be entered.

Example: To set the Portable Shutdown Time to one minute, perform the following:

1) Scan the "PORTABLE SHUTDOWN TIME" category label.
2) Scan the "0" for the "tens" digit and the "1" for the "ones" digit. This selects the time "01", or 1 minute.

Step 5: If you want to make another change within the SAME CATEGORY, you can scan another option number (i.e. return to Step 3 above). If you want to change an option in a DIFFERENT CATEGORY, you MUST first scan the new category (i.e. return to "Step 2" above and repeat the steps).

Step 6: When you have finished making all the changes, you can either:

1) Scan the "EXIT (SAVE CHANGES)" label on the Setup Menu to save all the changes and then exit the menu to return to normal barcode reader operation.
2) Scan the "EXIT (IGNORE CHANGES)" label on the Setup Menu to discard, without saving, all the changes and then exit the menu to return to normal barcode reader operation.

PROGRAMMING GUIDE

START

The START bar code places the reader into the program mode. After scanning this label, the reader will emit three short BEEPS to indicate that it is in the program mode.

EXIT (SAVE CHANGES)

Scan this bar code to EXIT the program mode and save all of the changes. After scanning this label, the reader will BEEP twice then delay approximately one second and emit three short BEEPS to indicate that it accepted the changes.

EXIT (IGNORE CHANGES)

Scan this bar code to EXIT the program mode and DISCARD all of the current changes. The reader will use the settings that were in effect before entering the program mode.

RESET ALL DEFAULTS

Scan this bar code to RESET all options to their DEFAULT settings.
NOTE: Defaults are marked with "*".

0-9 BAR CODES

These bar codes are scanned to select various options and enter programmable data into the reader.
NOTE: Scan option (9) to reset all of the options within the current CATEGORY back to their defaults.

ON

If the OPTION has an (ON/OFF) beside the description, scan the ON bar code to turn ON the current option.

OFF

If the OPTION has an (ON/OFF) beside the description, scan the OFF bar code to turn OFF the current option.

FULL ASCII CHART

The FULL ASCII CHART is located on the back of the READER SETUP MENU. This chart contains the entire ASCII character set (128 characters). Use this chart to enter PREAMBLE and POSTAMBLE character strings as well as the RECORD TERMINATOR and SEPARATOR characters.

ADDITIONAL NOTES:

If the description beside the OPTION contains:

(ON/OFF)	Then scan either an ON or OFF label to set the option.
(CHART)	Then scan one or more characters from the Full ASCII Chart.
(0-9)	Scan the desired character from the 0-9 labels.
(00-99)	Scan two characters from the 0-9 labels.
(0.0-9.9)	Scan two characters from the 0-9 labels to set the time from 0.0 to 9.9 seconds.

CODE 39

0) CODE 39 DECODER

ON* Enable reading CODE 39 labels.

OFF Disable reading CODE 39 labels.

1) FULL ASCII

ON Enable the FULL ASCII EXTENSION to CODE 39. Option #0 above must be set ON.

OFF* Disable the FULL ASCII EXTENSION to CODE 39. This sets the reader to the standard CODE 39 mode.

2) MOD 43 CHECK DIGIT

ON Enable the MOD 43 CHECK DIGIT for CODE 39. When this option is enabled, only CODE 39 labels that contain a valid check digit will be read.

OFF* Disable the MODE 43 CHECK DIGIT. Check digit verification will not be performed.

3) SEND CHECK DIGIT

ON Transmit the MOD 43 CHECK DIGIT with the bar code data. Requires option #2 above to be set ON.

OFF* Do not transmit the MOD 43 CHECK DIGIT.

4) CONCATENATE MODE

ON Enable CONCATENATE MODE. The concatenate mode allows the reader to accumulate multiple bar codes in its buffer, then send them to the computer just like they were a single bar code. When a Code 39 label containing a leading space is read, the reader emits two short beeps and buffers the data without transmission. This process continues until a Code 39 label without a leading space is read or 128 characters are buffered. A Code 39 bar code label that only contains a single or multiple dashes (minus sign) will clear the buffer.

OFF* Disable CONCATENATE MODE.

UPC

0) UPC DECODER

ON* Enable reading UPC-A and UPC-E labels.

OFF Disable reading UPC-A and UPC-E labels.

1) CONVERT UPC-E TO UPC-A

ON Convert all UPC-E labels to their UPC-A equivalents before transmission. After conversion, the reader will follow the UPC-A programming options.

OFF* No conversions will be performed.

2) CONVERT UPC-A TO EAN-13

ON Convert all UPC-A labels to an equivalent EAN-13 format by inserting a leading zero. After conversion, the reader will follow the EAN-13 programming options.

OFF* No conversions will be performed.

3) SEND UPC-A NUMBER SYSTEM

ON* Transmit the UPC-A NUMBER SYSTEM character.

OFF Do not transmit the UPC-A NUMBER SYSTEM character.

4) SEND UPC-E NUMBER SYSTEM

ON* Transmit the UPC-E NUMBER SYSTEM character.

OFF Do not transmit the UPC-E NUMBER SYSTEM character.

5) SEND UPC-A CHECK DIGIT

ON* Transmit the UPC-A CHECK DIGIT character.

OFF Do not transmit the UPC-A CHECK DIGIT character.

6) SEND UPC-E CHECK DIGIT

ON* Transmit the UPC-E CHECK DIGIT character.

OFF Do not transmit the UPC-E CHECK DIGIT character.

EAN

0) EAN DECODER

ON* Enable reading EAN-8 and EAN-13 labels.

OFF Disable reading EAN-8 and EAN-13 labels.

1) ZERO FILL EAN-8 TO EAN-13

ON* Add five leading zeros to EAN-8 labels. After conversion, the reader will follow the EAN-13 programming options.

OFF No conversions will be performed.

2) SEND EAN-13 COUNTRY CODE

ON* Transmit the EAN-13 COUNTRY CODE.

OFF Do not transmit the EAN-13 COUNTRY CODE

3) SEND EAN-8 COUNTRY CODE

ON* Transmit the EAN-8 COUNTRY CODE.

OFF Do not transmit the EAN-8 COUNTRY CODE

4) SEND EAN-13 CHECK DIGIT

ON* Transmit the EAN-13 CHECK DIGIT character.

OFF Do not transmit the EAN-13 CHECK DIGIT character.

5) SEND EAN-8 CHECK DIGIT

ON* Transmit the EAN-8 CHECK DIGIT character.

OFF Do not transmit the EAN-8 CHECK DIGIT character.

6) ISBN CONVERSION

ON Convert 13 DIGIT BOOKLAND/EAN (978) prefix to its corresponding 10 DIGIT ISBN number.

OFF* Do not convert Bookland/EAN to an ISBN number.

UPC/EAN SUPPLEMENTS

0) SUPPLEMENTS DECODER

ON Enable reading UPC & EAN supplements.

OFF* Disable reading UPC & EAN supplements.

1) ALLOW 2 DIGIT

ON* Enable reading 2 digit supplements. Option (0) above must be set ON.

OFF Disable reading 2 digit supplements.

2) ALLOW 5 DIGIT

ON* Enable reading 5 digit supplements. Option (0) above must be set ON.

OFF Disable reading 5 digit supplements.

3) REQUIRE SUPPLEMENTS

Specifies how the reader will handle various supplements.

0)* UPC/EAN bar codes will be read with or without valid supplements.

1) UPC bar codes will not be read unless they are accompanied by a valid supplement.

2) EAN bar codes will not be read unless they are accompanied by a valid supplement.

3) Bookland EAN bar codes will not be read unless they are accompanied by a valid supplement.

4) All UPC/EAN bar codes will not be read unless they are accompanied by a valid supplement.

4) SEND SEPARATOR SPACE

ON Insert a space between the standard bar code data and the supplemental data.

OFF* No separator space is inserted.

INTERLEAVED 2 OF 5

0) I 2 OF 5 DECODER

ON* Enable reading INTERLEAVED 2 of 5 labels.

OFF Disable reading INTERLEAVED 2 of 5 labels.

1) CHECK DIGIT: 0=NONE, 1=USS, 2=OPCC

Specifies which type of check digit will be used with INTERLEAVED 2 of 5:

0*	=	NONE (no check digit required)
1	=	UNIFORM SYMBOLOGY SPECIFICATION (3-1-3 MOD 10)
2	=	OPTICAL PRODUCT CODE COUNCIL (2-1-2 MOD 10)

2) SEND CHECK DIGIT

ON Transmit the INTERLEAVED 2 of 5 check digit with the bar code data.

OFF* The check digit is not transmitted.

3) FIXED LENGTH

ON Read only FIXED LENGTH INTERLEAVED 2 of 5 bar code labels that match the lengths defined in options (4) & (5) below. The check digit can be on or off.

OFF* Disable FIXED LENGTH mode. Read all INTERLEAVED 2 of 5 labels without regard to length.

4) SET FIXED LENGTH #1 (02-60)

Sets the first valid FIXED LENGTH for Interleaved 2 of 5. Scan a two-digit value to enter the length. Valid lengths are 02 to 60 characters. By definition, the lengths of Interleaved 2 of 5 labels are an even number of characters. The default FIXED LENGTH is 0 characters.

5) SET FIXED LENGTH #2 (02-60)

Sets a second valid fixed LENGTH for Interleaved 2 of 5. Scan a two-digit value to enter the length. The default length is set to 0 characters (i.e. the second FIXED LENGTH is disabled).

CODABAR

0) CODABAR DECODER

ON * Enable reading CODABAR labels.

OFF Disable reading CODABAR labels.

1) SEND START/STOP

ON Transmit the CODABAR start/stop characters.

OFF * Do not transmit the CODABAR start/stop characters.

2) CLSI FORMATTING

ON The reader will insert a blank after the 1st, 5th, and 10th characters of a 14-character CODABAR label. The label length does not include the start and stop characters.

OFF * Disable CLSI formatting.

3) CLSI CHECK DIGIT

ON Enable the CLSI check digit. When this option is enabled, all fourteen digit numeric bar codes must contain a valid check digit.

OFF* Disable the CLSI check digit. Check digit verification will not be performed.

CODE 128

0) CODE 128 DECODER

ON * Enable reading Code 128 labels.

OFF Disable reading Code 128 labels.

1) UCC-128 VERIFICATION

ON A valid MOD 10 CHECK DIGIT is required on UCC-MOD 10 bar codes. (Applies to 20-digit serial shipping container bar codes.)

OFF * UCC-MOD 10 bar codes are accepted without valid MOD 10 CHECK DIGITS.

2) SEND MOD 10 CHECK DIGIT

ON * Transmit the MOD 10 CHECK DIGIT with the bar code entry.

OFF Do not transmit the MOD 10 CHECK DIGIT.

CODE 93

0) CODE 93 DECODER

ON* Enable reading Code 93 labels.

OFF Disable reading Code 93 labels.

1) CONCATENATE MODE

ON Enable CONCATENATE MODE. The concatenate mode allows the reader to concatenate multiple bar codes in its buffer, and then send them to the computer just like they were a single bar code. When a Code 93 label with a leading space is read, the reader emits two short beeps and buffers the data without transmission. This process continues until a Code 93 label without a leading space is read or 128 characters are buffered. A Code 93 bar code label that only contains a single or multiple dashes (minus sign) will clear the buffer.

OFF* Disable CONCATENATE MODE.

MSI/PLESSEY

0) MSI/PLESSEY DECODER

ON Enable reading MSI/PLESSEY labels.

OFF * Disable reading MSI/PLESSEY labels.

1) TWO CHECK DIGITS REQUIRED

ON Two valid check digits are required for each label. The first check digit is defined by option (2) below. The second check digit is always MOD 10.

OFF * One valid check digit is required for each label. The check digit must be MOD 10.

2) FIRST CHECK DIGIT MOD 11

ON The First check digit must be MOD 11.

OFF * The First check digit must be MOD 10.

3) SEND FIRST CHECK DIGIT

ON Transmit the FIRST CHECK DIGIT.

OFF * Do not transmit the FIRST CHECK DIGIT.

4) SEND SECOND CHECK DIGIT

ON Transmit the SECOND CHECK DIGIT.

OFF * Do not transmit the SECOND CHECK DIGIT.

5) ISBN PLESSEY

ON Enable reading of Modified Plessey ISBN bar codes. Only eleven digit ISBN bar codes will be read.

OFF* Do not read Modified Plessey ISBN bar codes.

CODE 11

0) CODE 11 DECODER

ON Enable reading Code 11 labels.

OFF * Disable reading Code 11 labels.

1) TWO CHECK DIGITS REQUIRED

ON Two valid check digits are required for each label.

OFF * One valid check digit is required for each label.

2) SEND FIRST CHECK DIGIT

ON Transmit the FIRST CHECK DIGIT.

OFF * Do not transmit the FIRST CHECK DIGIT.

3) SEND SECOND CHECK DIGIT

ON Transmit the SECOND CHECK DIGIT.

OFF * Do not transmit the SECOND CHECK DIGIT.

PREAMBLE

Preamble refers to a user-defined set of characters transmitted at the beginning of each type of input data. In addition, a preamble time delay may be set from 0.0 to 9.9 seconds.

0) ENTER PREAMBLE

This set of user-defined characters is transmitted at the beginning of bar code data. To define this preamble, scan up to 15 characters from the FULL ASCII chart on the reverse side of the SETUP MENU. Scan the "ON" bar code when complete.

1) PREAMBLE SEND DELAY (0.0 - 9.9 SEC)

This option specifies the amount of delay to occur after the bar code preamble is transmitted. The delay period is programmable from 0.0 to 9.9 seconds.

2) ACTIVE TYPES

Specifies the types of bar codes that use preambles. Select one of the following:

A CODE 39	B UPC-A	C UPC-E
D EAN-13	E EAN-8	F Int. 2 of 5
G CODABAR	H CODE 128	I CODE 93
J MSI/PLESSEY	K CODE 11	L ISBN

X* ALL BAR CODES

POSTAMBLE

Postamble refers to a user-defined set of characters transmitted at the end of each type of input data. There are three different postambles; one set each for bar code data, magnetic stripe data, and serial input port data.

0) ENTER POSTAMBLE

This set of user-defined characters is transmitted at the end of bar code data. To define this postamble, scan up to 15 characters from the FULL ASCII chart on the reverse side of the SETUP MENU. Scan the "ON" bar code when complete.

1) POSTAMBLE SEND DELAY (0.0 - 9.9 SEC)

This option specifies the amount of delay to occur after the bar code postamble is transmitted. The delay period is programmable from 0.0 to 9.9 seconds.

2) ACTIVE TYPES

Specifies the types of bar codes that use postambles. Select one of the following:

A CODE 39	B UPC-A	C UPC-E
D EAN-13	E EAN-8	F Int. 2 of 5
G CODABAR	H CODE 128	I CODE 93
J MSI/PLESSEY	K CODE 11	L ISBN

X* ALL BAR CODES

BAR CODE OPTIONS

0) SEND BARCODE TYPE ID: (ON/OFF)

ON: Sends a letter preceding the data, indicating the symbology type of the barcode. This letter corresponds to the types:

A	CODE 39	B	UPC-A	C	UPC-E
D	EAN-13	E	EAN-8	F	Int. 2 of 5
G	CODABAR	H	CODE 128	I	CODE 93
J	MSI/PLESSEY	K	CODE 11	L	ISBN

OFF*: Do not transmit BAR CODE TYPE ID.

1) DUPLICATE READS ALLOWED (ON/OFF)

ON*: Enable reading the same bar code multiple times.
OFF: Disable reading the same bar code twice in a row.

2) BAR CODE FUNCTION KEYS (ON/OFF)

ON: Applies to BAR CODE data, preambles, postambles, and user defined termination characters. FUNCTION KEYS F1 through F10 will be transmitted in place of the ASCII characters "DC1" (11H) through "SUB" (1AH). The FUNCTION KEY values are listed in the Full ASCII Chart on back of the Setup Menu.

OFF*: Disable FUNCTION KEYS.
(Standard ASCII characters are transmitted.)

3) BAR CODE SPECIAL KEYS

This option applies only to bar code data, preambles, postambles, and user defined termination characters.

ON: SPECIAL KEY characters will be transmitted in place of a specific set of ASCII characters. The SPECIAL KEYS are listed in the Full ASCII Chart provided on back of the Setup Menu.

OFF*: Disable SPECIAL KEYS. (Standard ASCII Characters are transmitted.)

EXAMPLE: With SPECIAL KEYS ON, the bar code character "STX" will be transmitted as a right arrow, having the effect of pressing the "r" key at the keyboard.

4) BARCODE TERM CHAR OVERRIDE: (ON/OFF)

ON: If any control character or special character (i.e., function key, arrow key, etc.) is embedded in the barcode data, the TERMINATION CHARACTER, the BARCODE PREAMBLE, and the BARCODE POSTAMBLE will not be transmitted.

OFF*: Special characters do not effect transmission of the TERMINATION CHARACTER, the BARCODE PREAMBLE, and the BARCODE POSTAMBLE

NOTE: If the Bar Code Reader is not transmitting the special characters with SPECIAL KEYS ON, or if the computer is an XT, see (5), "Keyboard Auto Caps/Num Lock".

5) KEYBOARD AUTO CAPS/NUM LOCK

With this option ON, data is automatically transmitted in the correct upper/lower case, whether the keyboard's settings are turned ON or OFF.

ON*: Enable KEYBOARD AUTO CAPS/NUM LOCK.

OFF: Disable KEYBOARD AUTO CAPS (data follows keyboard setting)

NOTE: The KEYBOARD AUTO CAPS/NUM LOCK option is NOT effective on some computers, such as XT's. Indications that this option is NOT functioning are as follows: Upper/Lower Case is reversed and SPECIAL KEY characters are not transmitted when SPECIAL KEYS are ON.

6) ALTERNATE NUMERIC KEYS

This option is necessary ONLY for computers that use Scan Code Set 3. Note that it might be necessary to disable KEYBOARD AUTO CAPS/NUM LOCK. See (5), the preceding option, for further information.

ON: Enable ALTERNATE KEYBOARD SCAN CODES.

OFF*: Disable ALTERNATE KEYBOARD SCAN CODES.

BARCODE EDIT

This option allows data editing (modification) before transmission.

0) DATA EDITING

Must be ON for any of the editing options below to be valid.

ON: Enable Data Editing.
OFF*: Disable Data Editing.

1) ENTER # OF LEADING CHAR TO STRIP (0-9, A-F)

Refers to the number (0-15) of characters to be stripped, i.e., removed, from the beginning of the data entry.

2) ENTER # OF TRAILING CHAR TO STRIP (0-9, A-F)

Refers to the number (0-15) of characters to be stripped, i.e., removed, from the end of the data entry.

NOTE: If the total number of strip characters (both Leading and Trailing) is greater than the number of characters of the barcode, no characters will be stripped.

3) ENTER DATA TYPE TO EDIT

Refers to the type of barcodes for which editing can be enabled, allowing editing to be specific to a type of barcode. The choices are listed below:

A	CODE 39	B	UPC-A	C	UPC-E
D	EAN-13	E	EAN-8	F	Int. 2 of 5
G	CODABAR	H	CODE 128	I	CODE 93
J	MSI/PLESSEY	K	CODE 11	L	ISBN

X* ALL BAR CODES

4) STRIP LEADING & TRAILING SPACES

ON: Any LEADING & TRAILING SPACES will be stripped from the data.

OFF*: No spaces will be stripped.

LASER/CCD OPTIONS

These options are used to configure the laser device behavior and the trigger mode for the M6000.

0) LASER TRIGGER MODE (0-3)

0) TRIGGER MODE:	(RECOMMENDED) Trigger activates scanning device for one scan only.
1) PULSE MODE:	Continuous scanning method for non-reflective backgrounds; for use with MS-941 triggerless scanner only.
2) CONTINUOUS:	Scans barcodes until the trigger is released or until the laser/CCD time-out is reached.
3) BLINK MODE:	Continuous scanning with no time-out. Laser/CCD turns on and off allowing safe operation.

1) LASER/CCD TIMEOUT: Turns off Laser/CCD after (0 – 9) seconds.

2) READ DELAY: Allows re-reads. Continuous run read delay (0.0 – 9.9) seconds is used to allow a new re-read of a barcode, after the read delay expires.

3.) READ VERIFICATION: Performs re-reads the number of times (0 – 9) required for accuracy critical applications.

TERMINATION CHARACTER

The optional TERMINATION CHARACTER is transmitted at the end of the data. If a USER DEFINED TERMINATION CHARACTER is desired, select setting (4) below, then scan a single character from the FULL ASCII section of the Setup Menu.

0 NONE
1 HORIZONTAL TAB (ASCII 09)
2 * CARRIAGE RETURN (ASCII 13)
3 CARRIAGE RETURN & LINE FEED (ASCII 13 & ASCII 10)
4 USER DEFINED TERMINATION CHARACTER

SCAN BEEP LENGTH & TONE

Settings (0-3) set the LENGTH of the beep. Settings (4-7) set the TONE (pitch) of the beep. Setting (8), when selected, will override the other BEEP selections and shut the beep off.

LENGTH:
0 SHORT
1 * MEDIUM SHORT
2 MEDIUM LONG
3 LONG

TONE:
4 LOW
5 MEDIUM LOW
6 * MEDIUM HIGH
7 HIGH

OFF:
8. NO BEEP

PORTABLE ACKNOWLEDGE BEEP LENGTH & TONE

Settings (0-2) set the LENGTH of the beep. Settings (3-5) set the TONE (pitch) of the beep. Setting (6), NUMBER OF BEEPS, will select the number of beeps sent.

LENGTH:
0 * SHORT
1 MEDIUM SHORT
2 LONG

TONE:
3 LOW
4 MEDIUM
5 * HIGH

NUMBER OF BEEPS:
6. NUMBER OF BEEPS (0-2)

DIAGNOSTICS

This option executes a self-test program that performs the following tests on the M6000:

- Firmware Version Number
- Report HOST ID # and PORTABLE ID # Settings
- Internal and External Ram Test
- EPROM Checksum Test
- Character Set Test
- Beeper Test

The above tests are performed and their status is displayed on the PC monitor. An RF Host connected to a PC is required to see the text of the diagnostic status report. If the text is not displayed on the PC window, the RF Host is not configured properly. See "SETTING THE HOST ID AND PORTABLE ID" in this book, or consult the M6200/M6300 User's Manual.

PORTABLE SHUTDOWN TIME

This option is used to conserve battery life, and allows the M6000 to be used effectively with wand devices. The M6000 has an ON pushbutton, used to turn-on the M6000. There is no "OFF" position on the pushbutton. Instead, if the M6000 is sitting idle too long, the M6000 will shut-off power automatically. Scanning data or other activity will reset this countdown time, as the M6000 is not sitting idle. This time may be set from 01 to 99 minutes. Note that a 00 setting will set the M6000 for constant run with no power off. The default setting is 10 minutes.

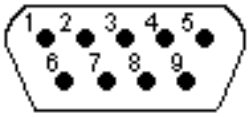
Example:

Scan the "0" for the "tens" digit and the "1" for the "ones" digit. This selects the time "01", or 1 minute.

SIGNAL DEFINITIONS

The following wiring diagram is provided to assist in the construction and/or repair input/output device cable.

LASER/CCD/WAND INTERFACE: This is a DB9 male connector.



Pin:	Signal:
1	Sync
2	Data
3	Decode LED
4	No Connection
5	Trigger
6	Head Enable
7	Ground
8	Shield Ground
9	Laser/CCD/Wand power