6K-8KA Family

HOST MODE PROGRAMMING

DATALOGIC

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CONTENTS

1 HOST MODE PROGRAMMING

An alternative method of programming the 6000 family and the 8KA family laser scanners is by sending programming strings.

These strings must be transmitted from the Host system to the device either on the auxiliary RS232 serial interface or on the main RS232/RS485 serial interface, more, if available, on the Ethernet System Socket. This is called Host Control Mode.

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

Warning: Genius™ must not be connected to the reader through the selected interface before entering in Host Control Mode.

Serial Interfaces

The programming commands and strings must be sent to the reader at the programmed baud rate of the selected interface (e.g. if the baud rate of the Auxiliary interface is programmed at 9600 bps the command must be sent at 9600 bps).

The selected communication channel must be programmed as follows:

- Data Bits: 8 Bits
- Parity: None
- Stop Bits: 1

Once the programming session has started on one of the interfaces, the other is disabled until programming is over.

Ethernet System Socket (Server only)

The programming commands and strings must be sent only to the dedicated System socket of the reader.

- Ethernet System Socket Port Number: 51235 (default value).

NOTE

This manual refers to software release 6.51.00 or later.

2 PROGRAMMING COMMANDS

2.1 CONNECTION TO DEVICE

DESCRIPTION	HOST COMMAND	REPLY MESSAGE
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 device is in **CONNECTED** state. Normal data flow is inhibited until it comes back to the **IDLE** state.		
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.		
Enter Programming Mode	**<ESC> c M <B0$_H$> ADDR**	**<ESC> c <CR><LF>**
ADDR is a character indicating address of the device in a LONWORKS Master/Slave **ADDR = <30$_H$> + <Device Address>** where: • **Device Address = 0**: Standalone device or Master LONWORKS device • **Device Address = 1 to 31**: Slave LONWORKS device This means: • **ADDR = <30$_H$>**: Standalone device or Master LONWORKS device • **ADDR = <30$_H$> to <4F$_H$>**: Slave LONWORKS device 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
Exit Programming Mode	**<ESC> d M <$B0_H$> ADDR**	**<ESC> d <CR><LF>**
Where **ADDR** is the address of the device in a LONWORKS Master/Slave layout. This message must always be transmitted to exit from programming mode.		
Exit Terminal Mode	**<ESC> I A <space>**	**<ESC> K <CR><LF>**
This message must always be transmitted to exit from terminal mode		
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 so that the device is automatically disconnected from the Host and its **IDLE** state is reached again.
Once connected, 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 the occasions listed below:

1. **Inactivity Timeout Expiration**
   After the 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 3.4).
   Self-Disconnection message is sent to notify that cases.

3. **General Error Condition**
   After the connection to the device, unexpected errors are notified by means of 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 message. If not sent, after a timeout (about 300 ms as default) device goes back to the **IDLE** state.		

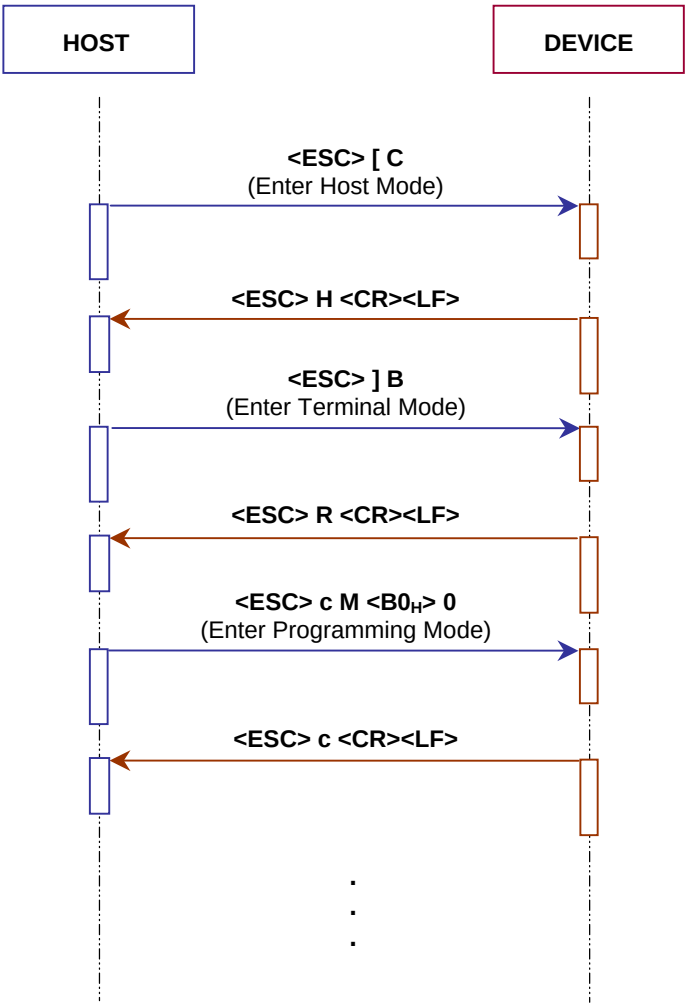

Figure 1 - Connection to standalone device

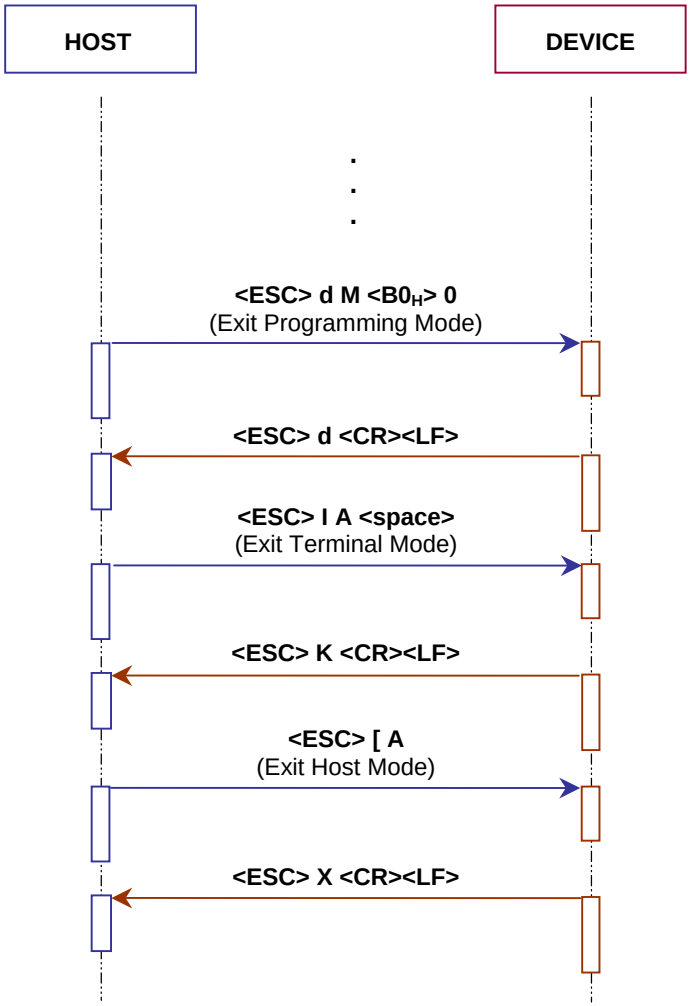

Figure 2 - Disconnection from standalone device

3 PROGRAMMING STRINGS

3.1 DEFINITIONS

Common definitions for each parameter are:

Path

The complete parameter path must have the following format:

/Folder1[#**Depth1**]/**Folder2**[#**Depth2**]/ … **/FolderN**[#**DepthN**]/**Param**[#**DepthM**]

Where:

- **FolderX**: Folder Name
- [**#DepthX**]: Folder or Parameter Depth (not necessary if equal to 1)
- **Param**: Parameter Name

Shortcut (SHC)

The short description replacing the complete parameter path (that allows to implement shorter programming string) must have the following format:

Shortcut [#**Depth**]

Where:

- **Shortcut**: Short Parameter Description
- [**#Depth**]: Folder or 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
Path: /Codes/Code#3/Type
Shortcut: 2#3

Allows selecting the code symbology requested for Code slot 3.

Type (Parameter Type)

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).

Path: /Operating/ONLTimeOut
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 (i.e. 0 = first entry of the list, 1 = second entry of the list).

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

Path: /Operating/Selection
Shortcut: 31
Type: 1
Label: Operating Mode Selection

Item List 0 = On Line
1 = Automatic
3 = Test
4 = Continuous
5 = PackTrack
Default: 0 (Entry 0 → On Line)

String (Type = 2)

Length

Minimum and maximum number of characters allowed for this parameter.

Example: *Device Name* parameter (SYSTEM INFORMATION folder).

Path: /SystemInfo/UserInfo/Name
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)

NOTE

If a character of the parameter value is equal to:
<DLE> (10_H), <ESC> ($1B_H$), <CR> ($0D_H$) or <LF> ($0A_H$),
the character <DLE> (10_H) followed by the complemented one:
<DLE> (EF_H), <~ESC> ($E4_H$), <~CR> ($F2_H$) or <~LF> ($F5_H$)
must be transmitted

Example: <ESC> ($1B_H$) → <DLE><~ESC> (10_H $E4_H$)

Length
List of the allowed values of the parameter

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

Path: /Comms/OutForm/Standard/Header
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.

Example: *Max Angle* parameter (OSCILLATING MIRROR folder).

Path: Reading/Oscillating/ContMaxAngle
Shortcut: 257
Type: 4
Label: Max Angle
Range: -2.5 to 37.5
Default: 37.5

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

3.2 HOW TO SEND SINGLE PARAMETER TO THE READER

NOTE

To guarantee the complete compatibility with future software releases, It strongly suggests to use the shortcuts programming strings.

Using Complete Parameter Path

The 6000 Family and the 8KA Family '**Set Parameter**' programming string must have the following format:

SP<space>**PATH**:**VALUE**<CR><LF>

Where:

- **SP**: 'Set Parameter' command
- **PATH**: Complete Parameter Path
- **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)

The complete Error Codes table is provided in the paragraph 5.2.

Using Short Parameter Description (Shortcut)

The 6000 Family and the 8KA Family '**Set Shortcut**' programming string (based on the short parameter description) must have the following format:

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

Where:

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

The complete Error Codes table is provided in the paragraph 5.2.

3.3 HOW TO GET SINGLE PARAMETER FROM THE READER

NOTE

To guarantee the complete compatibility with future software releases, It strongly suggests to use the shortcuts programming strings.

Using Complete Parameter Path

The 6000 Family and the 8KA Family '**Get Parameter**' programming string must have the following format:

GP<space>**PATH**<CR><LF>

Where:

- **GP**: 'Get Parameter' command.
- **PATH**: Complete Parameter Path.

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)

The complete Error Codes table is provided in the paragraph 5.2.

Using Short Parameter Description (Shortcut)

The 6000 Family and the 8KA Family '**Get Shortcut**' programming string (based on the short parameter description) must have the following format:

GS<space>**SHORTCUT**<CR><LF>

Where:

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

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)

The complete Error Codes table is provided in the paragraph 5.2.

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**<space> **PASSWORD** <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)

The complete Error Codes table is provided in the paragraph 5.2.

NOTE

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

SR<space>L<space>STHD<CR><LF>

3.5 SAVE AND RESTORE COMMANDS

The 6000 Family and the 8KA Family '**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.

WARNING

Restart of the device is now forced. If no disconnection commands are sent within a minimum timeout of 300 ms, 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).

The complete Error Codes table is provided in the paragraph 5.2.

The 6000 Family and the 8KA Family '**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)

The complete Error Codes table is provided in the paragraph 5.2.

WARNING

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

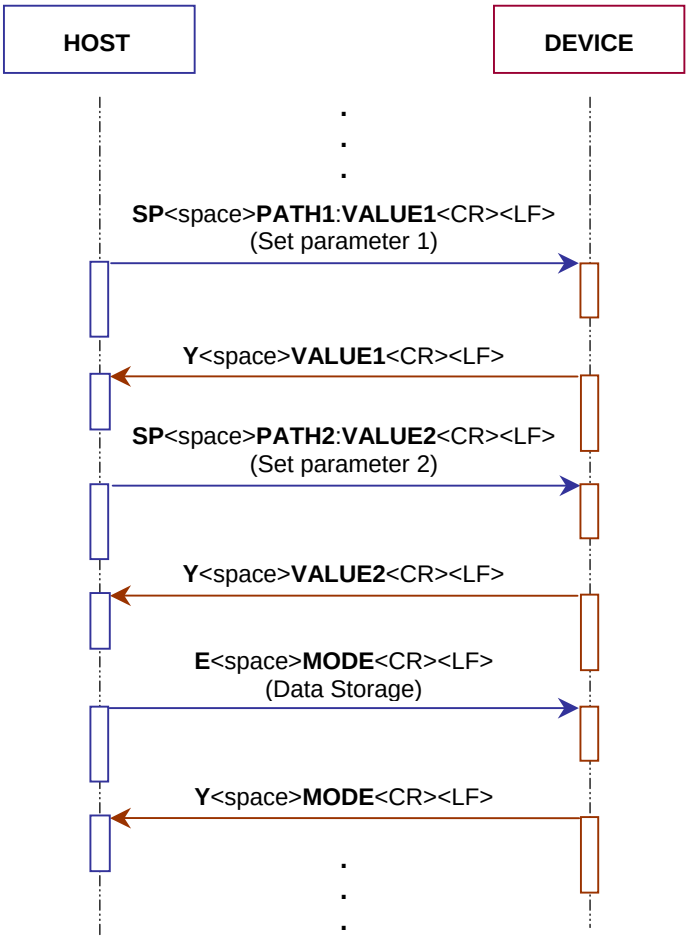

Figure 3 - Two parameters programming session with data storage

3.6 EXAMPLES

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

Path: /Codes/Code#2/MinLength
Shortcut: 3
Type: 0 (Integer)
Range: 0 to 48
Value: 4

The 'Set Parameter' programming string is:

SP<space>/Codes/Code#2/MinLength:4<CR><LF>

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:

Path: /Operating/Selection
Shortcut: 31
Type: 1 (Enumeration)
Item List: 0 = On Line
1 = Automatic
3 = Test
4 = Continuous
5 = Packtrack
Value: 1 (Entry 1 → Automatic)

The 'Set Parameter' programming string is:

SP<space>/Operating/Selection:1<CR><LF>

The 'Set Shortcut' programming string is:

SS<space>31:1<CR><LF>

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

Y<space>1<CR><LF>

- 3 -
Set *Device Name* parameter in SYSTEM INFORMATION folder:

Path: /UserInfo/Name
Shortcut: 522
Type: 2 (String)
Length: 0 to 128
Value: 6K_FAMILY

The 'Set Parameter' programming string is:

SP<space>/SystemInfo/UserInfo/Name:6K_FAMILY<CR><LF>

The 'Set Shortcut' programming string is:

SS<space>522:6K_FAMILY<CR><LF>

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

Y<space>6K_FAMILY<CR><LF>

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

Path: /Comms/OutForm/Standard/Header
Shortcut: 6
Type: 3 (Binary String)
Length 0 to 128
Default: HEADER (HEX value: 48H 45H 41H 44H 45H 52H)

The 'Set Parameter' programming string is:

SP<space>/Comms/OutForm/Standard/Header:6<space>484541444552<CR><LF>

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 -
Set *Min Angle* parameter in OSCILLATING MIRROR folder:

Path: Reading/Oscillating/ContMinAngle
Shortcut: 256
Type: 4 (Floating Point)
Range: -2.5 to 37.5
Value: -1.5

The 'Set Parameter' programming string is:

SP<space>Reading/Oscillating/ContMinAngle:-1.5<CR><LF>

The 'Set Shortcut' programming string is:

SS<space>256:-1.5<CR><LF>

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

Y<space>-1.5<CR><LF>

- 6 -
Get value of Digital Output 2 *Activation Event* parameter in DIGITAL OUTPUT LINES SETTING folder:

Path: /IO/Out/Out2/Active
Shortcut: 28
Type: 1 (Enumeration)
Current value: 2 (Entry 2 → Partial Read)

The 'Get Parameter' programming string is:

GP<space>/IO/Out/Out2/Active<CR><LF>

The 'Get Shortcut' programming string is:

GS<space>28<CR><LF>

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

Y<space>2<CR><LF>

- 7 -
Get value of *No Read String* parameter in CODE DEFINITION folder:

Path: /Codes/NoReadStr
Shortcut: 9
Type: 3 (Binary String)
Current value: Empty string

The 'Get Parameter' programming string is:

GP<space>/Codes/NoReadStr<CR><LF>

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 6K / 8KA FAMILY PARAMETERS LIST

4.1 CODE DEFINITION

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
CODE DEFINITION				
Code Combination	/Codes /MultiLabel	72	1	0 = Single Label 1 = Standard Multi Label 2 = Logical Combination 3 = Code Collection
Logical Combination Rule	/Codes /LogicalComb	191	2	Length: 0 to 64
No Read Message	/Codes /NoRead	14	1	0 = Disable No Read Message 1 = Global No Read Message 2 = Local No Read(s) Message
No Read String	/Codes /NoReadStr	9	3	Length: 0 to 128
Multiple Read Message	/Codes /Mulread	15	1	0 = Disable 1 = Enable
Multiple Read String	/Codes /MulReadMsg	16	3	Length: 1 to 128
Partial Read is treated as	/Codes /PartialReadAs	-	1	0 = No Read 1 = Good Read
Multifilter	/Codes /Multifilter	-	1	0 = Disable 1 = Enable
Codes Different When Scan Gap Is Greater Than	/Codes /ScanDistCheck	-	0	Range: 0 to 32765
Codes Different When Code Position Gap Is Greater Than	/Codes /PositionDistCheck	-	0	Range: 0 to 32765
Associate Same Codes When Coming From Different Slave Scanners	/Codes /NetCodeAssociate	15	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
MULTIPLE READ FILTER SETTINGS				
Strip All Non Printable Chars	/Codes/Filters /FirstLevelFilter Contained	-	1	0 = Disable 1 = Enable
Max Number of Different Characters	/Codes/Filters /ContainedFilter NumberOfChar	-	0	Range: 0 to 5
Voting Filter	/Codes/Filters /SecondLevelFilter Voting	-	1	0 = Disable 1 = Enable
Max Number of Different Characters	/Codes/Filters /VotingFilterNumber OfChar	-		Range: 1 to 5
Strip Filter	/Codes/Filters /SecondLevelFilter Strip	-	1	0 = Disable 1 = Enable
STRIP FILTER PARAMETERS				
Strip All Non Printable Chars	/Codes/Filters /StrepFilterPar /StripFilterAllNoStp Chars	-	1	0 = Disable 1 = Enable
Char(s) to be Striped	/Codes/Filters /StrepFilterPar /StripFilterString	-	3	Length: 0 to 128
StripFIlterCollaps	/Codes/Filters /StrepFilterPar /StripFIlterCollaps	-	1	0 = Disable 1 = Enable
Replacing Char	/Codes/Filters /StrepFilterPar StripFilterRepChar	-		Length: 1
LOCAL NO READ STRINGS #N (DEPTH: N = 1 to 15)				
Group Label Local No Read String	/Codes /LocNoReadComb /LocalNoRead#N	17	3	Length: 0 to 48
LOCAL MULTIPLE READ STRINGS #N (DEPTH: N = 1 to 15)				
Group Label Local Multiple Read String	/Codes /LocMultReadComb /LocalMulRead#N	327	3	Length: 0 to 48

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
CODE LABEL SETTINGS #N (DEPTH: N = 1 to 10)				
Enable	/Codes /Code#N/Enable	1	1	0 = Disable 1 = Enable
Code Symbology	/Codes /Code#N/Type	2	1	0 = Code 128 1 = Interleaved 2 of 5 2 = Code 39 3 = Code EAN 128 4 = EAN-13 5 = EAN-8 6 = UPC-A 7 = UPC-E 8 = All EAN-UPC 9 = Codabar 10 = Code 93
EAN Add On	/Codes /Code#N/AddOn	32	1	0 = No Add On 1 = 2 digits Add On 2 = 5 digits Add On
Label Length	/Codes /Code#N/Length	70	1	0 = Variable 1 = 1 2 = 2 3 = 3 … 59 = 59 60 = 60
Minimum Label Length	/Codes /Code#N/MinLength	3	0	Range: 1 to 60
Maximum Label Length	/Codes /Code#N/MaxLength	4	0	Range: 1 to 60
BarCount (Only for Code 128, EAN 128)	/Codes/Code#N /6ElBarCount	71	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

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
				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

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
				57 = 361 58 = 367 59 = 373 60 = 379
BarCount (Only for Code 93)	/Codes/Code#N /6ElBarCount1	81	1	0 = Variable 1 = 31 2 = 37 3 = 43 4 = 49 5 = 55 6 = 61 7 = 67 8 = 73 9 = 79 10 = 85 11 = 91 12 = 97 13 = 103 14 = 109 15 = 115 16 = 121 17 = 127 18 = 133 19 = 139 20 = 145 21 = 151 22 = 157 23 = 163 24 = 169 25 = 175 26 = 181 27 = 187 28 = 193 29 = 199 30 = 205 31 = 211 32 = 217 33 = 223 34 = 229 35 = 235 36 = 241 37 = 247 38 = 253

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
				39 = 259 40 = 265 41 = 271 42 = 277 43 = 283 44 = 289 45 = 295 46 = 301 47 = 307 48 = 313 49 = 319 50 = 325 51 = 331 52 = 337 53 = 343 54 = 349 55 = 355 56 = 361 57 = 367 58 = 373 59 = 379 60 = 385
Min Code Position	/Codes /Code#N/MinCodePos	262	0	Range: 0 to 255
Max Code Position	/Codes /Code#N /MaxCodePos	263	0	Range: 0 to 255
Check Digit (only for IL 2/5, Code 39 and Codabar)	/Codes /Code#N/CheckDigit	5	1	0 = Disable 1 = Enable
Check Digit Type (only for IL 2/5)	/Codes /Code#N /CheckDigit25IL	526	1	0 = Standard 1 = German 2 = DHL 3 = Daimler-Chrysler 4 = Bosch
Check Digit Type (only for Code 39)	/Codes /Code#N/ /CheckDigit39	527	1	0 = Standard 1 = Mod 7
Check Digit TX	/Codes /Code#N /CheckDigitTx	524	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Ink Spread Equalization	/Codes /Code#N/InkSpread	-	1	0 = Disable 1 = Enable
Decoding Safety	/Codes /Code#N/DecSaf	261	0	Range: 1 to 100
Decoding Severity	/Codes /Code#N/Severity	525	0	Range: 1 to 5
Match String Rule	/Codes /Code#N /MatchStrRule	-	1	0 = Match 1 = Do Not Match
Pattern Match String	/Codes /Code#N/PatMatch	-	3	Length: 0 to 200
Match Direction Rule	/Codes/Code#N /MatchDirectionRule	-	1	0 = Disable 1 = Forward 2 = Reverse
Code Label Local No Read String	/Codes /Code#N /LocNoRead	18	3	Length: 0 to 48
Code Label Local Multiple Read String	/Codes /Code#N /LocMulRead	328	3	Length: 0 to 48
Start Character TX (only for Codabar)	/Codes /Code#N/StartChTx	382	1	0 = Disabled 2 = Lower Case 3 = Upper Case
Stop Character TX (only for Codabar)	/Codes /Code#N/StopChTx	383	1	0 = Disabled 2 = Lower Case 3 = Upper Case

4.2 OPERATING MODES

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
OPERATING MODES				
Operating Mode Selection	/Operating /Selection	31	1	0 = On Line 1 = Automatic 3 = Test 4 = Continuous 5 = Packtrack
On Line Options	/Operating /OnLOpt	73	1	0 = On Line 1 input 1 = On Line 2 input 2 = Serial On Line
Extended Phase	/Operating /ExtendedPhase	-	1	0 = Disable 1 = Enable
Test Mode Send Data	/Operating /TestSend	500	1	0 = Send Data To All Selected Channels 1 = Send Data To Aux Serial Only 2 = Do Not Send Data
Serial Start String	/Operating /SerialStart	86	3	Length: 1 to 32
Start Input Number	/Operating /ONLStartIn	74	0	Range: 1 to 4
Start Input Active Level	/Operating /ONLStartInLev	75	1	0 = Active Closed 1 = Active Open
Stop Start String	/Operating /SerialStop	87	3	Length: 1 to 32
Stop Input Number	/Operating /ONLStopIn	76	0	Range: 1 to 4
Stop Input Active Level	/Operating /ONLStopInLev	77	1	0 = Active Closed 1 = Active Open
Stop Phase Edge	/Operating /PhaseOffLeadEdge	-	1	0 = Trailing 1 = Leading
Reading Phase Timeout	/Operating /OnLTimOutEn	78	1	0 = Disable 1 = Enable
Timeout (ms)	/Operating /ONLTimeOut	79	0	Range: 40 to 15.000
Timeout Counting From	/Operating /ONLToutStart	-	1	0 = Start 1 = Stop
Stop Priority	/Operating /ONLStopPrio	80	1	0 = Input/SerialStop 1 = Always Timeout
Automatic Threshold (number of scans)	/Operating /AutomaticThreshold	501	0	Range: 10 to 32.765

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Continuous Threshold (number of scans)	/Operating /ContThreshold	-	0	Range: 10 to 32.765
Physical Encoder	/Operating /PhyEnc	200	1	0 = Disable 1 = Enable
Encoder Step (hundredths of millimeter)	/Operating /EncStep	201	0	Range: 1 to 10000
Conveyor Speed (mm/sec)	/Operating /PktrSpeed	216	0	Range: 50 to 10000
Ps Line (mm)	/Operating /PktrPsLine	202	0	Range: -32767 to 32767y
Presence Sensor Input	/Operating /PktrPsIn	203	0	Range: 1 to 4
Presence Sensor Input Level	/Operating /PktrPsLev	204	1	0 = Active Closed 1 = Active Open
Distance from PS Line to TX Line (mm)	/Operating /PktrTxLineDist	205	0	Range: 100 to 20000
Transmission Edge	/Operating /PktrTxLineEdge	206	1	0 = Leading 1 = Trailing
Max Number of Packs	/Operating /PktrMaxPacks	207	0	Range: 2 to 40
Minimum Distance Error Behaviour	/Operating /PktrMinDistEn	211	1	0 = Ignore Error 1 = Compose 2 = Discard Last
Minimum Distance Between Packs (mm)	/Operating /PktrMinDist	208	0	Range: 10 to 10000
Minimum Pack Length Error Behaviour	/Operating /PktrMinLenEn	212	1	0 = Ignore Error 1 = Discard Item
Minimum Pack Length (mm)	/Operating /PktrMinLen	209	0	Range: 50 to 1000
Window Dimension (mm)	/Operating /PktrWinDim	210	0	Range: 0 to 1000
Encoder Delay Error Behaviour	/Operating /PktrEncErr	214	1	0 = Ignore Error 1 = Fast Resync 2 = Safe Resync"
Max. Encoder Delay For Code	/Operating /PktrEncMaxDelay	213	0	Range: 50 to 100000

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Max. Consecutive Delayed Codes For Node	/Operating /PktrMaxDelayOfCode	-	0	Range: 0 to 255
Max. Safe Resync For Node	/Operating /PktrMaxNodeResync	-	0	Range: 0 to 255
Bidirectional	/Operating /Bidirectional	-	1	0 = Disable 1 = Enable
Direction Input	/Operating /PktrInDir	-	0	Range: 1 to 4
Reverse Direction Level	/Operating /PktrInDirLev	-	1	0 = Closed 1 = Open
Reverse Presence Sensor Input	/Operating /PktrPsRev	-	0	Range: 1 to 4
Reverse Presence Sensor Input Level	/Operating /PktrPsRevLev	-	1	0 = Active Closed 1 = Active Open
Distance from PS to Reverse PS (mm)	/Operating /PktrRevOffsY	-	0	Range: 100 to 20000
Start Input from Bus (Profibus Models Only)	/Operating /PbusOnl	-	1	0 = Disable 1 = Enable
Start Input from Bus (Ethernet Models Only)	/Operating /EthOnl	-	1	0 = Disable 1 = Enable
Use Encoder	/Operating /ContOpt	-	1	0 = Disable 1 = Physical Encoder 2 = Auto Encoder
Encoder Step (hundredths of millimeter)	/Operating /ContEncEncStep	-	0	Range: 1 to 10000
Conveyor Speed (mm/sec)	/Operating /ContEncSpeed	-	0	Range: 50 to 10000
Encoder Delay Error Behaviour	/Operating /ContEncErr	-	1	0 = Ignore Error 1 = Fast Resync 2 = Safe Resync"
Max. Encoder Delay For Code	/Operating /ContEncMaxDelay	-	0	Range: 50 to 10000
Max. Consecutive Delayed Codes For Node	/Operating /ContEncMaxDelayOf Code	-	0	Range: 0 to 255
Max. Safe Resync For Node	/Operating /ContEncMaxNode Resync	-	0	Range: 0 to 255

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Replicate same code when simbology don't match	/Operating /CodTypeFiltEn	-	1	0 = Disable 1 = Enable
Code Filter Depth	/Operating /CodeFilterDepth	502	0	Range: 0 to 127
Code Filter	/Operating /CodFiltToutEncEn	-	1	0 = Disable 1 = Timeout 2 = Encoder Steps 3 = Tx Line
Filter Timeout Value (ms)	/Operating /FilterTimeout	-	0	Range:40 to 15000
Filter Number of Encoder Steps	/Operating /FilterNumEncStep	-	0	Range:1 to 15000
Distance from (x,y,z) origin to Tx Line (mm)	/Operating /ContTxLineDist	-	0	Range:100 to 20000
Replicate same code when X positions don't match	/Operating /CodUseCoordinateX	-	1	0 = Disable 1 = Enable
Replicate same code when Y positions don't match	/Operating /CodUseCoordinateY	-	1	0 = Disable 1 = Enable
Replicate same code when Z positions don't match	/Operating /CodUseCoordinateZ	-	1	0 = Disable 1 = Enable
Protocol Index	/Operating /ProtocolIndex	-	1	0 = Disable 1 = Enable
VERIFIER				
Verifier	/Operating /Verifier/EnVerifier	5121	1	0 = Disable 1 = Enable
Verifier Code	/Operating /Verifier/VerifierCode	5126	3	Length: 1 to 128
Store Input	/Operating /Verifier/Input	5124	1	1 = 1 2 = 2 3 = 3 4 = 4

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Active Level	/Operating /Verifier/VerifInLen	5125	1	0 = Active Closed 1 = Active Open
Wrong Code Tx	/Operating/Verifier /EnWrongCode	5127	1	0 = Disable 1 = Enable
Wrong String Tx	/Operating /Verifier/EnWrong	5123	1	0 = Disable 1 = Enable
Wrong String	/Operating /Verifier/WrongString	5122	3	Length: 1 to 128
PROTOCOL INDEX PARAMETERS / AUX				
Use Aux Serial Port	/Operating /ProtocolIndex Parameters/AuxPar /AuxEn	-	1	0 = Disable 1 = Enable Without Request Message 2 = Enable With Request Message
Header	/Operating /ProtocolIndex Parameters/AuxPar /StrAux	-	3	Length: 0 to 1
Terminator	/Operating /ProtocolIndex Parameters/AuxPar /StpAux	-	3	Length: 0 to 1
Protocol Index Length	/Operating /ProtocolIndex Parameters/AuxPar /PILengthAux	-	1	0 = Length In Message 1 = Variable length 3 = 3 4 = 4 5 = 5 … 12 = 12
No Index Char	/Operating /ProtocolIndex Parameters/AuxPar /NOIndexCharAux	-	3	Length: 0 to 32
Protocol Index Request Message	/Operating /ProtocolIndex Parameters/AuxPar /PIReqMsgAux	-	3	Length: 0 to 32

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Distance from Ext Tx Point to System Reference Point	/Operating /ProtocolIndex Parameters/AuxPar /TxPtFromRef_aux	-	0	Range:0 to 65532
PROTOCOL INDEX PARAMETERS / MAIN				
Use Main Serial Port	/Operating /ProtocolIndex Parameters/MainPar /MainEn	-	1	0 = Disable 1 = Enable Without Request Message 2 = Enable With Request Message
Header	/Operating /ProtocolIndex Parameters/MainPar /StrMain	-	3	Length: 0 to 1
Terminator	/Operating /ProtocolIndex Parameters/MainPar /StpMain	-	3	Length: 0 to 1
Protocol Index Length	/Operating /ProtocolIndex Parameters/MainPar /PILengthMain	-	1	0 = Length In Message 1 = Variable length 3 = 3 4 = 4 5 = 5 … 12 = 12
No Index Char	/Operating /ProtocolIndex Parameters/MainPar /NOIndexCharMain	-	3	Length: 0 to 32
Protocol Index Request Message	/Operating /ProtocolIndex Parameters/MainPar /PIReqMsgMain	-	3	Length: 0 to 32
Distance from Ext Tx Point to System Reference Point	/Operating /ProtocolIndex Parameters/MainPar /TxPtFromRef_main	-	0	Range:0 to 65532

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
PROTOCOL INDEX PARAM. / ETH1 / PIUSERSOCKET #N (DEPTH: N = 1 to 3)				
Use Socket	/Operating /ProtocolIndex Parameters/Eth1 /PIUserSocket#N /SockEn	-	1	0 = Disable 1 = Enable Without Request Message 2 = Enable With Request Message
Header	/Operating /ProtocolIndex Parameters/Eth1 /PIUserSocket#N /StrSock	-	3	Length: 0 to 1
Terminator	/Operating /ProtocolIndex Parameters/Eth1 /PIUserSocket#N /StpSock	-	3	Length: 0 to 1
Protocol Index Length	/Operating /ProtocolIndex Parameters/Eth1 /PIUserSocket#N /PILengthSock	-	1	0 = Length In Message 1 = Variable length 3 = 3 4 = 4 5 = 5 … 12 = 12
No Index Char	/Operating /ProtocolIndex Parameters/Eth1 /PIUserSocket#N /NOIndexCharSock	-	3	Length: 0 to 32
Protocol Index Request Message	/Operating /ProtocolIndex Parameters/Eth1 /PIUserSocket#N /PIReqMsgSock	-	3	Length: 0 to 32
Distance from Ext Tx Point to System Reference Point	/Operating /ProtocolIndex Parameters/Eth1 /PIUserSocket#N /TxPtFromRef_Sock	-	0	Range:0 to 65532

4.3 READING SYSTEM LAYOUT

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
READING SYSTEM LAYOUT				
Device Assignment	/Layout /DevAssO	196	1	0 = Alone 1 = Master RS232 (Type A) 2 = Master Lonworks and RS232 (Type A) 3 = Slave RS232 (Type A)
Number of Slaves (Type A)	/Layout /NumSlSer	34	0	Range: 1 to 9
Number of LonWorks Slaves	/Layout /NumSlOld8k	-	0	Range: 1 to 14
Number of LonWorks Slaves	/Layout /NumSlNet	36	0	Range: 1 to 31
Display Installer Info	/Layout /ShowDbg	38	1	0 = Disable 1 = Enable
Modify&Backup Lon Slave Configuration	/Layout /Update	64	1	0 = Disable 1 = Enable
Enable A.S.R.	/Layout /EnableASR	706	1	0 = Disable 1 = Enable
Motor Delay (ms)	/Layout /EnableASR	-	0	Range: 500 to 5000
LONWORKS SLAVES COMMON PARAMETERS				
CODE PARAMETERS				
Code 3 of 9	/Layout /SlvPar/CodPar /Cod39	140	1	0 = Disable 1 = Enable
Code 2 of 5 Interleaved	/Layout /SlvPar/CodPar /Cod25	141	1	0 = Disable 1 = Enable
Code 2 of 5 Compressed	/Layout /SlvPar/CodPar /Cod25Cmp	150	1	0 = Disable 1 = Enable
Code Codabar	/Layout /SlvPar/CodPar /CodBar	152	1	0 = Disable 1 = Enable
Code 93	/Layout /SlvPar/CodPar /Cod93	151	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Code 128	/Layout /SlvPar/CodPar /Cod128	142	1	0 = Disable 1 = Enable
Code EAN 128	/Layout /SlvPar/CodPar /CodEAN128	143	1	0 = Disable 1 = Enable
Code EAN 13	/Layout /SlvPar/CodPar /EAN13	144	1	0 = Disable 1 = Enable
Code EAN 8	/Layout /SlvPar/CodPar /EAN8	145	1	0 = Disable 1 = Enable
Code UPC A	/Layout /SlvPar/CodPar /UPCA	146	1	0 = Disable 1 = Enable
Code UPC E	/Layout /SlvPar/CodPar /UPCE	147	1	0 = Disable 1 = Enable
EAN/UPC ADD ON 2	/Layout /SlvPar/CodPar /AddOn2	148	1	0 = Disable 1 = Enable
EAN/UPC ADD ON 5	/Layout /SlvPar/CodPar /AddOn5	149	1	0 = Disable 1 = Enable
CODE 3 OF 9 PARAMETERS				
Decoding Severity	/Layout /SlvPar/CodPar /Code39Par /DecSev	161	0	Range: 0 to 4
Check Digit	/Layout /SlvPar/CodPar /Code39Par /ChkDgt	162	1	0 = Disable 1 = Enable
Length Type	/Layout /SlvPar/CodPar /Code39Par /Lentyp	180	1	0 = Variable 1 = Fixed

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
CODE 3 OF 9 FIXED LENGTH #N (DEPTH: N = 1 to 12)				
Fixed Length	/Layout /SlvPar/CodPar /Code39Par /Digit#N	163	0	Range: 0 to 50
CODE 2 OF 5 INTERLEAVED PARAMETERS				
Decoding Severity	/Layout /SlvPar/CodPar /Code25Par /DecSev	164	0	Range: 0 to 4
Check Digit	/Layout /SlvPar/CodPar /Code25Par /ChkDgt	165	1	0 = Disable 1 = Enable
Length Type	/Layout /SlvPar/CodPar /Code25Par /Lentyp	181	1	0 = Variable 1 = Fixed
CODE2 OF 5 INTERLEAVED FIXED LENGTH #N (DEPTH: N = 1 to 12)				
Fixed Length	/Layout /SlvPar/CodPar /Code25Par /Digit#N	166	0	Range: 0 to 50
CODE 2 OF 5 COMPRESSED PARAMETERS				
Decoding Severity	/Layout /SlvPar/CodPar /Code25CmpPar /DecSev	167	0	Range: 0 to 4
Check Digit	/Layout /SlvPar/CodPar /Code25CmpPar /ChkDgt	168	1	0 = Disable 1 = Enable
Length Type	/Layout /SlvPar/CodPar /Code25CmpPar /Lentyp	182	1	0 = Variable 1 = Fixed

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
CODE2 OF 5 COMPRESSED FIXED LENGTH #N (DEPTH: N = 1 to 12)				
Fixed Length	/Layout /SlvPar/CodPar /Code25CmpPar /Digit#N	169	0	Range: 0 to 50
CODABAR PARAMETERS				
Check Digit	/Layout /SlvPar/CodPar /CodBarPar /ChkDgt	170	1	0 = Disable 1 = Enable
Length Type	/Layout /SlvPar/CodPar /CodBarPar /Lentyp	183	1	0 = Variable 1 = Fixed
CODABAR FIIXED LENGTH #N (DEPTH: N = 1 to 12)				
Fixed Length	/Layout /SlvPar/CodPar /CodBarPar /Digit#N	171	0	Range: 1 to 50
CODE 93 PARAMETERS				
Decoding Severity	/Layout /SlvPar/CodPar /Code93Par /DecSev	172	0	Range: 0 to 4
Ink Spread	/Layout /SlvPar/CodPar /Code93Par /InkSp	173	1	0 = Disable 1 = Enable
Length Type	/Layout /SlvPar/CodPar /Code93Par /Lentyp	184	1	0 = Variable 1 = Fixed
CODE 93 FIXED LENGTH #N (DEPTH: N = 1 to 12)				
Fixed Length	/Layout /SlvPar/CodPar /Code93Par /Digit#N	174	0	Range: 0 to 50

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
CODE 128 PARAMETERS				
Decoding Severity	/Layout /SlvPar/CodPar /Code128Par /DecSev	177	0	Range: 0 to 4
Ink Spread	/Layout /SlvPar/CodPar /Code128Par /InkSp	178	1	0 = Disable 1 = Enable
Length Type	/Layout /SlvPar/CodPar /Code128Par /Lentyp	185	1	0 = Variable 1 = Fixed
CODE 128 FIXED LENGTH #N (DEPTH: N = 1 to 12)				
Fixed Length	/Layout /SlvPar/CodPar /Code128Par /Digit#N	179	0	Range: 0 to 50
CODE EAN 128 PARAMETERS				
Length Type	/Layout /SlvPar/CodPar /CodeEAN128Par /Lentyp	186	1	0 = Variable 1 = Fixed
CODE EAN 128 FIXED LENGTH #N (DEPTH: N = 1 to 12)				
Fixed Length	/Layout /SlvPar/CodPar /CodeEAN128Par /Digit#N	187	0	Range: 0 to 50
CODE EAN UPC PARAMETERS				
Decoding Severity	/Layout /SlvPar/CodPar /CodeEANUPCPar /DecSev	175	1	0 = Variable 1 = Fixed
Ink Spread	/Layout /SlvPar/CodPar /CodeEANUPCPar /InkSp	176	0	Range: 0 to 50

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
RECONSTRUCTION PARAMETERS				
Overflow	/Layout /SlvPar/RecPar /Ovrflw	153	0	Range: 2 to 50
Reconstruction Severity	/Layout /SlvPar/RecPar /RecSev	154	0	Range: 1 to 5
Max Stacked Codes	/Layout /SlvPar/RecPar /MaxStCd	155	0	Range: 1 to 3
Out Codes Per Cluster	/Layout /SlvPar/RecPar /OutCdPC	156	0	Range: 1 to 3
Inter Character Gap	/Layout /SlvPar/RecPar /InterChG	157	0	Range: 2 to 8
LONWORKS SINGLE SLAVE PARAMETERS				
SLAVE NUMBER #N (DEPTH: N = 1 to 31)				
Max Scan Gap	/Layout /SngSlv/Slave#N /MaxScG	158	0	Range: 1 to 10000
Direction	/Layout /SngSlv/Slave#N /X_Y_Inversion	-	1	0 = 0 (Forward) 3 = 90 1 = 180 (Reverse) 2 = 270
PS Offset (mm)	/Layout /SngSlv/Slave#N /Y_Adjust	-	0	Range: 0 to 65532
Reading Condition 8K	/Layout /SngSlv/Slave#N /LayoutReading Condition8K	707	1	0 = Standard 1 = Skew 45 2 = Low Contrast 3 = External Mirror 4 = Max Gain Boost"
Reading Condition 6K	/Layout /SngSlv/Slave#N /LayoutReading Condition6K	708	1	0 = Standard 1 = Low Contrast 2 = Toggle Standard/Low Contrast"

4.4 READING PARAMETERS

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
READING PARAMETERS				
Beam Shutter	/Reading /BeamSh	8	1	0 = Disabled 1 = Triggered 2 = Enabled
Trigger Timeout	/Reading /PktrBeamShutterTimeout	-	1	1 = 50 msec 2 = 100 msec 3 = 500 msec 4 = 1 sec 5 = 5 sec 6 = 10 sec 7 = 30 sec 8 = 1 min 9 = 5 min 10 = 10 min 11 = 15 min"
Overflow Ratio	/Reading /Overflow	286	0	Range: 1 to 50
Overflow Stop Ratio	/Reading /StopOverflow	604	0	Range: 1 to 50
Reading Mode	/Reading /Linear	285	1	0 = Reconstruction 1 = Linear
Reading Condition	/Reading /ReadingCondition8K	709	1	0 = Standard 1 = Skew 45 2 = Low Contrast 3 = External Mirror 4 = Max Gain Boost"
Reading Condition	/Reading /ReadingCondition6K	709	1	0 = Standard, 1 = Low Contrast 2 = Toggle Standard/Low Contrast"
RECONSTRUCTION PARAMETERS				
Enabled Stacked Code	/Reading /Reconstruction /SafeStackedCodes	504	1	0 = Disable 1 = Enable
RECONSTRUCTION PARAMETERS / EXTENDED				
MinMatch	/Reading /Reconstruction /Extended/MinMatch	-	0	Range: 0 to 500

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
PositionTolerance	/Reading /Reconstruction /Extended /PositionTolerance		0	Range: 1 to 100
DurationTolerance	/Reading /Reconstruction /Extended /DurationTolerance Perc		0	Range: 1 to 100
MinStartStop Number	/Reading /Reconstruction /Extended /MinStartStopNumber	-	0	Range: 1 to 50
InterCharGap	/Reading /Reconstruction /Extended /InterCharGap	-	0	Range: 2 to 8
Addon Overflow Start Ratio	/Reading /Reconstruction /Extended /AddonOverflow	-	0	Range: 1 to 50
Addon Overflow Stop Ratio	/Reading /Reconstruction /Extended /AddonOverflowStop	-	0	Range: 1 to 50
Max Distance between EAN/UPC and Addon (in modules)	/Reading /Reconstruction /Extended /AddonDistance	-	0	Range: 1 to 256
SCAN LINE AMPLITUDE				
Amplitude Settings Enable	/Reading /ScanAmp/Enable	282	1	0 = Disable 1 = Enable
Laser Turn On Position	/Reading /ScanAmp/OnPos	283	0	Range: 0 to 255
Laser Turn Off Position	/Reading /ScanAmp/OffPos	284	0	Range: 0 to 255
ZeroOff	/Reading /ScanAmp/ZeroOff	-	0	Range: -127 to 127

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
FLASH (DS6400-XXX-XXX models only)				
Flash Mode	/Reading /Flash/Mode	219	1	0 = Off Line 1 = Fixed 2 = Triggered 3 = Continuous 6 = DFlash
Fixed Distance (cm)	/Reading /Flash/FixedDist	220	0	Range: 0 to 255
Min Distance (cm)	/Reading /Flash/ContMin	221	0	Range: 0 to 255
Max Distance (cm)	/Reading /Flash/ContMax	222	0	Range: 0 to 255
Frequency (Hz)	/Reading /Flash/ContFreq	223	1	2 = 0.1 Hz 3 = 0.2 Hz 5 = 0.3 Hz 6 = 0.4 Hz 7 = 0.5 Hz 9 = 0.6 Hz 10 = 0.7 Hz 11 = 0.8 Hz 12 = 0.9 Hz 13 = 1 Hz 20 = 1.5 Hz 27 = 2.0 Hz 33 = 2.5 Hz 40 = 3.0 Hz 67 = 5.0 Hz 134 = 10.0 Hz 201 = 15.0 Hz 255 = 19.0 Hz"
Stand-by Distance (cm)	/Reading /Flash/NoPackDist	224	0	Range: 0 to 255
Input 1 Distance (cm)	/Reading /Flash/In1Dist	225	0	Range: 0 to 255
Input 2 Distance (cm)	/Reading /Flash/In2Dist	226	0	Range: 0 to 255
Input 3 Distance (cm)	/Reading /Flash/In3Dist	227	0	Range: 0 to 255
Input 4 Distance (cm)	/Reading /Flash/In4Dist	228	0	Range: 0 to 255

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Angle 1 (degrees)	/Reading /ADRAngle1	233	0	Range: -2,5 to 37,5
Angle 2 (degrees)	/Reading /ADRAngle2	234	0	Range: -2,5 to 37,5
Angle 3 (degrees)	/Reading /ADRAngle3	235	0	Range: -2,5 to 37,5
Angle 4 (degrees)	/Reading /ADRAngle4	236	0	Range: -2,5 to 37,5
Angle 5 (degrees)	/Reading /ADRAngle5	237	0	Range: -2,5 to 37,5
Angle 6 (degrees)	/Reading /ADRAngle6	238	0	Range: -2,5 to 37,5
Angle 7 (degrees)	/Reading /ADRAngle7	239	0	Range: -2,5 to 37,5
Distance 1 (cm)	/Reading /ADRDist1	241	0	Range: 0 to 255
Distance 2 (cm)	/Reading /ADRDist2	242	0	Range: 0 to 255
Distance 3 (cm)	/Reading /ADRDist3	243	0	Range: 0 to 255
Distance 4 (cm)	/Reading /ADRDist4	244	0	Range: 0 to 255
Distance 5 (cm)	/Reading /ADRDist5	245	0	Range: 0 to 255
Distance 6 (cm)	/Reading /ADRDist6	246	0	Range: 0 to 255
Distance 7 (cm)	/Reading /ADRDist7	247	0	Range: 0 to 255
Distance 8 (cm)	/Reading /ADRDist8	248	0	Range: 0 to 255
DFLASH (DS6400-XXX-XXX models only)				
DFlash Behavior	/Reading /Flash/DFlash /DFlashBeah	300	1	0 = Nearest 1 = Background Suppression
Distance 1 (cm)	/Reading /Flash/DFlash /MinDFlashD1	272	0	Range: 0 to 255
Distance 2 (cm)	/Reading /Flash/DFlash /MinDFlashD2	273	0	Range: 0 to 255

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Distance 3 (cm)	/Reading /Flash/DFlash /MinDFlashD3	274	0	Range: 0 to 255
Distance 4 (cm)	/Reading /Flash/ DFlash /MinDFlashD4	275	0	Range: 0 to 255
Distance 5 (cm)	/Reading /Flash/DFlash /MinDFlashD5	276	0	Range: 0 to 255
Distance 6 (cm)	/Reading /Flash/ DFlash /MinDFlashD6	277	0	Range: 0 to 255
Distance 7 (cm)	/Reading /Flash/DFlash /MinDFlashD7	278	0	Range: 0 to 255
Distance 8 (cm)	/Reading /Flash/DFlash /MinDFlashD8	279	0	Range: 0 to 255
Stand-by Distance	/Reading /Flash/DFlash /MinDFlashStandBy	326	1	0 = Distance 1 1 = Distance 2 2 = Distance 3 3 = Distance 4 4 = Distance 5 5 = Distance 6 6 = Distance 7 7 = Distance 8
Offset Distance	/Reading /Flash/DFlash /Offset	325	0	Range: -255 to +255
Leg 1: Ignore From Start (%)	/Reading /Flash/DFlash /FilterOnStart	307	0	Range: 0 to 100
Leg 1: Ignore From Stop(%)	/Reading /Flash/DFlash /FilterOnStop	308	0	Range: 0 to 100
Leg 2: Ignore From Start (%)	/Reading /Flash/DFlash /FilterOnXStart	468	0	Range: 0 to 100
Leg 2: Ignore From Stop(%)	/Reading /Flash/DFlash /FilterOnXStop	469	0	Range: 0 to 100

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
OSCILLATING MIRROR (DS6X00-105-XXX models only)				
Oscillating Mode	/Reading /Oscillating /Mode	254	1	0 = Off Line 1 = Fixed 2 = Continuous
Angle	/Reading /Oscillating/Fixed Angle	255	4	Range: -2.5 to +37.5
Min Angle	/Reading /Oscillating/ContMin Angle	256	4	Range: -2.5 to +37.5
Max Angle	/Reading /Oscillating/ContMaxAngle	257	4	Range: -2.5 to +37.5
Frequency (Hz)	/Reading /Oscillating/ContFreq	258	4	Range: 0 to 19
Triggered	/Reading /Oscillating/Triggered	-	1	0 = Disable 1 = Enable
Second Zone Trigger	/Reading /Oscillating/TriggerIn	-	1	0 = Phase 1 = Input 1 2 = Input 2 3 = Input 3 4 = Input 4
Second Zone Trigger Level	/Reading /Oscillating/TriggerIn Lev	-	1	0 = Active Closed 1 = Active Open
Second Zone Oscillating Mode	/Reading /Oscillating/Mode1	-	1	0 = Off Line 1 = Fixed 2 = Continuous
Second Zone Angle	/Reading /Oscillating/Fixed Angle1	-	4	Range: -2.5 to +37.5
Second Zone Min Angle	/Reading /Oscillating /ContMinAngle1	-	4	Range: -2.5 to +37.5
Second Zone Max Angle	/Reading /Oscillating /ContMaxAngle1	-	4	Range: -2.5 to +37.5
Second Zone Frequency (Hz)	/Reading /Oscillating/ContFreq1	-	4	Range: 0 to 19

4.5 DATA COMMUNICATION SETTING

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
DATA COMMUNICATION SETTING				
Host Application Protocol Type	/Comms /Application	84	1	0 = Standard 1 = Crisplant 2 = Cargoscan
DATA FORMAT				
Header TX Start	/Comms /OutForm/HeadTx	505	1	0 = With Data 1 = After Reading Phase On
Termination after No Read Message	/Comms /OutForm/TermAfter	506	1	0 = Disable 1 = Enable
Message Tx Selection	/Comms /OutForm/TxTrigSel	507	1	0 = On Decoding 1 = After Reading Phase Off"
Message Tx Selection	/Comms /OutForm/AutoTxTrig	-	1	0 = On Decoding 1 = After Reading Phase Off
Format Type	/Comms /OutForm/FormatType	330	1	0 = Standard 1 = Advanced
Master Max. Tx Delay After Phase Off (ms)	/Comms /OutForm /TX_TimeoutMaster	-	1	50 = 50 60 = 60 70 = 70 80 = 80 90 = 90 100 = 100 110 = 110 12 0= 120 130 = 130 140 = 140 150 = 150 160 = 160 170 = 170 180 = 180 190 = 190 200 = 200 250 = 250 300 = 300 500 = 500

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Stand Alone Max. Tx Delay After Phase Off (ms)	/Comms /OutForm /TX_TimeoutAlone	-	1	0 = Disabled 50 = 50 60 = 60 70 = 70 80 = 80 90 = 90 100 = 100 110 = 110 12 0= 120 130 = 130 140 = 140 150 = 150 160 = 160 170 = 170 180 = 180 190 = 190 200 = 200 250 = 250 300 = 300 500 = 500
Code Identifier	/Comms /OutForm/codeID	399	1	0 = Disabled 1 = Standard AIM ID 2 = Custom
CUSTOM CODE IDENTIFIER STRING				
Code 128 Identifier String	/Comms /OutForm /codIDStr/cod128	400	3	Length: 1 to 32
Code IL 2/5 Identifier String	Comms /OutForm /codIDStr/cod25IL	401	3	Length: 1 to 32
Code 39 Standard Identifier String	Comms /OutForm /codIDStr/cod39	402	3	Length: 1 to 32
Code EAN 128 Identifier String	Comms /OutForm /codIDStr/codEAN128	403	3	Length: 1 to 32
Code EAN 13 Identifier String	Comms /OutForm /codIDStr/codEAN13	404	3	Length: 1 to 32

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Code EAN 8 Identifier String	Comms /OutForm /codIDStr/codEAN8	405	3	Length: 1 to 32
Code UPCA Identifier String	Comms /OutForm /codIDStr/codUPCA	406	3	Length: 1 to 32
Code UPCE Identifier String	Comms /OutForm /codIDStr/codUPCE	407	3	Length: 1 to 32
Code Codabar Identifier String	Comms /OutForm /codIDStr/codBAR	409	3	Length: 1 to 32
Code 93 Identifier String	Comms /OutForm /codIDStr/cod93	410	3	Length: 1 to 32
STANDARD PARAMETERS				
Header String	/Comms /OutForm/Standard /Header	6	3	Length: 0 to 128
Code Position Tx	/Comms /OutForm/Standard /CodePosition	-	1	0 = Disable 1 = Enable
Code Direction Identifier Enable	/Comms /OutForm/Standard /DirEn	508	1	0 = Disable 1 = Enable
Forward Direction String	/Comms /OutForm/Standard /FwDirection	509	3	Length: 0 to 32
Reverse Direction String	/Comms /OutForm/Standard /RvDirection	528	3	Length: 0 to 32
Unknown Direction String	/Comms /OutForm/Standard /NoDirection	550	3	Length: 0 to 32
Termination String	/Comms /OutForm/Standard /Terminator	7	3	Length: 0 to 128
Data packet Separators	/Comms /OutForm/Standard /Separator	82	3	Length: 0 to 128

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Code Field Length Setting	/Comms /OutForm/Standard /FieldType	45	1	1 = Fixed Length 0 = Variable Length
Code Field Length	/Comms /OutForm/Standard /FieldLen	46	0	Range: 0 to 48
Data Justification	/Comms /OutForm/Standard /FillDir	47	1	0 = Left 1 = Right
Fill Character	/Comms /OutForm/Standard /FillCh	48	3	Length: 1
MULTIDATA				
Address TX	/Comms /OutForm/Multidata /Address	-	1	0 = Disable 1 = Enable
Header	/Comms /OutForm/Multidata /AddrHeader	-	3	Length: 0 to 32
Separator	/Comms /OutForm/Multidata /AddrSeparator	-	3	Length: 0 to 32
CRISPLANT PARAMETERS				
Crisplant Manufacturer ID	/Comms /CrispPar/ID	61	2	Length: 1
Heartbeat Message	/Comms /CrispPar/HBEnable	-	1	0 = Disable 1 = Enable
Heartbeat Message Timing (ms)	/Comms /CrispPar/HBTime	-	0	Range: 40 to 60000
Type of Crisplant Protocol	/Comms /CrispPar/Protocol	-	1	0 = CSC 1 = CMC
Reading Mask Tx	/Comms /CrispPar /ReadMask	-	1	0 = Disable 1 = Enable
Code Type Tx	/Comms /CrispPar /CodeType	-	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
CARGOSCAN PARAMETERS				
Code Field Length Setting	/Comms /CargoPar/Protocol	-	1	0 = Variable Length 1 = Fixed Length
Code Field Length	/Comms /CargoPar/FieldLen	-	0	Range: 0 to 48
Data Justification	/Comms /CargoPar/FillDir	-	1	0 = Left 1 = Right
Fill Character	/Comms /CargoPar/FillCh	-	3	Length: 1
Header String	/Comms /CargoPar/ Header	-	3	Length: 0 to 128
Termination String	/Comms /CargoPar/Terminator	-	3	Length: 0 to 128
S/W Divide Encoder Frequency	/Comms /CargoPar/DivEnc	-	1	0 = Disable 1 = Enable
CARGOSCAN PARAMETERS / OUTPUT MESSAGES SETTING				
Add AIM Prefix	/Comms /CargoPar/OutMsg /AddAimPrefix	-	1	0 = Disable 1 = Enable
Purolator Custom Check	/Comms /CargoPar/OutMsg /PurolatorCustum Check	-	1	0 = Disable 1 = Enable
AM/PM Behaviour	/Comms /CargoPar/OutMsg /AMPM	-	1	0 = Disable 1 = Enable
AM Message Target	/Comms /CargoPar/OutMsg /AMPort	-	1	0 = Main 1 = Aux 2 = Socket1 3 = Socket2 4 = Socket3
Heartbeat Function	/Comms /CargoPar/OutMsg /HBEn	-	1	0 = Disable 1 = Enable
Heartbeat Timeout (ms)	/Comms /CargoPar/OutMsg /HBTimeOut	-	0	Range: 40 to 60000
Heartbeat String	/Comms /CargoPar/OutMsg /HBString	-	3	Length: 0 to 18

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Conveyor Directionality Input	/Comms /CargoPar/OutMsg /ConvDirIn	-	1	1 = Input 1 3 = Input 3 4 = Input 4"
Photoeye Counter Function	/Comms /CargoPar/OutMsg /PhtECnt	-	1	0 = Disable 1 = Enable
Photoeye Counter Function Input	/Comms /CargoPar/OutMsg /PhtEIn	-	1	1 = Input 1 3 = Input 3 4 = Input 4"
Photoeye Leading Edge Message	/Comms /CargoPar/OutMsg /PhtEMsg	-	3	Length: 0 to 16
Spontaneous Status Message	/Comms /CargoPar/OutMsg /ExtDiag	-	1	0 = Disable 1 = Enable
Multi Tx Transport Disabled	/Comms /CargoPar/OutMsg /MTxEnable	-	1	0 = Disable 1 = Enable
Diagnostic Data On Main Serial Channel	/Comms /CargoPar/OutMsg /DiagSerMain	-	1	0 = Disable 1 = Enable
Diagnostic Data on Auxiliary Serial Channel	/Comms /CargoPar/OutMsg /DaigSerAux	-	1	0 = Disable 1 = Enable
Diagnostic Data on UserSocket (depth: N = 1 to 3)	/Comms /CargoPar/OutMsg /DiagUsrSock#N	-	1	0 = Disable 1 = Enable
Debug Data on Main Serial Channel	/Comms /CargoPar/OutMsg /DbgSerMain	-	1	0 = Disable 1 = Enable
Debug Data on Auxiliary Serial Channel	/Comms /CargoPar/OutMsg /DbgSerAux	-	1	0 = Disable 1 = Enable
Debug Data on UserSocket (depth: N = 1 to 3)	/Comms /CargoPar/OutMsg /DbgUsrSock#N	-	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
CARGOSCAN PARAMETERS / CODE FILTERS				
Enable UPS Code Filter	/Comms /CargoPar/CarCodes /UPSFlt	-	1	0 = Disable 1 = Enable
Enable German Post 2/5 IL Code Filter	/Comms /CargoPar/CarCodes /GPFlt	-	1	0 = Disable 1 = Enable
Enable SSCC-18 Code Filter	/Comms /CargoPar/CarCodes /EANFlt	-	1	0 = Disable 1 = Enable
Enable DPD Code Filter	/Comms /CargoPar/CarCodes /DPDFltEn	-	1	0 = Disable 1 = Enable
UPS CODE TYPE FILTERS				
UPS codes 1Z type	/Comms /CargoPar/CarCodes /UPSFIlter/UPS1Z	-	1	0 = Disable 1 = Enable
Service Upgrade, '403' Start String length 8	/Comms /CargoPar/CarCodes /UPSFIlter/UPSServ	-	1	0 = Disable 1 = Enable
Transmit all codes PTN type except codes below that must be selected	/Comms /CargoPar/CarCodes /UPSFIlter/PTN /UPSPTN	44	1	0 = Disable 1 = Enable
Including codes that start with '400...'	/Comms /CargoPar/CarCodes /UPSFIlter/PTN /PTN400	-	1	0 = Disable 1 = Enable
Including codes that start with '420...'	/Comms /CargoPar/CarCodes /UPSFIlter/PTN /PTN420	-	1	0 = Disable 1 = Enable
Including codes that start with '421...'	/Comms /CargoPar/CarCodes /UPSFIlter/PTN /PTN421	-	1	0 = Disable 1 = Enable
Including codes that start with '51L...'	/Comms /CargoPar/CarCodes /UPSFIlter/PTN /PTN51L	-	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Including codes that start with '52L...'	/Comms /CargoPar/CarCodes /UPSFIlter/PTN /PTN52L	-	1	0 = Disable 1 = Enable
Including codes that start with '54L...'	/Comms /CargoPar/CarCodes /UPSFIlter/PTN /PTN54L	-	1	0 = Disable 1 = Enable
Including codes that start with '55L...'	/Comms /CargoPar/CarCodes /UPSFIlter/PTN /PTN55L	-	1	0 = Disable 1 = Enable
Start with '420' length 8 or 12	/Comms /CargoPar/CarCodes /UPSFIlter/POS /POS420	-	1	0 = Disable 1 = Enable
Start with '421' length from 6 to 15	/Comms /CargoPar/CarCodes /UPSFIlter/POS /POS421	-	1	0 = Disable 1 = Enable
Start with '51L' length 8, 9, 12	/Comms /CargoPar/CarCodes /UPSFIlter/POS /POS51L	-	1	0 = Disable 1 = Enable
Start with '52L' length 8, 9, 12	/Comms /CargoPar/CarCodes /UPSFIlter/POS /POS52L	-	1	0 = Disable 1 = Enable
Start with '54L' length from 6 to 19	/Comms /CargoPar/CarCodes /UPSFIlter/POS /POS54L	-	1	0 = Disable 1 = Enable
Start with '55L' length from 6 to 19	/Comms /CargoPar/CarCodes /UPSFIlter/POS /POS55L	-	1	0 = Disable 1 = Enable
DPD CODE TYPE FILTERS				
Enable codes 2/5 with length 10 digits filter	/Comms /CargoPar/CarCodes /DPDFlt/DPD10	-	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Enable codes 2/5 with length 12 digits filter	/Comms /CargoPar/CarCodes /DPDFlt/DPD12	-	1	0 = Disable 1 = Enable
Enable codes 2/5 with length 4 digits starting with '0...' filter	/Comms /CargoPar/CarCodes /DPDFlt/DPD0	-	1	0 = Disable 1 = Enable
Enable codes 2/5 with length 4 digits starting with '90..' filter	/Comms /CargoPar/CarCodes /DPDFlt/DPD90	-	1	0 = Disable 1 = Enable
Enable codes 128 with length 28 digits filter	/Comms /CargoPar/CarCodes /DPDFlt/DPD128	-	1	0 = Disable 1 = Enable
MAIN SERIAL PORT				
Data TX	/Comms /SerMain/SerMain	510	1	0 = Disable 1 = Enable
Heartbeat	/Comms /SerMain/Heartbeat	-	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned"
Heartbeat Timeout	/Comms /SerMain /HeartbeatTimeOut	-	0	Range: 0 to 3600
Heartbeat Start String	/Comms /SerMain/heartbeat Start	-	3	Length: 0 to 32
Heartbeat Stop String	/Comms /SerMain/Heartbeat Stop	-	3	Length: 0 to 32
Send Diagnostic Info	/Comms /SerMain/SDSMAIN	-	1	0 = Disable 1 = Enable
MAIN SERIAL PORT PARAMETERS				
Main Port Communication mode	/Comms /SerMain/Line /Mode	33	1	0 = Standard 1 = MUX 32 Slave 2 = Siemens 3964 3 = Siemens RK512

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Main Port Electrical Interface	/Comms /SerMain/Line /MainHW	10	1	0 = RS232 1 = RS485 Full Duplex
MUX 32 protocol address	/Comms /SerMain/Line /Addr	58	0	Range: 0 to 31
Handshake	/Comms /SerMain/Line /FlowCtrl	57	1	0 = None 1 = Hardware (RTS/CTS) 2 = Software (Xon/Xoff)
Handshake (RS485)	/Comms /SerMain/Line /Flow485	60	1	0 = None 1 = Software (Xon/Xoff)
Baud Rate	/Comms /SerMain/Line /StdBaud	49	1	8 = 1200 1 = 2400 2 = 4800 3 = 9600 4 = 19200 5 = 38400 6 = 57600 7 = 115200
Baud Rate (MUX32)	/Comms /SerMain/Line /MuxBaud	59	1	1 = 2400 2 = 4800 3 = 9600 4 = 19200 5 = 38400 6 = 57600
Parity	/Comms /SerMain/Line /Parity	50	1	0 = None 1 = Odd 2 = Even
Data Bits	/Comms /SerMain/Line/Data	51	1	0 = 7 1 = 8
Stop Bits	/Comms /SerMain/Line/Stop	52	1	0 = 1 1 = 2
Checksum (Siemens 3964)	/Comms /SerMain/Line /S3964Chk	-	1	0 = Disable 1 = Enable
Priority (Siemens 3964)	/Comms /SerMain/Line /S3964Prio	-	1	0 = Low 1 = High

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Header n. 5 (Siemens 3964)	/Comms /SerMain/Line /SRKHead5	-	3	Length: 1
Header n. 6 (Siemens 3964)	/Comms /SerMain/Line /SRKHead6	-	3	Length: 1
Header n. 9 (Siemens 3964)	/Comms /SerMain/Line /SRKHead9	-	3	Length: 1
Header n. 10 (Siemens 3964)	/Comms /SerMain/Line /SRKHead10	-	3	Length: 1
Filler Character (Siemens 3964)	/Comms /SerMain/Line /SRKFillChar	-	3	Length: 1
Filler Position (Siemens 3964)	/Comms /SerMain/Line /SRKFillerPos	-	1	0 = Before Data 1 = After Data
AUXILIARY SERIAL PORT				
Search for CBX BM100 at Device Startup	/Comms /SerAux /SearchForCBX	5247	1	0 = Disable 1 = Enable
Data TX	/Comms /SerAux/SerAux	511	1	0 = Disable 1 = Enable
Heartbeat	/Comms /SerAux /Heartbeat	-	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned"
Heartbeat Timeout	/Comms /SerAux /HeartbeatTimeOut	-	0	Range: 0 to 3600
Heartbeat Start String	/Comms /SerAux/heartbeatStart	-	3	Length: 0 to 32
Heartbeat Stop String	/Comms /SerAux/HeartbeatStop	-	3	Length: 0 to 32
Pass Through	/Comms /SerAux/PTSource	512	1	0 = Disable 1 = Enable
Send Diagnostic Info	/Comms /SerAux/SDSAUX	-	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
PASS THROUGH OPTIONS				
String Max Length	/Comms /SerAux/PTOpt /PTMaxDim	513	0	Range: 0 to 32.767
Termination string	/Comms /SerAux/PTOpt /PTTerm	514	3	Length: 1 to 32
CHANNEL SELECTION TO SEND PASSTROUGH DATA				
Main Serial Port	/Comms /SerAux/PTOpt /PTSend /SerMain	-	1	0 = Disable 1 = Enable
AUXILIARY SERIAL PORT PARAMETERS				
Baud Rate	/Comms /SerAux/Line /StdBaud	53	1	8 = 1200 1 = 2400 2 = 4800 3 = 9600 4 = 19200 5 = 38400 6 = 57600 7 = 115200
Parity	/Comms /SerAux/Line /Parity	54	1	0 = None 1 = Odd 2 = Even
Data Bits	/Comms /SerAux/Line /Data	55	1	0 = 7 1 = 8
Stop Bits	/Comms /SerAux/Line /Stop	56	1	0 = 1 1 = 2
ETHERNET				
LINE PARAMETERS				
Status	/Comms /Ethernet/System /Status	90	1	0 = Disable 1 = Enable
SW Release (Read-only)	/Comms /Ethernet/System /Sw_release	91	2	Length: 0 to 10

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
MAC Address (Read-only)	/Comms /Ethernet/System /MAC	92	2	Length: 0 to 16
Ethernet Speed	/Comms /Ethernet/System /Eth_speed	94	1	0 = Auto 1 = 10Mbit Half 2 = 10Mbit Full 3 = 100Mbit Half 4 = 100Mbit Full"
DHCP Client	/Comms /Ethernet/System /DHCP	95	1	0 = Disable 1 = Enable
IP Address	/Comms /Ethernet/System /IP_address	96	2	Length: 0 to 16
Subnet Address	/Comms /Ethernet/System /IP_netmask	97	2	Length: 0 to 16
Gateway Address	/Comms /Ethernet/System /IP_gateway	98	2	Length: 0 to 16
DNS Address 1	/Comms /Ethernet/System /IP_dns1	99	2	Length: 0 to 16
DNS Address 2	/Comms /Ethernet/System /IP_dns2	100	2	Length: 0 to 16
SERVICES				
ETHERNET IP				
Status	/Comms /Ethernet/Services /EthernetIP/Status	66	1	0 = Disable 1 = Enable
Digital Input 1 Conditioning	/Comms /Ethernet/Services /EthernetIP/IO /In/Input1	291	1	0 = Disable 1 = Enable
Digital Input 2 Conditioning	/Comms /Ethernet/Services /EthernetIP/IO /In/Input1	292	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Digital Input 3 Conditioning	/Comms /Ethernet/Services /EthernetIP/IO /In/Input3	293	1	0 = Disable 1 = Enable
Digital Input 4 Conditioning	/Comms /Ethernet/Services /EthernetIP/IO /In/Input4	294	1	0 = Disable 1 = Enable
Phase Echo	/Comms /Ethernet/Services /EthernetIP/IO /In/PhaseEcho	295	1	0 = Disable 1 = Enable
Digital Output 1 Conditioning	/Comms /Ethernet/Services /EthernetIP/IO /Out/Output1	296	1	0 = Disable 1 = Enable
Digital Output 2 Conditioning	/Comms /Ethernet/Services /EthernetIP/IO /Out/Output2	297	1	0 = Disable 1 = Enable
Digital Output 3 Conditioning	/Comms /Ethernet/Services /EthernetIP/IO /Out/Output3	298	1	0 = Disable 1 = Enable
MODBUS CLIENT				
Status	/Comms /Ethernet/Services /ModbusClient/Status	125	1	0 = Disable 1 = Enable
Data TX	/Comms /Ethernet/Services /ModbusClient /ModbusC	-	1	0 = Disable 1 = Enable
Server Address	/Comms /Ethernet/Services /ModbusClient /Server_address	126	2	Length: 0 to 256
Starting Register	/Comms /Ethernet/Services /ModbusClient/ Start_reg	127	0	Range: 0 to (2^{31}-1)

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Number of Registers	/Comms /Ethernet/Services /ModbusClient /Num_reg	128	0	Range: 0 to (2^{31}-1)
SENTINEL CLIENT				
Enable	/Comms /Ethernet/Services /SentinelClient /Enable	-	1	0 = Disable 1 = Enable
Sentinel Socket	/Comms /Ethernet/Services /SentinelClient /SentinelSocket	-	1	0 = Socket 1 1 = Socket 2 2 = Socket 3
Conveyor Speed Check Type	/Comms /Ethernet/Services /SentinelClient/ /ConvSpeedCheck /ConvSpeedCheck Type	-	1	0 = Percent 1 = Absolute
Max Conveyor Speed Percent Error (%)	/Comms /Ethernet/Services /SentinelClient/ /ConvSpeedCheck /MaxConvSpeed PercentError	-	0	Range: 0 to 20
Max Conveyor Speed Absolute Error (mm/s)	/Comms /Ethernet/Services /SentinelClient/ /ConvSpeedCheck /MaxConvSpeedAbs Error	-	0	Range: 0 to 3000
Input timeout (secs)	/Comms /Ethernet/Services /SentinelClient /InputCheck /InputTimeOut	-	0	Range: 3 to 10

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
USER SOCKET #N (DEPTH: N = 1 to 3)				
Status	/Comms /Ethernet/Services /UserSocket#N/Status	134	1	0 = Disable 1 = Enable
Data TX	/Comms /Ethernet/Services /UserSocket#N/Sock	-	1	0 = Disable 1 = Enable
Heartbeat	/Comms /Ethernet/Services /UserSocket#N /Heartbeat	-	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned"
Heartbeat Timeout	/Comms /Ethernet/Services /UserSocket#N /HeartbeatTimeOut	-	0	Range: 0 to 3600
Heartbeat Start String	/Comms /Ethernet/Services /UserSocket#N /heartbeatStart	-	3	Length: 0 to 32
Heartbeat Stop String	/Comms /Ethernet/Services /UserSocket#N /HeartbeatStop	-	3	Length: 0 to 32
Send Diagnostic Info	/Comms /Ethernet/Services /UserSocket#N /SDSSOCK	-	1	0 = Disable 1 = Enable
Socket Type	/Comms /Ethernet/Services /UserSocket#N/Type	135	1	0 = Server 1 = Client
Server Address	/Comms /Ethernet/Services /UserSocket#N /Server_address	136	2	Length: 0 to 256
Protocol	/Comms /Ethernet/Services /UserSocket#N /Protocol	137	1	0 = TCP 1 = UDP
Port Number	/Comms /Ethernet/Services /UserSocket#N/Port	138	0	Range: 0 to 65535

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
DEVICENET				
Data Tx	/Comms /DeviceNet /DeviceNet	381	1	0 = Disable 1 = Enable
PARAMETERS UPDATING				
Parameters Updating	/Comms /DeviceNet/System /UpdatePar	-	1	0 = Disable 1 = Enable
DATA PORT PROTOCOL				
Serial Protocol	/Comms /DeviceNet/SerialData /Protocol	-	1	0 = Generic/Std 1 = Generic/Rev 4 = Header/Std 5 = Header/Rev
Termination char. Enable	/Comms /DeviceNet/SerialData /InStrSuffixEnable	-	1	0 = Disable 1 = Enable
Termination char. value	/Comms /DeviceNet/SerialData /InStrSuffixValue	-	0	Range: 0 to 31
Buffer Flush Enable	/Comms /DeviceNet/SerialData /BufFlushEnable	-	1	0 = Disable 1 = Enable
Buffer Flush Delay (milliseconds)	/Comms /DeviceNet/SerialData /BufFlushDelay	-	0	Range: 8 to 9999
BUS COMMUNICATION				
Data Rate	/Comms /DeviceNet/BusData /BusRate	-	1	0 = 125K 1 = 250K 2 = 500k
Node address (MAC ID)	/Comms /DeviceNet/BusData /NodeAddr	-	0	Range: 0 to 63
Protocol	/Comms /DeviceNet/BusData /Protocol	-	1	0 = Polled 1 = Bit Strobe 2 = Change of state
Master Input Area Size	/Comms /DeviceNet/BusData /TxMsgSize	-	0	Range: 0 to 254

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
BUS COMMUNICATION				
Master Output Area Size	/Comms /DeviceNet/BusData /RxMsgSize	-	0	Range: 0 to 254
PROFIBUS				
Data Tx	/Comms /ProfiBus /ProfiBus	266	1	0 = Disable 1 = Enable
Heartbeat	/Comms /ProfiBus /Heartbeat	-	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned"
Heartbeat Timeout	/Comms /ProfiBus /HeartbeatTimeOut	-	0	Range: 0 to 3600
Heartbeat Start String	/Comms /ProfiBus /heartbeatStart	-	3	Length: 0 to 32
Heartbeat Stop String	/Comms /ProfiBus /HeartbeatStop	-	3	Length: 0 to 32
Send Diagnostic Info	/Comms /ProfiBus /SDSPBUS	-	1	0 = Disable 1 = Enable
Host Heartbeat	/Comms /ProfiBus /HostHeartbeat	-	1	0 = Disable 1 = Enable
Host Heartbeat Timeout	/Comms /ProfiBus /HostHeartbeatTime Out	-	0	Range: 0 to 3600
BUS COMMUNICATION				
Node Address	/Comms /ProfiBus/BusData /NodeAddr	268	0	Range: 0 to 125
Data Flow Control	/Comms /ProfiBus/BusData /FlowControl	269	1	0 = Disable 1 = DPD Driver 2 = DAD Driver 3 = SDP Driver

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Data Consistency	/Comms /ProfiBus /ConsistencyAbil	290	1	0 = Disable 1 = Enable
DIGITAL I/O CONDITIONING				
Input 1	/Comms /ProfiBus /BusData/IO /In/Input1	-	1	0 = Disable 1 = Enable
Input 2	/Comms /ProfiBus /BusData/IO /In/Input2	-	1	0 = Disable 1 = Enable
Input 3	/Comms /ProfiBus /BusData/IO /In/Input3	-	1	0 = Disable 1 = Enable
Input 4	/Comms /ProfiBus /BusData/IO /In/Input4	-	1	0 = Disable 1 = Enable
Phase Echo	/Comms /ProfiBus /BusData/IO /In/PhaseEcho	-	1	0 = Disable 1 = Enable
Output 1	/Comms /ProfiBus /BusData/IO /Out/IOutput1	-	1	0 = Disable 1 = Enable
Output 2	/Comms /ProfiBus /BusData/IO /Out/Ioutput2	-	1	0 = Disable 1 = Enable
Output 3	/Comms /ProfiBus /BusData/IO /Out/Ioutput3	-	1	0 = Disable 1 = Enable

4.6 DIGITAL I/O SETTING

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
DIGITAL INPUT LINES SETTING				
Debouncing For Input 1, 3 and 4	/IO /In/Debounce_0_2_3	11	1	1 = 500 us 3 = 5 ms
Debouncing For Input 2	/IO /In/Debounce_1	13	1	1 = 500 us 3 = 5 ms
Input 1 active level Overridden By Operating Mode	/IO /In/In1Lev	229	1	0 = Active Closed 1 = Active Open
Input 2 active level Overridden By Operating Mode	/IO /In/In2Lev	230	1	0 = Active Closed 1 = Active Open
Input 3 active level Overridden By Operating Mode	/IO /In/In3Lev	231	1	0 = Active Closed 1 = Active Open
Input 4 active level Overridden By Operating Mode	/IO /In/In4Lev	232	1	0 = Active Closed 1 = Active Open
DIGITAL OUTPUT 1 SETTING				
Line State	/IO /Out/Out0 /Idle	19	1	0 = Normally Open 1 = Normally Closed
Activation Event	/IO /Out/Out0 /Active	20	1	0 = None 1 = Complete Read 2 = Partial Read 3 = No Read 5 = Phase On 6 = Phase Off 8 = Multiple Read 9 = Right 10 = Wrong
Alternative Activation Event	/IO /Out/Out0 /Active1	515	1	0 = None 1 = Complete Read 2 = Partial Read 3 = No Read 5 = Phase On 6 = Phase Off 8 = Multiple Read 9 = Right 10 = Wrong

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Deactivation Event	/IO /Out/Out0 /Deactive	21	1	0 = None 7 = Timeout 5 = Phase On 6 = Phase Off
Alternative Deactivation Event	/IO /Out/Out0 /Deactive1	516	1	0 = None 5 = Phase On 6 = Phase Off
Activate on any Diagnostics Error	/IO /Out/Out0 /ActiveDiagnoErr	-	1	0 = Disable 1 = Enable
Deactivate when all Diagnostic Errors Recovered	/IO /Out/Out0 /DeactiveDiagnoNoErr	-	1	0 = Disable 1 = Enable
Deactivation Timeout (ms)	/IO /Out/Out0 /Timeout	22	0	Range: 40 to 15.000
DIGITAL OUTPUT 2 SETTING				
Line State	/IO /Out/Out1 /Idle	23	1	0 = Normally Open 1 = Normally Closed
Activation Event	/IO /Out/Out1 /Active	24	1	0 = None 1 = Complete Read 2 = Partial Read 3 = No Read 5 = Phase On 6 = Phase Off 8 = Multiple Read 9 = Right 10 = Wrong
Alternative Activation Event	/IO /Out/Out1 /Active1	517	1	0 = None 1 = Complete Read 2 = Partial Read 3 = No Read 5 = Phase On 6 = Phase Off 8 = Multiple Read 9 = Right 10 = Wrong

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Deactivation Event	/IO /Out/Out1 /Deactive	25	1	0 = None 7 = Timeout 5 = Phase On 6 = Phase Off
Alternative Deactivation Event	/IO /Out/Out1 /Deactive1	518	1	0 = None 5 = Phase On 6 = Phase Off
Activate on any Diagnostics Error	/IO /Out/Out1 /ActiveDiagnoErr	-	1	0 = Disable 1 = Enable
Deactivate when all Diagnostic Errors Recovered	/IO /Out/Out1 /DeactiveDiagnoNoErr	-	1	0 = Disable 1 = Enable
Deactivation Timeout (ms)	/IO /Out/Out1 /Timeout	26	0	Range: 40 to 15.000
DIGITAL OUTPUT 3 SETTING				
Line State	/IO /Out/Out2 /Idle	27	1	0 = Normally Open 1 = Normally Closed
Activation Event	/IO /Out/Out2 /Active	28	1	0 = None 1 = Complete Read 2 = Partial Read 3 = No Read 5 = Phase On 6 = Phase Off 8 = Multiple Read 9 = Right 10 = Wrong
Alternative Activation Event	/IO /Out/Out2 /Active1	519	1	0 = None 1 = Complete Read 2 = Partial Read 3 = No Read 5 = Phase On 6 = Phase Off 8 = Multiple Read 9 = Right 10 = Wrong

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Deactivation Event	/IO /Out/Out2 /Deactive	29	1	0 = None 7 = Timeout 5 = Phase On 6 = Phase Off
Alternative Deactivation Event	/IO /Out/Out2 /Deactive1	520	1	0 = None 5 = Phase On 6 = Phase Off
Activate on any Diagnostics Error	/IO /Out/Out2 /ActiveDiagnoErr	-	1	0 = Disable 1 = Enable
Deactivate when all Diagnostic Errors Recovered	/IO /Out/Out2 /DeactiveDiagnoNoErr	-	1	0 = Disable 1 = Enable
Deactivation Timeout (ms)	/IO /Out/Out2 /Timeout	30	0	Range: 40 to 15.000

4.7 SCANNER CLUSTER

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
LOCAL DEVICE NETWORK SETTING				
Cluster Description	/Cluster /Descr	197	2	Length: 0 to 32
Topology Role	/Cluster /TopRole	193	1	0 = Master (Synchronized) 1 = Master (Multidata) 2 = Slave (Synchronized) 3 = Other 12 = Slave (Multidata)
Lonworks Slave Address	/Cluster /SlAddr	35	1	1 = Slave1 2 = Slave2 3 = Slave3 … 29 = Slave29 30 = Slave30 31 = Slave31 100 = Slave Jolly
DEVICE IDENTIFICATION #N (DEPTH: N = 1 to 31)				
Device Enable	/Cluster /Device#N/Enable	198	1	0 = Disable 1 = Enable
Device Cluster	/Cluster /Device#N/Descr	199	2	Length: 0 to 32

4.8 DIAGNOSTICS

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
DIAGNOSTICS				
PackTrack Debug Message Tx	/Diagno /PkTrDbg_MsgTx	-	1	0 = Disable 1 = Enable
PackTrack Debug Message Target	/Diagno /MsgPort	-	1	0 = Main 1 = Aux 2 = Socket1 3 = Socket2 4 = Socket3
PackTrack Debug Message Digital Input	/Diagno /PkTrDbg_Input	-	1	0 = None 1 = Input 1 2 = Input 2 3 = Input 3 4 = Input 4
Enable	/Diagno /Enable	-	1	0 = Disable 1 = Enable
Conveyor Info	/Diagno /ConveyorInfo	-	1	0 = Not Available 1 = Available
Conveyor Info Provider	/Diagno /ConveyorInfoProvider			0 = Application SW 1 = Input_1 2 = Input_2 3 = Input_3 4 = Input_4
Refresh Time	/Diagno /RefreshT	-	1	1 = 1 sec 2 = 2 sec 5 = 5 sec 10 = 10 sec 30 = 30 sec 60 = 1 min
Net Diagnostics	/Diagno /NetDiag	37	1	0 = Disable 1 = Enable
Local Net Board	/Diagno /LocalNetBoard	-	1	0 = Disable 1 = Enable
No Scan	/Diagno /NoScan	-	1	0 = Disable 1 = Enable
No Sync	/Diagno /NoSync	-	1	0 = Disable 1 = Enable
No Phase Timeout	/Diagno /NoPhaseTO	-	1	0 = Disable 1 = 1 sec 2 = 5 sec 3 =10 sec

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
				4 = 20 sec 5 = 1 min 6 = 5 min 7 = 10 min 8 = 20 min
Start/Stop Input Failure (Online 2 Input Only)	/Diagno /InFail	-	1	0 = Disable 1 = Enable
Presence Sensor Failure	/Diagno /PSFail	-	1	0 = Disable 1 = Enable
Presence Sensor Stuck Timeout	/Diagno /PSStuck	-	1	0 = Disable 1 = 1 sec 2 = 2 sec 5 = 5 sec 10 = 10 sec 30 = 30 sec 60 = 1 min
Encoder Failure Timeout	/Diagno /EncFailTO	-	1	0 = Disable 1 = 1 sec 2 = 2 sec 5 = 5 sec 10 = 10 sec 30 = 30 sec 60 = 1 min
Encoder Failure	/Diagno /Encfail	-	1	0 = Disable 1 = Enable
DIGITIZER: Motor Warning	/Diagno /DgtzMotWarn	-	1	0 = Disable 1 = Enable
DIGITIZER: Motor Failure	/Diagno /DgtzMotFail	-	1	0 = Disable 1 = Enable
DIGITIZER: Motor Life End	/Diagno /DgtzMotEnd	-	1	0 = Disable 1 = Enable
DIGITIZER: Laser Fail	/Diagno /DgtzLasFail	-	1	0 = Disable 1 = Enable
DIGITIZER: Laser Life End	/Diagno /DgtzLasEnd	-	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Motor Failure	/Diagno /OmMotFail	-	1	0 = Disable 1 = Enable
FLASH: Motor Failure	/Diagno /AfMotFail	-	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Protocol Indexes Alarms	/Diagno /ProtocolIndexEn	-	1	0 = Disable 1 = Enable
ACTIONS				
TX Mode	/Diagno /Actions/ /TxMode	-	1	0 = On Timeout 1 = With Code"
TX Refresh	/Diagno /Actions/ /AsyncTO	-	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	/Diagno /Actions/ /SyncOpt	-	1	0 = Append to Code 1 = Replace Code
Aux	/Diagno /Actions/ /SerAuxTx	-	1	0 = Disable 1 = Enable
Main	/Diagno /Actions/ /SerMainTx	-	1	0 = Disable 1 = Enable
Ethernet IP	/Diagno /Actions/ /Eth/ethIP	-	1	0 = Disable 1 = Enable
Modbus Client	/Diagno /Actions/ /Eth/modBusC	-	1	0 = Disable 1 = Enable
UserSocket#N (Depth: N = 1 to 3)	/Diagno /Actions/ /Eth/UsrSocket#N	-	1	0 = Disable 1 = Enable
FORMAT				
Header String	/Diagno /Format/ /Header	-	3	Length: 1 to 128

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Terminator String	/Diagno /Format/ /Terminator	-	3	Length: 1 to 128
Error Message Type	/Diagno /Format/ /MsgType	-	1	0 = Numeric 1 = Global String
Global String	/Diagno /Format/ /GlobalStr	-	3	Length: 1 to 32

4.9 STATISTICS

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
USER INFORMATION SECTION				
Enable	/Statisti /Enable	217	1	0 = Disable 1 = Enable
Separator	/Statisti /Separator	-	3	Length: 0 to 32
Time (hh mm)	/Statisti /Clock_hm	-	1	0 = Disable 1 = Enable
Phase Counter	/Statisti /PhaseCnt	-	1	0 = Disable 1 = Enable
Good Read Counter	/Statisti /GoodrCnt	-	1	0 = Disable 1 = Enable
Partial Read Counter	/Statisti /PartialRCnt	-	1	0 = Disable 1 = Enable
No Read Counter	/Statisti /NoRCnt	-	1	0 = Disable 1 = Enable
Multiple Read Counter	/Statisti /MulRCnt	-	1	0 = Disable 1 = Enable

4.10 USER INFORMATION SECTION

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
USER INFORMATION SECTION				
End User Name	/UserInfo /EndUser	521	2	Length: 0 to 32
Device Name	/UserInfo /Name	522	2	Length: 0 to 128
Line Name	/UserInfo /Line	523	2	Length: 0 to 128

5 APPENDIX

5.1 CONTROL RULES TABLE

This chapter provides a list of the most important control rules that can be applied to the 6000 Family and to the 8KA Family parameters.

PARAMETER	CONTROL RULES
CODE DEFINITION	
Code Combination	Must be ≠ *Single Label* and ≠ *Code Collection* if Host Application Protocol Type = *Crisplant*. Must be ≠ *Standard Multi Label* and ≠ *Logical Combination* if Operating Mode Selection = *Continuous*. Must be ≠ Code Collection if No Read Message = *Local No Read(s) Message.*
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*.
Associate Same Codes When Coming From Different Scanners	Not available if Scanner Cluster Topology Role ≠ *Master Synchronized* or ≠ *Master Multidata*.
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	
Operating Mode Selection	Must be ≠ *Automatic* and ≠ *Continuous* if Host Application Protocol Type = *Crisplant*. Must be ≠ *Continuous* if Code Combination ≠ *Single Label*. Must be ≠ *Automatic* and ≠ *Continuous* if Scanner Cluster Topology Role = *Master Synchronized*. Must be ≠ *Automatic* and ≠ *Continuous* if Scanner Cluster Topology Role = *Slave Synchronized*.

PARAMETER	CONTROL RULES
On Line Options	Must be ≠ *Serial On Line* if Host Application Protocol Type = *Crisplant*.
READING SYSTEM LAYOUT	
Device Assignment	Must be ≠ *Master RS232 (Type A)* and ≠ *Slave RS232 (Type A)* if Auxiliary Serial Port Data TX = *Enable*. Must be ≠ *Master RS232 (Type A)* and ≠ *Slave RS232 (Type A)* if Auxiliary Serial Port Pass Through = *Enable*.
DATA COMMUNICATION SETTING	
Host Application Protocol Type	Must be ≠ *Crisplant* if Operating Mode Selection = *Automatic or = Continuous or = Test.* Must be ≠*Crisplant* and ≠ *Cargoscan* if On Line Options = *Serial On Line*. Must be ≠*Crisplant* and ≠ *Cargoscan* if Main Port Communication Mode = *Mux 32 slave* and = *Siemens 3964* and = *Siemens RK512.* Must be ≠*Crisplant* and ≠ *Cargoscan* if Auxiliary Serial Port Pass Through = *Enable*. Must be ≠ *Cargoscan* if Operating Mode Selection ≠ *Continuous.*
MAIN SERIAL PORT	
Main Port Communication mode	Value must be = Standard if Host Application Protocol Type ≠ *Standard*.
AUXILIARY SERIAL PORT	
Pass Through	Must be ≠ *Enable* if Host Application Protocol Type =*Crisplant* or = *Cargoscan*
DATA COMMUNICATION SETTING	
Host Application Protocol Type	Must be ≠ *Crisplant* if Operating Mode Selection ≠ *On Line*. Must be ≠ *Crisplant* if On Line Options = *Serial On Line*. Must be ≠ *Crisplant* if Main Port Communication Mode ≠ *Standard*. Must be ≠ *Crisplant* if Auxiliary Serial Port Pass Through = *Enable*.

PARAMETER	CONTROL RULES
VERIFIER	
Code Verifier	Not available if Code Combination ≠ *Single Label*. Not available if Operating Mode Selection ≠ *On Line* and ≠ *Automatic* and ≠ *Continuous*.

5.2 ERROR CODES TABLE

This chapter 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.

5.3 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**