HOST MODE PROGRAMMING



> DS5100

2 Port Profinet-IO

DATALOGIC

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5K Profinet-IO Host Mode Programming

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1 HOST MODE PROGRAMMING

An alternative method of programming the 5K Profinet-IO laser scanners is by sending programming strings.

For Profinet-IO models, these strings must be transmitted from a PC or other Host system equipped with EthernetTCP/IP to the device through the System Socket. This is called Host Mode Programming.

The default parameters are given below.

Default IP Address: 192.168.3.100
Subnetmask: 255.255.0.0
TCP Type: Server
Port: 51235



NOTE: If the scanner doesn't respond, the scanner factory default values can always be restored by holding the X-PRESS™ push-button pressed while powering up the scanner and waiting for all LEDs to blink simultaneously three times before releasing the push button.
This procedure takes ≈ 20 seconds for Profinet-IO models. At the end of the procedure the Configuration and Environmental parameters are reset.

In order to send the programming strings, it is necessary to switch the reader into **Host Mode**.



CAUTION: Genius™ must be disconnected from all reader interfaces before entering in Host Mode.

2 PROGRAMMING COMMANDS

2.1 CONNECTION TO DEVICE

	DESCRIPTION	HOST COMMAND	REPLY MESSAGE
1	**Enter Host Mode**	**<ESC> [C**	**<ESC> H <CR><LF>**
	After entering this command, the device responds with the first reply message and then waits for the following command. From now on the device is in the **CONNECTED** state. Normal data flow is inhibited until it comes back to the **IDLE** state.		
2	**Enter Terminal Mode**	**<ESC>] B**	**<ESC> R <CR><LF>**
	After entering this command, the device responds with the second reply message and then waits for the following command in Terminal mode.		
3	**Enter Programming Mode**	**<ESC> c M <$B0_H$> <30_H>**	**<ESC> c <CR><LF>**
	After entering this command, the device responds with the third reply message and then waits for one or more programming strings as shown in Chapter 3 and 4.		

2.2 DISCONNECTION FROM DEVICE

	DESCRIPTION	HOST COMMAND	REPLY MESSAGE
1	**Exit Programming Mode**	**<ESC> d M <$B0_H$> <30_H>**	**<ESC> d <CR><LF>**
	This message must always be transmitted to exit from programming mode.		
2	**Exit Terminal Mode**	**<ESC> I A <space>**	**<ESC> K <CR><LF>**
	This message must always be transmitted to exit from Terminal mode.		
3	**Exit Host Mode**	**<ESC> [A**	**<ESC> X <CR><LF>**
	This message must always be transmitted to end the programming session. From now on device is in **IDLE** state. Communication channel may be used for normal data flow.		

2.3 SELF DISCONNECTION

Specific situations exist where the device is automatically disconnected from the Host and is restored to the **IDLE** state. Once connected, the following message could be sent:

	DESCRIPTION	HOST REPLY	DEVICE MESSAGE
	Self Disconnection	**-**	**<ESC> [A**
	This message notifies a forced disconnection from the Host. This message must always be managed by the Host program to check when the device has gone back to the **IDLE** state.		

Normally programming sequences do not involve this message except for the occasions listed below:

1. **Inactivity Timeout Expiration**
   After connection, no programming commands or programming strings are sent to the device (approximately 2 minutes as default).

2. **Application Software Restart**
   Particular commands may force a restart of the device like Data Storage commands (refer to the Paragraph 3.5). The Self Disconnection message is sent to notify these cases.

3. **General Error Condition**
   After connection to the device, unexpected errors are notified by means of the Self Disconnection message.

4. **Protocol Error**
   When Host sends wrong messages like unexpected escape sequences.

	DESCRIPTION	HOST REPLY	DEVICE MESSAGE
	Self Disconnection	**<ESC> X <CR><LF>**	**-**
	Host must confirm the disconnection event sending this reply message. If not sent, after a timeout (about 300 ms as default) device goes back to the **IDLE** state.		

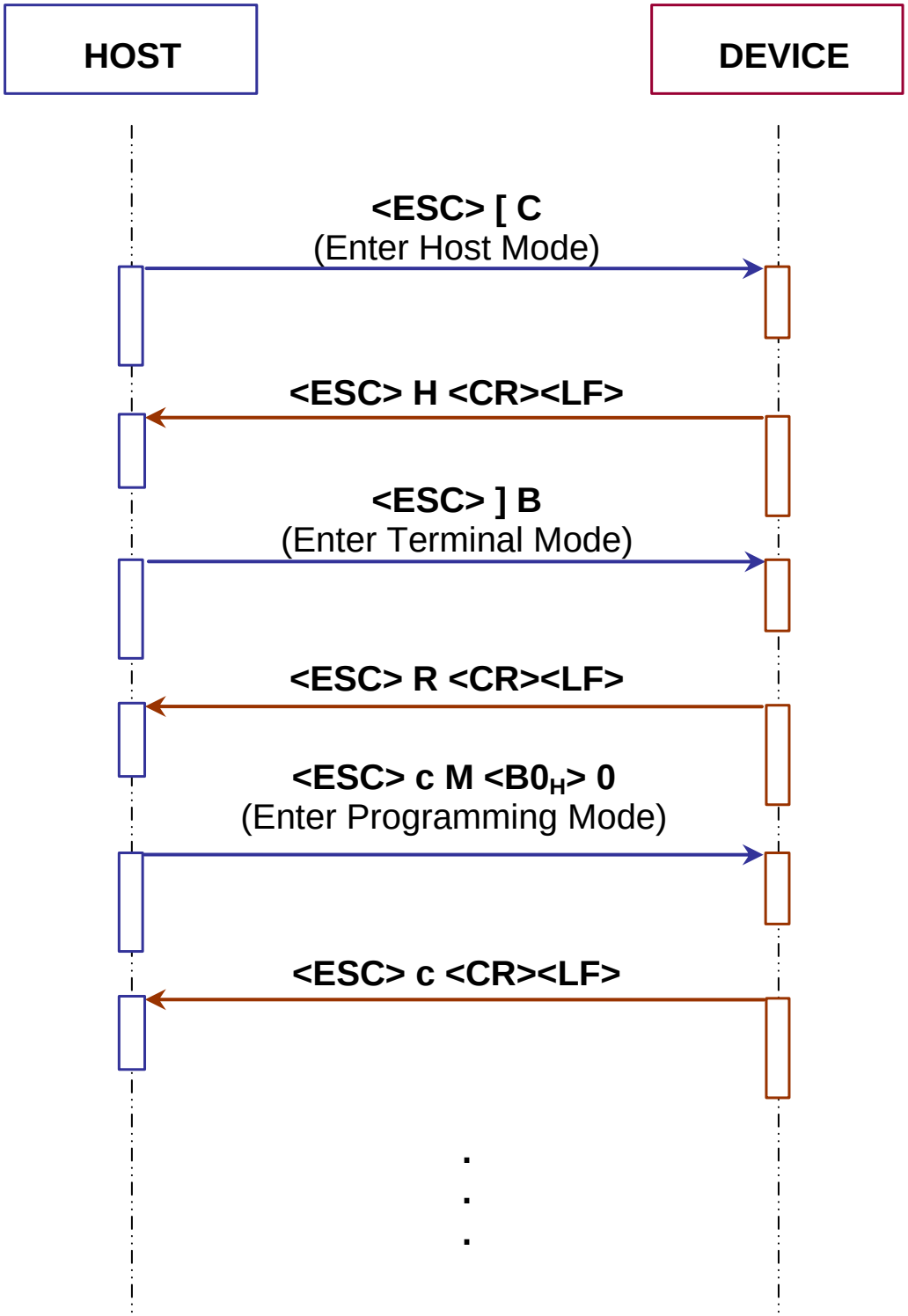


Figure 1 - Connection to Stand Alone Device

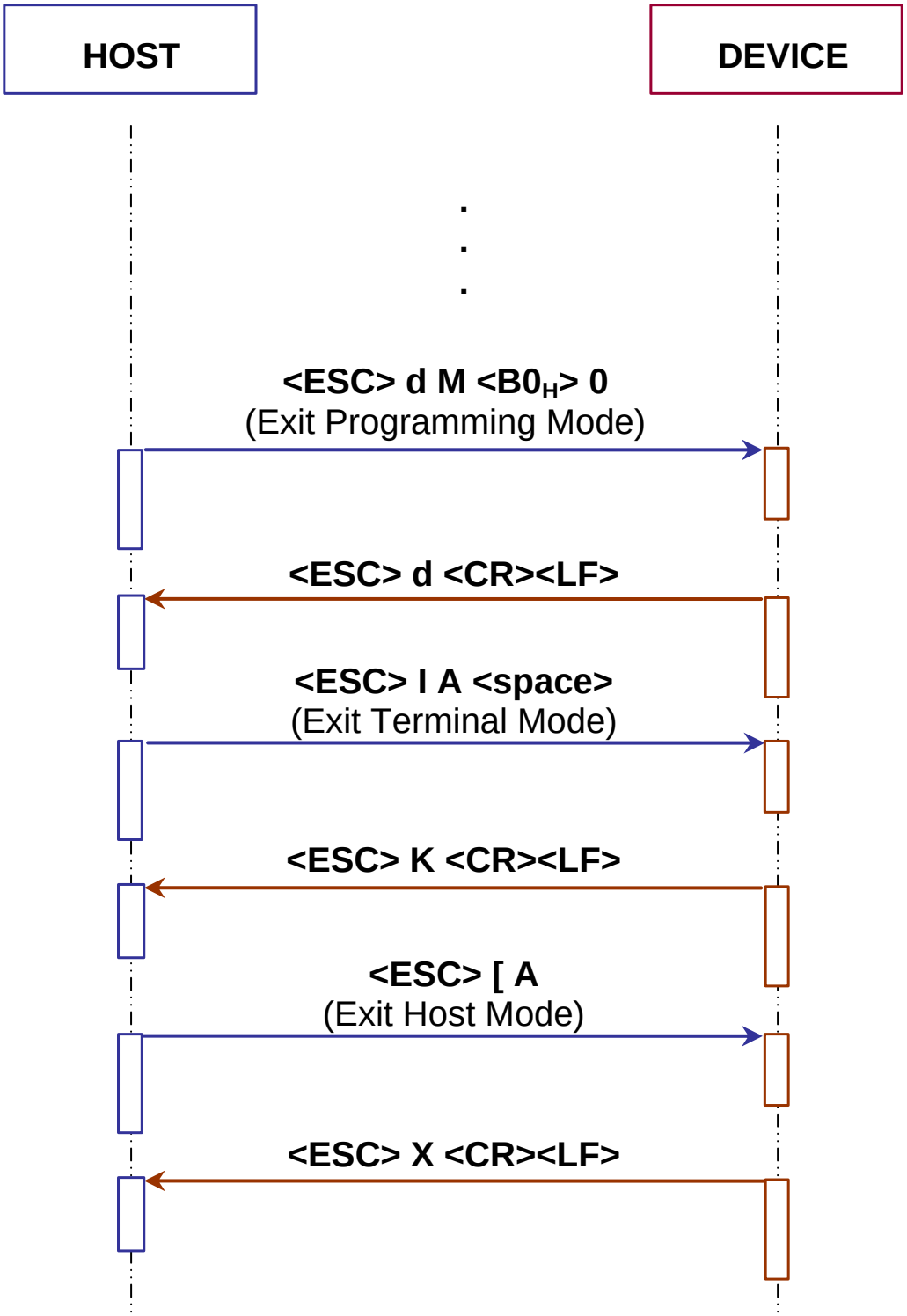


Figure 2 - Disconnection from Stand Alone Device

3 PROGRAMMING STRINGS

3.1 DEFINITIONS

Shortcut (SHC)
The complete parameter path has been replaced by the *short description* (*shortcut* or *shc*). This allows implementation of shorter programming strings. The shortcuts have the following format:

Shortcut [#**Depth**]

Where:

- **Shortcut**: Short Parameter Description (a numeric value)
- [**#Depth**]: Parameter Depth (not necessary if equal to 1)

Depth (Parameter Depth)
Depth of the parameter indicates if it is made up of a vector of values or a single value (e.g. *Code Symbology* parameter has depth > 1 since we have one *Code Symbology* value for each Code slot allowed; *Code Combination* parameter has depth =1).

Example:

Label: Code Symbology
Shortcut: 2#3

Allows selecting the code symbology requested for Code slot 3.

Type (Parameter Type or PT)
Parameter type is essential in order to decide the parameter **VALUE** format used in the programming strings. Types are:

Type 0: Integer (Numeric)
Type 1: Enumeration
Type 2: String
Type 3: Binary String
Type 4: Floating Point

The other definitions change according to the parameter type.

Integer (Type = 0)

Range
Minimum and maximum values allowed for the parameter.

Example: Reading Phase *Timeout* parameter (OPERATING MODES folder).

Shortcut: 79
Type: 0
Label: Timeout (ms)
Range: 40 to 15.000
Default: 100

The sign can be omitted if the parameter value is not negative.

Enumeration (Type = 1)

Item List
List of the values allowed for the parameter.

List of the values allowed for the parameter (i.e. 0 = first entry of the list, 1 = second entry of the list).

Example: *Operating Mode* parameter (OPERATING MODES folder).

Shortcut: 31
Type: 1
Label: Operating Mode Selection
Item List: 0 = On Line
1 = Automatic
3 = Test
4 = Continuous
Default: 0 (Entry 0 → On Line)

String (Type = 2)

Length
Minimum and maximum number of characters allowed for this parameter.

Example: *Device Name* parameter (USER INFORMATION SECTION folder).

Shortcut: 522
Type: 2
Label: Device Name
Length: 0 to 128
Default: Empty string

Binary String (Type = 3)

The value of a Binary String parameter must have the following format:

NumChar<space>[**Char1**][**Char2**] … [**CharK**] … [**CharN**]

Where:

- **NumChar**: Number of Characters (DEC value)
- [**CharK**]: Character K (HEX value)

Length
List of the allowed values of the parameter

Example: *Header String* parameter (DATA FORMAT folder).

Shortcut: 6
Type: 3
Label: Header String
Length: 0 to 128
Default: <STX>

Floating Point (Type = 4)

The Floating Point parameter value has the following format:

XXX.YYY

Range
Minimum and maximum values allowed for the parameter.
The sign can be omitted if the parameter value is not negative.

3.2 HOW TO SEND A SINGLE PARAMETER TO THE READER

The '**Set Shortcut**' programming string (based on the short parameter description) must have the following format:

SS<space>**SHC**:**VALUE**<CR><LF>

Where:

- **SS**: 'Set Shortcut' command
- **SHC**: Short Parameter Description (Shortcut)
- **VALUE**: Parameter Value

After entering this command, the device responds with the proper reply message and then waits for one or more programming strings.

If the programming is correct, the device updates the configuration and confirms with the following message:

Y<space>**VALUE**<CR><LF>

Where:

- **VALUE**: Parameter Value

If programming contents are wrong (i.e. a typing error in the file) or due to a transmission error, the device replies with the following message and programming data will not be updated in this case:

N<space>**ERRCODE**<CR><LF>

Where:

- **ERRCODE**: Error Code (signed DEC value)

For information on Error Codes see the "Error Codes Table" in the Appendix.

3.3 HOW TO GET A SINGLE PARAMETER FROM THE READER

The '**Get Shortcut**' programming string (based on the short parameter description) must have the following format:

GS<space>**SHC**<CR><LF>

Where:

- **GS**: 'Get Shortcut' command.
- **SHC**: Short Parameter Description (Shortcut).

After entering this command, the device responds with the proper reply message and then waits for one or more programming strings.

If the programming is correct, the device updates the configuration and confirms with the following message:

Y<space>**VALUE**<CR><LF>

Where:

- **VALUE**: Parameter Value.

If programming contents are wrong (i.e. a typing error in the file) or due to a transmission error, the device replies with the following message:

N<space>**ERRCODE**<CR><LF>

Where:

- **ERRCODE**: Error Code (signed DEC value)

For information on Error Codes see the "Error Codes Table" in the Appendix.

3.4 HOW TO ACCESS INSTALLER PARAMETERS

Set Right Parameter Description

The '**Set Right**' programming string allows the user to access some particular parameters not available as standard user:

SR<space>**L**<space>**PASSWORD**<CR><LF>

Where:

- **SR**: 'Set Right' command
- **L**: Access Level Description
- **PASSWORD**: Password for the Level accessing

After entering this command, the device responds with the proper reply message and then waits for one or more programming strings.

If the programming is correct, the device updates the configuration and confirms with the following message:

Y<space>**L**<CR><LF>

If programming contents are wrong (i.e. a typing error in the file) or due to a transmission error, the device replies with the following message and programming data will not be updated in this case:

N<space>**ERRCODE**<CR><LF>

Where:

- **ERRCODE**: Error Code (signed DEC value)

For information on Error Codes see the "Error Codes Table" in the Appendix.



NOTE: To set the **INSTALLER** level (the only one available outside the Datalogic Company) use:

SR<space>1<space>STHD<CR><LF>

3.5 SAVE AND RESTORE COMMANDS

The '**Data Storage**' programming command must have the following format:

E<space>**MODE**<CR><LF>

Where:

- **E**: Data Storage command.
- **MODE**: Data Storage mode. The possible values are:

  V = Storage in temporary (volatile) memory only.
  P = Storage in temporary and permanent memory.

If the programming is correct, the device updates the configuration and confirms with the following message:

Y<space>**MODE**<CR><LF>

Where:

- **MODE**: Data Storage mode.



CAUTION: Restart of the device is now forced. If no disconnection commands are sent within a minimum timeout of 300 ms, the device will transmit the Self Disconnection message (refer to the Paragraph 2.3).

If programming contents are wrong (i.e. a typing error in the file) or due to a transmission error, the device replies with the following message and programming data will not be updated in this case:

N<space>**ERRCODE**<CR><LF>

Where:

- **ERRCODE**: Error Code (signed DEC value).

For information on Error Codes see the "Error Codes Table" in the Appendix.

The '**Restore Default Configuration**' programming command must have the following format:

SD<space>**DEFNUM**<CR><LF>

Where:

- **SD**: Restore Default configuration command
- **DEFNUM**: Default configuration number. The only possible value is currently:

  0 = Factory Default

After entering this command, the device responds with the proper reply message and then waits for one or more programming strings.

If the programming is correct, the device updates the configuration and confirms with the following message:

Y<space>**DEFNUM**<CR><LF>

Where:

- **DEFNUM**: Default

If programming contents are wrong (i.e. a typing error in the file) or due to a transmission error, the device replies with the following message:

N<space>**ERRCODE**<CR><LF>

Where:

- **ERRCODE**: Error Code (signed DEC value)

For information on Error Codes see the "Error Codes Table" in the Appendix.



CAUTION: This programming command will be applied to all **Configuration** and **Environmental** parameters. Refer to the Genius™ Help On Line of the selected device for further details.

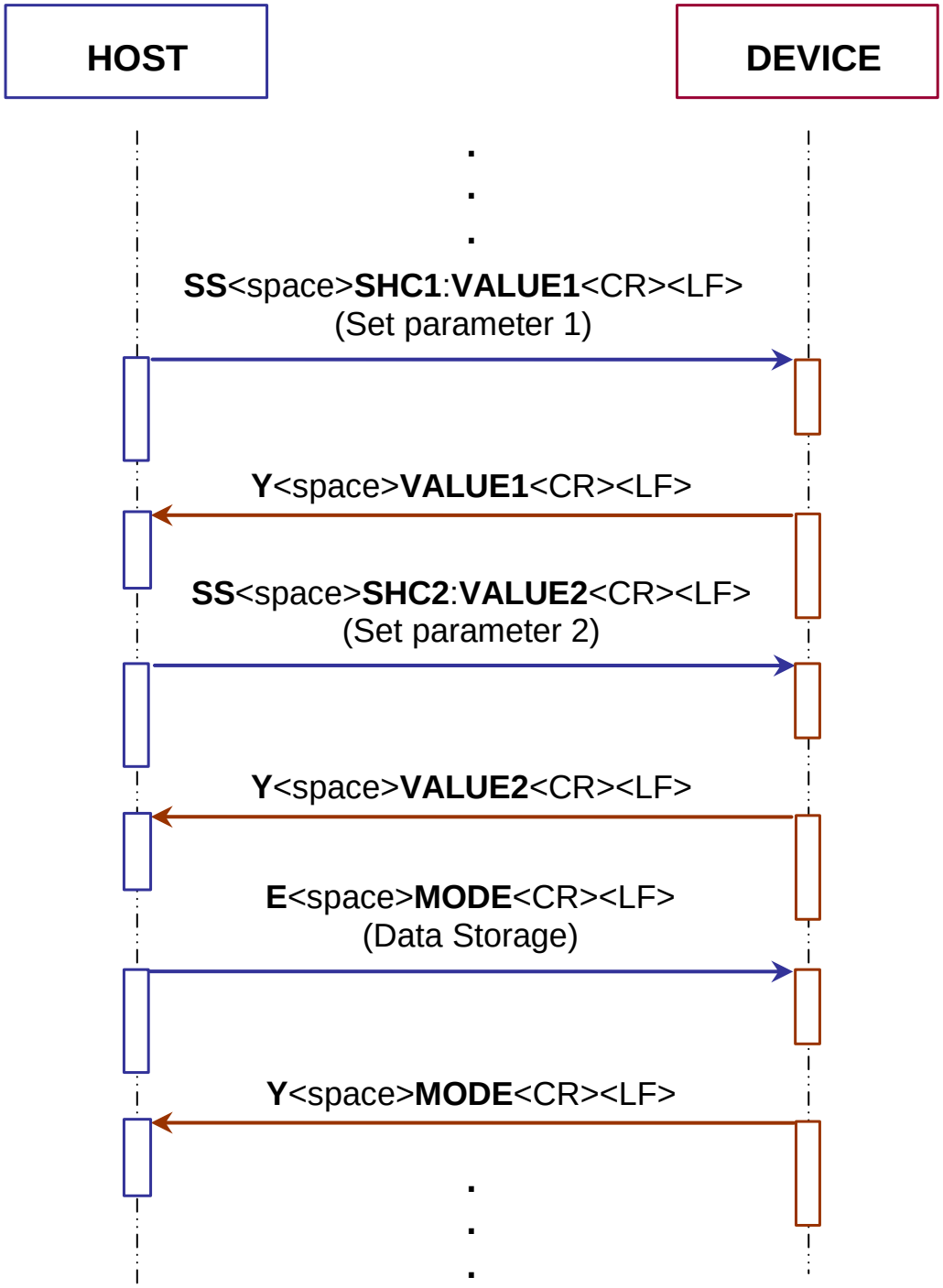


Figure 3 - Two Parameters Programming Session With Data Storage

3.6 EXAMPLES

- 1 -
Set *Minimum Label Length* parameter in CODE LABEL SETTING #2 folder:

Shortcut: 3
Type: 0 (Integer)
Range: 0 to 60
Value: 4

The 'Set Shortcut' programming string is:

SS<space>3#2:4<CR><LF>

After entering the programming string, the reader responds with the message:

Y<space>4<CR><LF>

- 2 -
Set *Operating Mode Selection* parameter in OPERATING MODES folder:

Shortcut: 31
Type: 1 (Enumeration)
Item List: 0 = On Line
1 = Automatic
3 = Test
4 = Continuous
Value: 0 (Entry 0 → On Line)

The 'Set Shortcut' programming string is:

SS<space>31:0<CR><LF>

After entering the programming string, the reader responds with the message:

Y<space>0<CR><LF>

- 3 -
Set *Device Name* parameter in USER INFORMATION SECTION folder:

Shortcut: 522
Type: 2 (String)
Length: 0 to 128
Value: 5K_FAMILY

The 'Set Shortcut' programming string is:

SS<space>522:5K_FAMILY<CR><LF>

After entering the programming string the reader responds with the message:

Y<space>5K_FAMILY<CR><LF>

- 4 -
Set *Header String* parameter in DATA FORMAT folder:

Shortcut: 6
Type: 3 (Binary String)
Length 0 to 128
Default: HEADER (HEX value: 48H 45H 41H 44H 45H 52H)

The 'Set Shortcut' programming string is:

SS<space>6:6<space>484541444552<CR><LF>

After enter the programming string, the reader responds with the message:

Y<space>6<space>484541444552<CR><LF>

- 5 -
Get value of *Operating Mode Selection* parameter in OPERATING MODES folder:

Shortcut: 31
Type: 1 (Enumeration)
Item List: 0 = On Line
1 = Automatic
3 = Test
4 = Continuous
CurrentValue: 0 (Entry 0 → On Line)

The 'Get Shortcut' programming string is:

GS<space>31<CR><LF>

After entering the programming string, the reader responds with the message:

Y<space>0<CR><LF>

- 6 -
Get value of *No Read String* parameter in CODE DEFINITION folder:

Shortcut: 9
Type: 3 (Binary String)
Current Value: Empty string

The 'Get Shortcut' programming string is:

GS<space>9<CR><LF>

After entering the programming string, the reader responds with the message:

Y<space>0<CR><LF>

4 PARAMETERS LIST

4.1 CODE DEFINITION

PARAMETER		SHC	PT	VALUE
CODE DEFINITION				
Code Combination		72	1	0 = Single Label 1 = Standard Multi Label 2 = Logical Combination 3 = Code Collection
Logical Combination Rule		191	2	Length: 0 to 64
No Read Message		14	1	0 = Disable No Read Message 1 = Global No Read Message 2 = Local No Read(s) Message
No Read String		9	3	Length: 0 to 128
Multiple Read Message		15	1	0 = Disable 1 = Enable
Multiple Read String		16	3	Length: 1 to 128
Codes Different When Scan Gap Is Greater Than		532	0	Range: 1 to 32765
Codes Different When Code Position Gap Is Greater Than		533	0	Range: 0 to 255
Associate Same Codes When Read By Different Scanners		534	1	0 = Disable 1 = Enable
LED INDICATION				
Partial Read Is Treated As		5037	1	0 = No Read 1 = Good Read
Multiple Read is treated as		5036	1	0 = No Read 1 = Good Read
LOCAL NO READ STRINGS #N (DEPTH: N = 1 to 15)				
Group Label Local No Read String		17 #N	3	Length: 0 to 48
LOCAL MULTIPLE READ STRINGS #N (DEPTH: N = 1 to 15)				
Group Label Local Multiple Read String		327 #N	3	Length: 0 to 48
FAMILY SETTING / CODE 128 - GS1-128 - ISBT 128				
Decoding Safety		5038	0	Range: 1 to 100
Decoding Severity		5039	0	Range: 1 to 5
Ink Spread Equalization		5040	1	0 = Disable 1 = Enable

PARAMETER		SHC	PT	VALUE
ISBT 128 Concatenation		5000	1	0 = Do Not Chain 2 = Mandatory Chain
Chain 1: Left -		5002	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID
Chain 1: - Right		5003	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID

PARAMETER		SHC	PT	VALUE
Chain 2: Left -		5004	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID
Chain 2: - Right		5005	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID
Chain 3: Left -		5006	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID

PARAMETER		SHC	PT	VALUE
Chain 3: - Right		5007	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID
Chain 4: Left -		5008	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID
Chain 4: - Right		5009	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID

PARAMETER		SHC	PT	VALUE
Chain 5: Left -		5010	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID
Chain 5: - Right		5011	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID
Chain 6: Left -		5012	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID

PARAMETER		SHC	PT	VALUE
Chain 6: - Right		5013	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID
Chain 7: Left -		5014	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID
Chain 7: - Right		5015	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID

PARAMETER		SHC	PT	VALUE
Chain 8: Left -		5016	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID
Chain 8: - Right		5017	1	0 = None 1 = Donation ID 2 = Blood Group 3 = Expiration Date 4 = Expiration Date-Time 5 = Collection Date 6 = Collection Date-Time 7 = Product Code 8 = Donor ID 9 = Manufacturer ID 10 = Manufacturer Lot 11=Staff Member 12=Nat. Product Code 13=Nat. Special Testing 14=Nat. Use Bar Code 15=Nat. CUE Status 16=Nat. Donor ID
FAMILY SETTING / INTERLEAVED 2 OF 5				
Decoding Safety		5041	0	Range: 1 to 100
Decoding Severity		5042	0	Range: 1 to 5
FAMILY SETTING / CODE 39 - CODE 39 FULL ASCII				
Decoding Safety		5043	0	Range: 1 to 100
Decoding Severity		5044	0	Range: 1 to 5
Inter Character Gap		5045	0	Range: 1 to 12
FAMILY SETTING / EAN-UPC				
Decoding Safety		5053	0	Range: 1 to 100
Decoding Severity		5054	0	Range: 1 to 5
Ink Spread Equalization		5055	1	0 = Disable 1 = Enable
Addon Overflow Start Ratio		5052	0	Range: 1 to 50

PARAMETER		SHC	PT	VALUE
Addon Overflow Stop Ratio		5275	0	Range: 1 to 50
Max Distance between EAN/UPC and Addon (in modules)		5198	0	Range: 1 to 256
FAMILY SETTING / CODABAR–ABC CODABAR				
Decoding Safety		5049	0	Range: 1 to 100
Decoding Severity		5050	0	Range: 1 to 5
Inter Character Gap		5051	0	Range: 1 to 12
ABC Codabar Concatenation		5001	1	0 = Do Not Chain 2 = Mandatory Chain
FAMILY SETTING / CODE 93				
Decoding Safety		5046	0	Range: 1 to 100
Decoding Severity		5047	0	Range: 1 to 5
Ink Spread Equalization		5048	1	0 = Disable 1 = Enable
FAMILY SETTING / PHARMACODE				
Decoding Safety		5056	0	Range: 1 to 100
Decoding Severity		5057	0	Range: 1 to 5
FAMILY SETTING / PLESSEY				
Decoding Safety		5271	0	Range: 1 to 100
Decoding Severity		5272	0	Range: 1 to 5
FAMILY SETTING / GS1 DATABAR				
Stacked Codes		5631	1	0 = Disable 1 = Enable
CODE LABEL SETTING #N (DEPTH: N = 1 to 10)				
Enable		1 #N	1	0 = Disable 1 = Enable

PARAMETER		SHC	PT	VALUE
Code Symbology		2 #N	1	0 = Code 128 1 = Interleaved 2 of 5 2 = Code 39 3 = Code GS1-128 4 = EAN-13 5 = EAN-8 6 = UPC-A 7 = UPC-E 8 = All EAN-UPC 9 = Codabar 10 = Code 93 16 = GS1 Databar 19 = Code 39 Full ASCII 20 = ABC Codabar 22 = ISBT 128 23 = Pharmacode 25 = Plessey 26 = GS1 Databar Limited 27 = GS1 Databar Expanded
EAN AddOn		32 #N	1	0 = No Add On 1 = 2 digits Add On 2 = 5 digits Add On
Label Length		70 #N	1	0 = Variable 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 … 60 = 60
Minimum Label Length		3 #N	0	Range: 1 to 60
Maximum Label Length		4 #N	0	Range: 1 to 60
Code 128, GS1-128 Label Length		5633 #N	1	0 = Variable 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 … 80 = 80
Code 128, GS1-128 Minimum Label Length		5634 #N	0	Range: 1 to 80
Code 128, GS1-128 Maximum Label Length		5635 #N	0	Range: 1 to 80

PARAMETER		SHC	PT	VALUE
GS1 Databar Expanded Label Length		5578 #N	1	0 = Variable 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 … 74 = 74
GS1 Databar Expanded Minimum Label Length		5579 #N	0	Range: 2 to 74
GS1 Databar Expanded Maximum Label Length		5580 #N	0	Range: 2 to 74
Bar Count (only for Code 128, GS1-128)		5641 #N	1	0 = Variable 1 = 25 2 = 31 3 = 37 4 = 43 5 = 49 6 = 55 7 = 61 8 = 67 9 = 73 10 = 79 11 = 85 12 = 91 13 = 97 14 = 103 15 = 109 16 = 115 17 = 121 18 = 127 19 = 133 20 = 139 21 = 145 22 = 151 23 = 157 24 = 163 25 = 169 26 = 175 27 = 181 28 = 187 29 = 193 30 = 199 31 = 205 32 = 211 33 = 217 34 = 223 35 = 229 36 = 235 37 = 241 38 = 247

PARAMETER		SHC	PT	VALUE
				39 = 253 40 = 259 41 = 265 42 = 271 43 = 277 44 = 283 45 = 289 46 = 295 47 = 301 48 = 307 49 = 313 50 = 319 51 = 325 52 = 331 53 = 337 54 = 343 55 = 349 56 = 355 57 = 361 58 = 367 59 = 373 60 = 379 61 = 385 62 = 391 63 = 397 64 = 403 65 = 409 66 = 415 67 = 421 68 = 427 69 = 433 70 = 439 71 = 445 72 = 451 73 = 457 74 = 463 75 = 469 76 = 475 77 = 481 78 = 487 79 = 493 80 = 499
Bar Count (only for CODE 93, ISBT 128)		71 #N	1	0 = Variable 1 = 25 2 = 31 3 = 37 4 = 43 5 = 49 6 = 55 7 = 61 8 = 67 9 = 73 10 = 79

PARAMETER		SHC	PT	VALUE
				11 = 85 12 = 91 13 = 97 14 = 103 15 = 109 16 = 115 17 = 121 18 = 127 19 = 133 20 = 139 21 = 145 22 = 151 23 = 157 24 = 163 25 = 169 26 = 175 27 = 181 28 = 187 29 = 193 30 = 199 31 = 205 32 = 211 33 = 217 34 = 223 35 = 229 36 = 235 37 = 241 38 = 247 39 = 253 40 = 259 41 = 265 42 = 271 43 = 277 44 = 283 45 = 289 46 = 295 47 = 301 48 = 307 49 = 313 50 = 319 51 = 325 52 = 331 53 = 337 54 = 343 55 = 349 56 = 355 57 = 361 58 = 367 59 = 373 60 = 379 61 = 385

PARAMETER		SHC	PT	VALUE
Bar Count (only for Code 39 Full ASCII)		85 #N	1	0 = Variable 1 = 29 2 = 39 3 = 49 4 = 59 5 = 69 6 = 79 7 = 89 8 = 99 9 = 109 10 = 119 11 = 129 12 = 139 13 = 149 14 = 159 15 = 169 16 = 179 17 = 189 18 = 199 19 = 209 20 = 219 21 = 229 22 = 239 23 = 249 24 = 259 25 = 269 26 = 279 27 = 289 28 = 299 29 = 309 30 = 319 31 = 329 32 = 339 33 = 349 34 = 359 35 = 369 36 = 379 37 = 389 38 = 399 39 = 409 40 = 419 41 = 429 42 = 439 43 = 449 44 = 459 45 = 469 46 = 479 47 = 489 48 = 499 49 = 509 50 = 519 51 = 529 52 = 539

PARAMETER		SHC	PT	VALUE
				53 = 549 54 = 559 55 = 569 56 = 579 57 = 589 58 = 599 59 = 609 60 = 619
Min Code Position Filter		262 #N	0	Range: 0 to 255
Max Code Position Filter		263 #N	0	Range: 0 to 255
Check Digit		5 #N	1	0 = Disable 1 = Enable
Check Digit Type (only for Interleaved 2 of 5)		526 #N	1	0 = Standard 1 = German 2 = DHL 3 = Daimler-Chrysler 4 = Bosch
Check Digit Type (only for Code 39)		527 #N	1	0 = Standard 1 = Mod 7
Check Digit Transmission		524 #N	1	0 = Disable 1 = Enable
Match String Rule		530 #N	1	0 = Match 1 = Do Not Match
Pattern Match String		531 #N	3	Length: 0 to 200
Match Direction Rule		529 #N	1	0 = Disable 1 = Forward 2 = Reverse
Code Label Local No Read String		18 #N	3	Length: 0 to 48
Code Label Local Multiple Read String		328 #N	3	Length: 0 to 48
Start Character Transmission (only for Codabar)		382 #N	1	0 = Disabled 2 = Lower Case 3 = Upper Case
Stop Character Transmission (only for Codabar)		383 #N	1	0 = Disabled 2 = Lower Case 3 = Upper Case

4.2 OPERATING MODES

PARAMETER		SHC	PT	VALUE
OPERATING MODES				
Operating Mode Selection	PackTrack selection only for 24xx models in EBC networks	31	1	0 = On Line 1 = Automatic 3 = Test 4 = Continuous 5=Packtrack
On Line Options		73	1	0 = On Line 1 input 2 = Serial On Line
Test Mode Data Transmission		500	1	0 = All Selected Channels 2 = Disable
Serial Start String		86	3	Length: 1 to 32
Serial Stop String		87	3	Length: 1 to 32
Reading Phase Timeout		78	1	0 = Disable 1 = Enable
Timeout (ms)		79	0	Range: 40 to 15000
Timeout Counting From		5119	1	0 = Start 1 = Stop
Stop Priority		80	1	0 = Input/SerialStop 1 = Always Timeout
Automatic Threshold	(number of scans)	501	0	Range: 10 to 32765
Start Input from FieldBus		5919	1	0 = Disable 1 = Enable
Continuous Threshold	(number of scans)	5185	0	Range: 10 to 32765
Code Filter Depth		502	0	Range: 0 to 10
ACK/NAK Protocol		5114	1	0 = Disable 1 = Enable
Quality Counters		5116	1	0 = Disable 1 = Enable
VERIFIER				
Enable		5121	1	0 = Disable 1 = Enable
Verifier Code		5126	3	Length: 1 to 128
Right Code Tx		5560	1	0 = Disable 1 = Enable
Wrong Code Tx		5123	1	0 = Disable 1 = Enable
Wrong String Tx		5122	1	0 = Disable 1 = Enable
Wrong String		5128	3	Length: 1 to 128

4.3 READING PARAMETERS

PARAMETER		SHC	PT	VALUE
READING PARAMETERS				
Scan Speed (Scans Per Second)		5252	1	0=Off 80=800 (Default)
Energy Saving		5129	1	0 = Disable 1 = Enable
Serial Motor ON String		5133	3	Length: 0 to 32
Serial Motor OFF String		5132	3	Length: 0 to 32
Code Resolution		5024	1	0 = Standard 1 = High 2 = Toggle
Reading Conditions		5023	1	0 = Standard 1 = Difficult 2 = Toggle (Standard/Difficult) 3 = Dark Background 4 = Toggle (Standard/Dark Background) 5 = Toggle (Difficult/Dark Background) 6 = Toggle All (Standard/Difficult/ Dark Background)
Beam Shutter		8	1	0 = Disable 1 = Triggered 2 = Enable
Overflow Start Ratio		286	0	Range: 1 to 50
Overflow Stop Ratio		604	0	Range: 1 to 50
Required Quiet Zones		5131	1	0 = Both 1 = One
Overflow Ratio		5130	0	Range: 3 to 32
Reading Mode		285	1	0 = Reconstruction 1 = Linear
Deflection Mirror		5602	1	0 = Disabled 1 = Enable
High Skew Angle			1	0=Disabled 1=Enabled
FOCUS				
Locked Position Medium Range Models (cm/in)		5203	1	0=Unlocked 23=23/9.05 24=24/9.44 25=25/9.84 26=26/10.24 27=27/10.63 28=28/11.02 29=29/11.42 30=30/11.81 31=31/12.20 32=32/12.60 33=33/12.99

PARAMETER		SHC	PT	VALUE
				34=34/13.39 35=35/13.78 36=36/14.17 37=37/14.57 38=38/14.96 39=39/15.35 40=40/15.75 41=41/16.14 42=42/16.54 43=43/16.93 44=44/17.32 45=45/17.72 46=46/18.11 47=47/18.50 48=48/18.90 49=49/19.29 50=50/19.69 51=51/20.08 52=52/20.47 53=53/20.87 54=54/21.26 55=55/21.65 56=56/22.05 57=57/22.44 58=58/22.83 59=59/23.23 60=60/23.62 61=61/24.02 62=62/24.41 63=63/24.80 64=64/25.20 65=65/25.59 66=66/25.98 67=67/26.38 68=68/26.77 69=69/27.17 70=70/27.56 71=71/27.95 72=72/28.34 73=73/28.74 74=74/29.13 75=75/29.52
Locked Position Long Range Models (cm/in)		5923	1	0=Unlocked 33=33/12.99 34=34/13.39 35=35/13.78 36=36/14.17 37=37/14.57 38=38/14.96 39=39/15.35 40=40/15.75 41=41/16.14 42=42/16.54

PARAMETER		SHC	PT	VALUE
				43=43/16.93 44=44/17.32 45=45/17.72 46=46/18.11 47=47/18.50 48=48/18.90 49=49/19.29 50=50/19.69 51=51/20.08 52=52/20.47 53=53/20.87 54=54/21.26 55=55/21.65 56=56/22.05 57=57/22.44 58=58/22.83, 59=59/23.23 60=60/23.62 61=61/24.02 62=62/24.41 63=63/24.80 64=64/25.20 65=65/25.59 66=66/25.98 67=67/26.38 68=68/26.77 69=69/27.17 70=70/27.56 71=71/27.95 72=72/28.35 73=73/28.74 74=74/29.13 75=75/29.53 76=76/26.92 77=77/30.31 78=78/30.71 79=79/31.10 80=80/31.50 81=81/31.89 82=82/32.28 83=83/32.68 84=84/33.07 85=85/33.46 86=86/33.85 87=87/34.25 88=88/34.64 89=89/35.03 90=90/35.43
OSCILLATING MIRROR				
Oscillating Mode		5360	1	1 = Fixed 2 = Continuous

PARAMETER		SHC	PT	VALUE
Angle (Degrees)(Fixed Mode)		5361	1	0=-5 1=-4.5 2=-4 3=-3.5 4=-3 5=-2.5 6=-2 7=-1.5 8=-1 9=-0.5 10=0 11=0.5 12=1 13=1.5 14=2 15=2.5 16=3 17=3.5 18=4 19=4.5 20=5 21=5.5 22=6 23=6.5 24=7 25=7.5 26=8 27=8.5 28=9 29=9.5 30=10 31=10.5 32=11 33=11.5 34=12 35=12.5 36=13 37=13.5 38=14 39=14.5 40=15 41=15.5 42=16 43=16.5 44=17 45=17.5 46=18 47=18.5 48=19 49=19.5 50=20 51=20.5 52=21

PARAMETER		SHC	PT	VALUE
				53=21.5 54=22 55=22.5 56=23 57=23.5 58=24 59=24.5 60=25 61=25.5 62=26 63=26.5 64=27 65=27.5 66=28 67=28.5 68=29 69=29.5 70=30 71=30.5 72=31 73=31.5 74=32 75=32.5 76=33 77=33.5 78=34 79=34.5 80=35
Min Angle (Degrees)		5362	1	0 = -5 1 = -4.5 2 = -4 3 = -3.5 4=-3 5=-2.5 6=-2 7=-1.5 8=-1 9=-0.5 10=0 11=0.5 12=1 13=1.5 14=2 15=2.5 16=3 17=3.5 18=4 19=4.5 20=5 21=5.5 22=6 23=6.5 24=7

PARAMETER		SHC	PT	VALUE
				25=7.5 26=8 27=8.5 28=9 29=9.5 30=10 31=10.5 32=11 33=11.5 34=12 35=12.5 36=13 37=13.5 38=14 39=14.5 40=15 41=15.5 42=16 43=16.5 44=17 45=17.5 46=18 47=18.5 48=19 49=19.5 50=20 51=20.5 52=21 53=21.5 54=22 55=22.5 56=23 57=23.5 58=24 59=24.5 60=25 61=25.5 62=26 63=26.5 64=27 65=27.5 66=28 67=28.5 68=29 69=29.5 70=30 71=30.5 72=31 73=31.5 74=32 75=32.5, 76=33 77=33.5

PARAMETER		SHC	PT	VALUE
				78=34 79=34.5 80=35
Max Angle (Degrees)		5363	1	0=-5 1=-4.5 2=-4 3=-3.5 4=-3 5=-2.5 6=-2 7=-1.5 8=-1 9=-0.5 10=0 11=0.5 12=1 13=1.5 14=2 15=2.5 16=3 17=3.5 18=4 19=4.5 20=5 21=5.5 22=6 23=6.5 24=7 25=7.5 26=8 27=8.5 28=9 29=9.5 30=10 31=10.5 32=11 33=11.5 34=12 35=12.5 36=13 37=13.5 38=14 39=14.5 40=15 41=15.5 42=16 43=16.5 44=17 45=17.5 46=18 47=18.5 48=19 49=19.5

PARAMETER		SHC	PT	VALUE
				50=20 51=20.5 52=21 53=21.5 54=22 55=22.5 56=23 57=23.5 58=24 59=24.5 60=25 61=25.5 62=26 63=26.5 64=27 65=27.5 66=28 67=28.5 68=29 69=29.5 70=30 71=30.5 72=31 73=31.5 74=32 75=32.5 76=33 77=33.5 78=34 79=34.5 80=35

PARAMETER		SHC	PT	VALUE
Frequency (Hz)		5364	1	2=0.2 5=0.5 7=0.7 10=1 15=1.5 20=2 25=2.5 30=3 35=3.5 40=4 45=4.5 50=5 55=5.5 60=6 65=6.5 70=7 75=7.5 80=8 85=8.5 90=9 95=9.5 100=10 110=11 120=12 130=13 140=14 150=15 160=16 170=17 180=18 190=19 200=20
Triggered		5365	1	0 = Disable 1 = Enable
Second Zone Trigger		5366	1	0 = Phase 1 = Input 1
Second Zone Trigger Level		5367	1	0 = Active Closed 1 = Active Open
Second Zone Oscillating Mode		5368	1	1 = Fixed 2 = Continuous
Second Zone Angle (Degrees) Fixed Mode		5369	1	0 = -5 1 = -4.5 2 = -4 3 = -3.5 4=-3 5=-2.5 6=-2 7=-1.5 8=-1 9=-0.5 10=0 11=0.5 12=1

PARAMETER		SHC	PT	VALUE
				13=1.5 14=2 15=2.5 16=3 17=3.5 18=4 19=4.5 20=5 21=5.5 22=6 23=6.5 24=7 25=7.5 26=8 27=8.5 28=9 29=9.5 30=10 31=10.5 32=11 33=11.5 34=12 35=12.5 36=13 37=13.5 38=14 39=14.5 40=15 41=15.5 42=16 43=16.5 44=17 45=17.5 46=18 47=18.5 48=19 49=19.5 50=20 51=20.5 52=21 53=21.5 54=22 55=22.5 56=23 57=23.5 58=24 59=24.5 60=25 61=25.5 62=26 63=26.5 64=27 65=27.5

PARAMETER		SHC	PT	VALUE
				66=28 67=28.5 68=29 69=29.5 70=30 71=30.5 72=31 73=31.5 74=32 75=32.5, 76=33 77=33.5 78=34 79=34.5 80=35
Second Zone Min Angle (Degrees)		5380	1	0 = -5 1 = -4.5 2 = -4 3 = -3.5 4=-3 5=-2.5 6=-2 7=-1.5 8=-1 9=-0.5 10=0 11=0.5 12=1 13=1.5 14=2 15=2.5 16=3 17=3.5 18=4 19=4.5 20=5 21=5.5 22=6 23=6.5 24=7 25=7.5 26=8 27=8.5 28=9 29=9.5 30=10 31=10.5 32=11 33=11.5 34=12 35=12.5 36=13 37=13.5

PARAMETER		SHC	PT	VALUE
				38=14 39=14.5 40=15 41=15.5 42=16 43=16.5 44=17 45=17.5 46=18 47=18.5 48=19 49=19.5 50=20 51=20.5 52=21 53=21.5 54=22 55=22.5 56=23 57=23.5 58=24 59=24.5 60=25 61=25.5 62=26 63=26.5 64=27 65=27.5 66=28 67=28.5 68=29 69=29.5 70=30 71=30.5 72=31 73=31.5 74=32 75=32.5, 76=33 77=33.5 78=34 79=34.5 80=35
Second Zone Max Angle (Degrees)		5381	1	0 = -5 1 = -4.5 2 = -4 3 = -3.5 4=-3 5=-2.5 6=-2 7=-1.5 8=-1 9=-0.5

PARAMETER		SHC	PT	VALUE
				10=0 11=0.5 12=1 13=1.5 14=2 15=2.5 16=3 17=3.5 18=4 19=4.5 20=5 21=5.5 22=6 23=6.5 24=7 25=7.5 26=8 27=8.5 28=9 29=9.5 30=10 31=10.5 32=11 33=11.5 34=12 35=12.5 36=13 37=13.5 38=14 39=14.5 40=15 41=15.5 42=16 43=16.5 44=17 45=17.5 46=18 47=18.5 48=19 49=19.5 50=20 51=20.5 52=21 53=21.5 54=22 55=22.5 56=23 57=23.5 58=24 59=24.5 60=25 61=25.5 62=26

PARAMETER		SHC	PT	VALUE
				63=26.5 64=27 65=27.5 66=28 67=28.5 68=29 69=29.5 70=30 71=30.5 72=31 73=31.5 74=32 75=32.5, 76=33 77=33.5 78=34 79=34.5 80=35
Second Zone Frequency (Hz)		5382	1	2=0.2 5=0.5 7=0.7 10=1 15=1.5 20=2 25=2.5 30=3 35=3.5 40=4 45=4.5 50=5 55=5.5 60=6 65=6.5 70=7 75=7.5 80=8 85=8.5 90=9 95=9.5 100=10 110=11 120=12 130=13 140=14 150=15 160=16 170=17 180=18 190=19 200=20

PARAMETER		SHC	PT	VALUE
RECONSTRUCTION PARAMETERS				
Stacked Codes Enhancement		504	1	0 = Disable 1 = Enable
SCAN LINE AMPLITUDE				
Laser Turn On Position		283	0	Range: 0 to255
Laser Turn Off Position		284	0	Range: 0 to255

4.4 DATA COMMUNICATION SETTING

PARAMETER		SHC	PT	VALUE
DATA FORMAT				
Header TX Start		505	1	0 = With Data 1 = After Reading Phase On
Termination after No Read Message		506	1	0 = Disable 1 = Enable
Message TX selection	(On Line Operating Mode)	5922		0 = On Decoding 1 = After Reading Phase Off
Message TX Selection	(Automatic Operating Mode)	543	1	0 = On Decoding 1 = After Reading Phase Off
Format Type		330	1	0 = Standard 1 = Advanced
Code Identifier		399	1	0 = Disabled 1 = Standard AIM ID 2 = Custom
DATA FORMAT / CUSTOM CODE IDENTIFIER STRINGS				
Code 128 Identifier String		400	3	Length: 1 to 32
Code IL 2/5 Identifier String		401	3	Length: 1 to 32
Code 39 Standard Identifier String		402	3	Length: 1 to 32
Code GS1-128 Identifier String		403	3	Length: 1 to 32
Code EAN 13 Identifier String		404	3	Length: 1 to 32
Code EAN 8 Identifier String		405	3	Length: 1 to 32
Code UPCA Identifier String		406	3	Length: 1 to 32
Code UPCE Identifier String		407	3	Length: 1 to 32
Code Codabar Identifier String		409	3	Length: 1 to 32
Code 93 Identifier String		410	3	Length: 1 to 32
Code EAN 13 Addon 2 Identifier String		419	3	Length: 1 to 32
Code EAN 8 Addon 2 Identifier String		420	3	Length: 1 to 32
Code UPC A Addon 2 Identifier String		421	3	Length: 1 to 32

PARAMETER		SHC	PT	VALUE
Code UPC E Addon 2 Identifier String		422	3	Length: 1 to 32
Code EAN 13 Addon 5 Identifier String		423	3	Length: 1 to 32
Code EAN 8 Addon 5 Identifier String		424	3	Length: 1 to 32
Code UPC A Addon 5 Identifier String		425	3	Length: 1 to 32
Code UPC E Addon 5 Identifier String		426	3	Length: 1 to 32
Code 39 Full ASCII Identifier String		427	3	Length: 1 to 32
Code ISBT 128 Identifier String		428	3	Length: 1 to 32
ABC Codabar Identifier String		429	3	Length: 1 to 32
Pharmacode Identifier String		431	3	Length: 1 to 32
Plessey Identifier String		432	3	Length: 1 to 32
GS1 DataBar Identifier String		441	3	Length: 1 to 32
GS1 DataBar Limited Identifier String		444	3	Length: 1 to 32
GS1 DataBar Exp. Identifier String		445	3	Length: 1 to 32
DATA FORMAT / STANDARD PARAMETERS				
Header String		6	3	Length: 0 to 128
Code Position Tx		547	1	0 = Disable 1 = Enable
Code Direction Identifier Enable		508	1	0 = Disable 1 = Enable
Forward Direction String		509	3	Length: 1 to 32
Reverse Direction String		528	3	Length: 1 to 32
Unknown Direction String		550	3	Length: 1 to 32
Motor OFF Message		548	1	0 = Disable 1 = Enable
Motor OFF String		549	3	Length: 0 to 128
Termination String		7	3	Length: 0 to 128
Data packet Separators		82	3	Length: 0 to 128
Info Field Separators		83	3	Length: 0 to 128
Code Field Separators		5249	3	Length: 0 to 128
Code Field Length Setting		45	1	1 = Fixed Length 0 = Variable Length
Code Field Length		46	0	Range: 0 to 60

PARAMETER		SHC	PT	VALUE
Data Justification		47	1	0 = Left 1 = Right
Fill Character		48	3	Length: 1
PROFINET-IO				
PROFINET-IO / LINE PARAMETERS				
MAC	(READ ONLY)	5.841	2	-
Baud Rate	(READ ONLY)	5844	1	-
IP Addressing		5845	1	0 = Static Assignment 1 = DHCP
IP Address		5846	2	Max Length: 16
IP Netmask		5847	2	Max Length: 16
IP Gateway		5848	2	Max Length: 16
IP dns1		5849	2	Max Length: 16
IP dns2		5850	2	Max Length: 16
Station Name		5851	2	Max Length: 240
PROFINET-IO / FIELDBUS				
Status		5855	1	0 = Disable 1 = Enable
Data Tx		5856	1	0 = Disable 1 = Enable
Heartbeat		5857	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned
PROFINET-IO / FIELDBUS / HEARTBEAT				
Timeout (s)		5858	0	Range: 1 to 3600
Heartbeat Header String		5859	3	Length: 1 to 128
Heartbeat Fields Separator		5860	3	Length: 1 to 128
Counter Module		5861	1	0 = Disable 1 = 10 2 = 100 3 = 1000 4 = 10000 5 = Custom
Custom Counter Module		5862	0	Range: 2 to 10000
Counter Starting Value		5863	0	Range: 0 to 9999
Counter Direction		5864	1	0 = Up 1 = Down
System Diagnostics		5865	1	0 = Disable 1 = Enable
Heartbeat Terminator String		5866	3	Length: 1 to 128

PARAMETER		SHC	PT	VALUE
PROFINET-IO / FIELDBUS / BUS COMMUNICATION				
Master Input Area Size		5868	1	1 = 8 2 = 16 3 = 32 4 = 64 5 = 128 6 = 256 7 = 512
Master Output Area Size		5869	1	1 = 8 2 = 16 3 = 32 4 = 64 5 = 128 6 = 256 7 = 512
Data Flow Control		5870	1	0 = Disable 2 = DAD Driver
Data Consistency		5915	1	0 = Disable 1 = Enable
PROFINET-IO / FIELDBUS / DIGITAL I/O CONDITIONING				
DIGITAL INPUT LINES				
Input 1 Echo		5928	1	0 = Disable 1 = Enable
Phase Echo		5930		0 = Disable 1 = Enable
PROFINET-IO / TCP/IP SERVICES / USERSOCKET#1				
Status		5878	1	0 = Disable 1 = Enable
Data Tx		5879	1	0 = Disable 1 = Enable
Heartbeat		5914	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned
Type		5880	1	0 = Server 1 = Client
Server Address		5881	2	Max Length: 256
Protocol		5882	1	0 = TCP 1 = UDP
Port		5883	0	Range: 0 to 64538
Use As WebSentinel Client		5884	1	0 = Disable 1 = Enable
Partial Read is treated as		5885	1	0 = No Read 1 = Good Read 3 = Partial Read"
PROFINET-IO / TCP/IP SERVICES / USERSOCKET#1 / HEARTBEAT				
Timeout (s)		5886	0	Range: 1 to 3600
Heartbeat Header String		5887	3	Length: 1 to 128

PARAMETER		SHC	PT	VALUE
Heartbeat Fields Separator		5888	3	Length: 1 to 128
Counter Module		5889	1	0 = Disable 1 = 10 2 = 100 3 = 1000 4 = 10000 5 = Custom
Custom Counter Module		5890	0	Range: 2 to 10000
Counter Starting Value		5891	0	Range: 0 to 9999
Counter Direction		5892	1	0 = Up 1 = Down
System Diagnostics		5893	1	0 = Disable 1 = Enable
Heartbeat Terminator String		5894	3	Length: 1 to 128
PROFINET-IO / TCP/IP SERVICES / USERSOCKET#2				
Status		5899	1	0 = Disable 1 = Enable
Data Tx		5900	1	0 = Disable 1 = Enable
Heartbeat		5898	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned
Type		5901	1	0 = Server 1 = Client
Server Address		5913	2	Max Length: 256
Protocol		5902	1	0 = TCP 1 = UDP
Port		5903	0	Range: 0 to 64538
PROFINET-IO / TCP/IP SERVICES / USERSOCKET#2 / HEARTBEAT				
Timeout (s)		5904	0	Range: 1 to 3600
Heartbeat Header String		5905	3	Length: 1 to 128
Heartbeat Fields Separator		5906	3	Length: 1 to 128
Counter Module		5907	1	0 = Disable 1 = 10 2 = 100 3 = 1000 4 = 10000 5 = Custom
Custom Counter Module		5908	0	Range: 2 to 10000
Counter Starting Value		5909	0	Range: 0 to 9999
Counter Direction		5910	1	0 = Up 1 = Down

PARAMETER		SHC	PT	VALUE
System Diagnostics		5911	1	0 = Disable 1 = Enable
Heartbeat Terminator String		5912	3	Length: 1 to 128
BUILT-IN DIGITAL INPUT LINES				
Input 1 Active Level Overridden by Operating Mode		229	1	0 = Active Closed 1 = Active Open
Debounce Filter (ms)		5035	0	Range: 5 to 1000

4.5 SYSTEM INFORMATION SECTION

PARAMETER		SHC	PT	VALUE
DEVICE INFORMATION				
Detected Model	(READ ONLY)	5169	2	Max Length: 32
Serial Number	(READ ONLY)	5172	2	Max Length: 32

See paragraph 3.3 on how to access all the above mentioned parameters

4.6 LEDS AND KEYPAD

PARAMETER		SHC	PT	VALUE
LEDS AND KEYPAD				
Key Functionality		5111	1	1 = Unlocked 0 = Partially Locked 2 = Locked
Test Mode Data TX		5112	1	0 = Disable 4 = All Channels
Test Mode Exit Menu Timeout		5184	1	0 = Disable 5 = 5 sec 10 = 10 sec 30 = 30 sec 60 = 1 min 120 = 2 min 300 = 5 min 600 = 10 min
Auto Learn Exit Menu Timeout		5182	1	0 = Disable 5 = 5 sec 10 = 10 sec 30 = 30 sec 60 = 1 min 120 = 2 min 300 = 5 min 600 = 10 min
Reset LED Reading Result Timeout		5183	1	0 = Disable 5 = 5 sec 10 = 10 sec 30 = 30 sec 60 = 1 min 120 = 2 min 300 = 5 min 600 = 10 min

4.7 DISPLAY

PARAMETER		SHC	PT	VALUE
DISPLAY				
Display Language		5199	1	0 = English (United States) 1 = French (France) 2 = German (Germany) 3 = Italian (Italy) 4 = Japanese (Japan)
Contrast (Local Device)		5201	0	Range: 5 to 45

4.8 DIAGNOSTICS

PARAMETER		SHC	PT	VALUE
DIAGNOSTICS				
Enable		5100	1	0 = Disable 1 = Enable
Refresh Time		5110	1	1 = 1 sec 2 = 2 sec 5 = 5 sec 10 = 10 sec 30 = 30 sec 60 = 1 min
Motor Failure		5106	1	0 = Disable 1 = Enable
Laser Failure		5104	1	0 = Disable 1 = Enable
Oscillating Mirror Failure		5108	1	0 = Disable 1 = Enable
Oscillating Mirror Data Consistency Error		5414	1	0 = Disable 1 = Enable
Focus Displacement		5206	1	0 = Disable 1 = Enable
DIGITIZER: Motor Failure		5207	1	0 = Disable 1 = Enable
DIGITIZER: Motor Life End		5208	1	0 = Disable 1 = Enable
DIGITIZER: Laser Failure		5209	1	0 = Disable 1 = Enable
DIGITIZER: Laser Life End		5210	1	0 = Disable 1 = Enable
DIGITIZER: Data Consistency Error		5211	1	0 = Disable 1 = Enable
DIGITIZER: Data Write Error		5212	1	0 = Disable 1 = Enable
DIGITIZER: Communication Error		5213	1	0 = Disable 1 = Enable
DIGITIZER: Reset		5214	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Motor Failure		5215	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Motor Life End		5216	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Data Consistency Error		5217	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Data Write Error		5218	1	0 = Disable 1 = Enable

PARAMETER		SHC	PT	VALUE
OSCILLATING MIRROR: Communication Error		5219	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Reset		5220	1	0 = Disable 1 = Enable
Reading Conditions Controller: Communication Error		5221	1	0 = Disable 1 = Enable
Focus Controller: Communication Error		5222	1	0 = Disable 1 = Enable
Temperature Sensor: Communication Error		5223	1	0 = Disable 1 = Enable
Laser Temperature Sensor: Communication Error		5536	1	0 = Disable 1 = Enable
Temperature Sensors Mismatch Error		5543	1	0 = Disable 1 = Enable
High Temperature Warning		5539	1	0 = Disable 1 = Enable
Low Power Supply Alarm		5540	1	0 = Disable 1 = Enable
Long Warm-up Alarm		5541	1	0 = Disable 1 = Enable
Heater Failure		5542	1	0 = Disable 1 = Enable
ACTIONS				
TX Mode		5096	1	0 = On Timeout 1 = With Code"
TX Refresh		5092	1	1 = 1 sec 2 = 2 sec 5 = 5 sec 10 = 10 sec 20 = 20 sec 30 = 30 sec 60 = 1 min 300 = 5 min
Message Position		5095	1	0 = Append to Code 1 = Replace Code 2 = Insert before the Code
Fieldbus		5358	1	0 = Disable 1 = Enable

PARAMETER		SHC	PT	VALUE
ACTIONS / BUILT-IN ETHERNET				
UserSocket#1		5818	1	0 = Disable 1 = Enable
UserSocket#2		5819	1	0 = Disable 1 = Enable
FORMAT				
Header String		5101	3	Length: 1 to 128
Terminator String		5102	3	Length: 1 to 128
No Failure String		5604	3	Length: 0 to 32
Node Identification		5253	1	0=Address 1=Description
Diagnostic Message Format		5080	1	0 = Internal Numeric Messages 1 = User Defined Messages 2 = Compact
FORMAT / USER DEFINED MESSAGES				
No Phase Warning		5087	3	Length: 1 to 128
Focus Displacement		5225	3	Length: 1 to 128
DIGITIZER: Motor Failure		5226	3	Length: 1 to 128
DIGITIZER: Motor Life End		5227	3	Length: 1 to 128
DIGITIZER: Laser Fail		5228	3	Length: 1 to 128
DIGITIZER: Laser Life End		5229	3	Length: 1 to 128
DIGITIZER: Data Consistency Error		5230	3	Length: 1 to 128
DIGITIZER: Data Write Error		5231	3	Length: 1 to 128
DIGITIZER: Communication Error		5232	3	Length: 1 to 128
DIGITIZER: Reset		5233	3	Length: 1 to 128
OSCILLATING MIRROR: Motor Failure		5234	3	Length: 1 to 128
OSCILLATING MIRROR: Motor Life End		5235	3	Length: 1 to 128
OSCILLATING MIRROR: Data Consistency Error		5236	3	Length: 1 to 128
OSCILLATING MIRROR: Data Write Error		5237	3	Length: 1 to 128

PARAMETER		SHC	PT	VALUE
OSCILLATING MIRROR: Communication Error		5238	3	Length: 1 to 128
OSCILLATING MIRROR: Reset		5239	3	Length: 1 to 128
Reading Conditions Controller: Communication Error		5240	3	Length: 1 to 128
Focus Controller: Communication Error		5241	3	Length: 1 to 128
Temperature Sensor: Communication Error		5242	3	Length: 1 to 128
Laser Temperature Sensor: Communication Error		5537	3	Length: 1 to 128
Temperature Sensors Mismatch Error		5544	3	Length: 1 to 128
High Temperature Warning		5546	3	Length: 1 to 128
Low Power Supply Alarm		5547	3	Length: 1 to 128
Long Warm-up Alarm		5548	3	Length: 1 to 128
Heater Failure		5549	3	Length: 1 to 128

4.9 STATISTICS

PARAMETER		SHC	PT	VALUE
STATISTICS				
Enable		217	1	0 = Disable 1 = Enable
Separator		5141	3	Length: 0 to 32
Time (hh mm)		5134	1	0 = Disable 1 = Enable
Phase Counter		5140	1	0 = Disable 1 = Enable
Good Read Counter		5135	1	0 = Disable 1 = Enable
Partial Read Counter		5139	1	0 = Disable 1 = Enable
No Read Counter		5138	1	0 = Disable 1 = Enable
Motor OFF Counter		5136	1	0 = Disable 1 = Enable
Multiple Read Counter		5137	1	0 = Disable 1 = Enable

4.10 USER INFORMATION SECTION

PARAMETER		SHC	PT	VALUE
USER INFORMATION SECTION				
User Name		521	2	Length: 0 to 32
Device Name		522	2	Length: 0 to 128
Line Name		523	2	Length: 0 to 128

A SPECIAL COMMANDS AND TABLES

CONTROL RULES TABLE

This paragraph provides a list of the most important control rules that can be applied to the 5K Profinet-IO scanner parameters.

PARAMETER	CONTROL RULES
CODE DEFINITION	
No Read Message	Must be ≠ *Local No Read(s) Message* if Code Combination = *Single Label*. Must be ≠ *Local No Read(s) Message* if Code Combination = *Code Collection*.
CODE LABEL SETTINGS #N (DEPTH: n = 1 to 10)	
Minimum Label Length	Value must be ≤ Maximum Label Length
Maximum Label Length	Value must be ≥ Minimum Label Length
Minimum Code Position	Value must be ≤ Maximum Code Position
Maximum Code Position	Value must be ≥ Minimum Code Position
OPERATING MODES	
Quality Counters	Not available if Operating Mode Selection ≠ *On Line and* ≠ *Automatic*.
VERIFIER	
Code Verifier	Not available if Code Combination ≠ *Single Label*. Not available if Operating Mode Selection ≠ *On Line* and ≠ *Automatic and* ≠ *Continuous*.
STATISTICS	
Enable	Not available if Operating Mode Selection ≠ *On Line*.

ERROR CODES TABLE

This paragraph provides a list of the most important error codes.

CODE	INTERPRETATION
COMMAND PARSING	
-3	Parameter does not exist.
-4	Invalid range.
-8	Wrong syntax error.
-9	Wrong shortcut error.
-12	Path not found.
-13	Unknown command.
-14	Too many parameters in the programming string.
-15	No command is present in the programming string.
-16	Wrong number of parameters in the programming string.
-17	Unexpected error.
-19	One or more parameters are not applicable.
PARAMETERS PROGRAMMING	
3	The current Path is not valid.
7	The current Path is a Folder
8	Parameter Type is not correct.
9	Parameter Value is not correct.
12	One or more Control Rules are not satisfied.
13	Access denied.

ASCII TABLE

CHARACTER TO HEX CONVERSION TABLE					
CHAR	**HEX**	**CHAR**	**HEX**	**CHAR**	**HEX**
NUL	**00**	*	**2A**	U	**55**
SOH	**01**	+	**2B**	V	**56**
STX	**02**	,	**2C**	W	**57**
ETX	**03**	-	**2D**	X	**58**
EOT	**04**	.	**2E**	Y	**59**
ENQ	**05**	/	**2F**	Z	**5A**
ACK	**06**	0	**30**	[	**5B**
BEL	**07**	1	**31**	\	**5C**
BS	**08**	2	**32**	]	**5D**
HT	**09**	3	**33**	^	**5E**
LF	**0A**	4	**34**	_	**5F**
VT	**0B**	5	**35**	`	**60**
FF	**0C**	6	**36**	a	**61**
CR	**0D**	7	**37**	b	**62**
SO	**0E**	8	**38**	c	**63**
SI	**0F**	9	**39**	d	**64**
DLE	**10**	:	**3A**	e	**65**
DC1	**11**	;	**3B**	f	**66**
DC2	**12**	<	**3C**	g	**67**
DC3	**13**	=	**3D**	h	**68**
DC4	**14**	>	**3E**	i	**69**
NAK	**15**	?	**3F**	j	**6A**
SYN	**16**	@	**40**	k	**6B**
ETB	**17**	A	**41**	l	**6C**
CAN	**18**	B	**42**	m	**6D**
EM	**19**	C	**43**	n	**6E**
SUB	**1A**	D	**44**	o	**6F**
ESC	**1B**	E	**45**	p	**70**
FS	**1C**	F	**46**	q	**71**
GS	**1D**	G	**47**	r	**72**
RS	**1E**	H	**48**	s	**73**
US	**1F**	I	**49**	t	**74**
SPACE	**20**	J	**4A**	u	**75**
!	**21**	K	**4B**	v	**76**
"	**22**	L	**4C**	w	**77**
#	**23**	M	**4D**	x	**78**
$	**24**	N	**4E**	y	**79**
%	**25**	O	**4F**	z	**7A**
&	**26**	P	**50**	{	**7B**
'	**27**	Q	**51**	|	**7C**
(	**28**	R	**52**	}	**7D**
)	**29**	S	**53**	~	**7E**
		T	**54**	DEL	**7F**



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