TCNM-AD/EX/SP Family

HOST MODE PROGRAMMING

CONTENTS

1 HOST MODE PROGRAMMING

An alternative method of programming the TCNM-AD/EX/SP 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. This is called Host Mode Programming.

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

⚠ **CAUTION**	*GeniusPlus 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.

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$_H$> ADDR**	**<ESC> c <CR><LF>**
	ADDR is a character indicating the address of the device in an ID-NET Master/Slave reading system layout **ADDR = <30$_H$> + <Device Address>** where: • **Device Address = 0**: Stand Alone device or Master ID-NET device • **Device Address = 1 to 31**: Slave ID-NET device This means: • **ADDR = <30$_H$>**: Stand Alone device or Master ID-NET device • **ADDR = <31$_H$> to <4F$_H$>**: Slave ID-NET™ 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
1	**Exit Programming Mode**	**<ESC> d M <B0$_H$> ADDR**	**<ESC> d <CR><LF>**
	Where **ADDR** is the address of the device in an ID-NET Master/Slave layout. 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**

   <u>Particular commands may force a restart of the device like Data Storage commands</u> (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.		

<ESC> [C
(Enter Host Mode)

<ESC> H <CR><LF>

<ESC>] B
(Enter Terminal Mode)

<ESC> R <CR><LF>

<ESC> c M <B0$_H$> 0
(Enter Programming Mode)

<ESC> c <CR><LF>
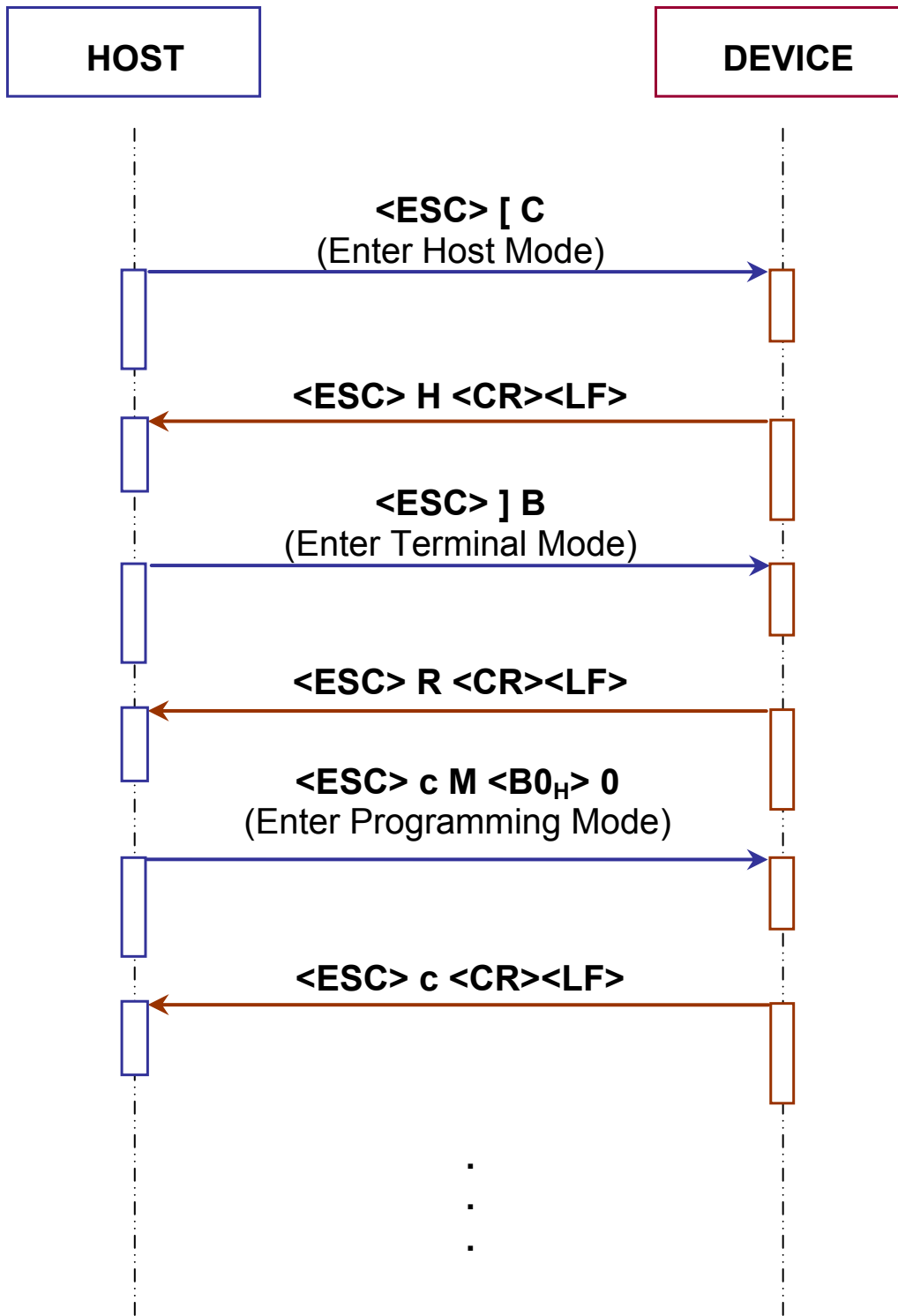
Figure 1 - Connection to Stand Alone Device

HOST

DEVICE

.
.
.

<ESC> d M <B0$_H$> 0
(Exit Programming Mode)

<ESC> d <CR><LF>

<ESC> I A <space>
(Exit Terminal Mode)

<ESC> K <CR><LF>

<ESC> [A
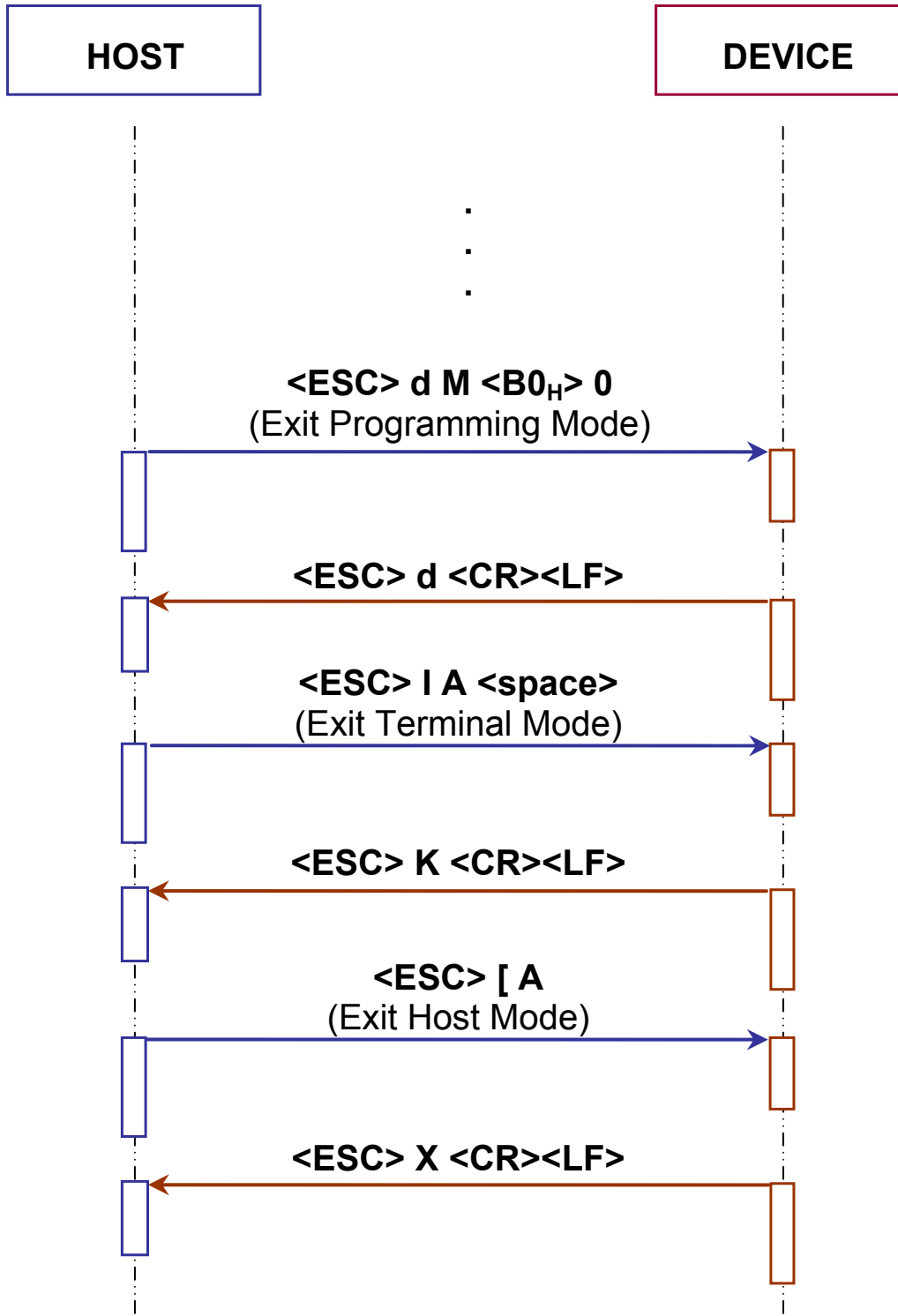(Exit Host Mode)

<ESC> X <CR><LF>

Figure 2 - Disconnection from Stand Alone 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 implementation of shorter programming strings) 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.

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
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).

Path: /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)

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.
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 is strongly suggested to use the shortcuts programming strings.*

Using Complete Parameter Path

The '**Set Parameter**' programming string must have the following format:

<div align="center">

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

</div>

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:

<div align="center">

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

</div>

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:

<div align="center">

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

</div>

Where:

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

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

Using Short Parameter Description (Shortcut)

The '**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)

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

3.3 HOW TO GET SINGLE PARAMETER FROM THE READER

👆 NOTE	*To guarantee the complete compatibility with future software releases, It is strongly suggested to use the shortcuts programming strings.*

Using Complete Parameter Path

The '**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)

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

Using Short Parameter Description (Shortcut)

The '**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)

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 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 GeniusPlus Help On Line of the selected device for further details.*
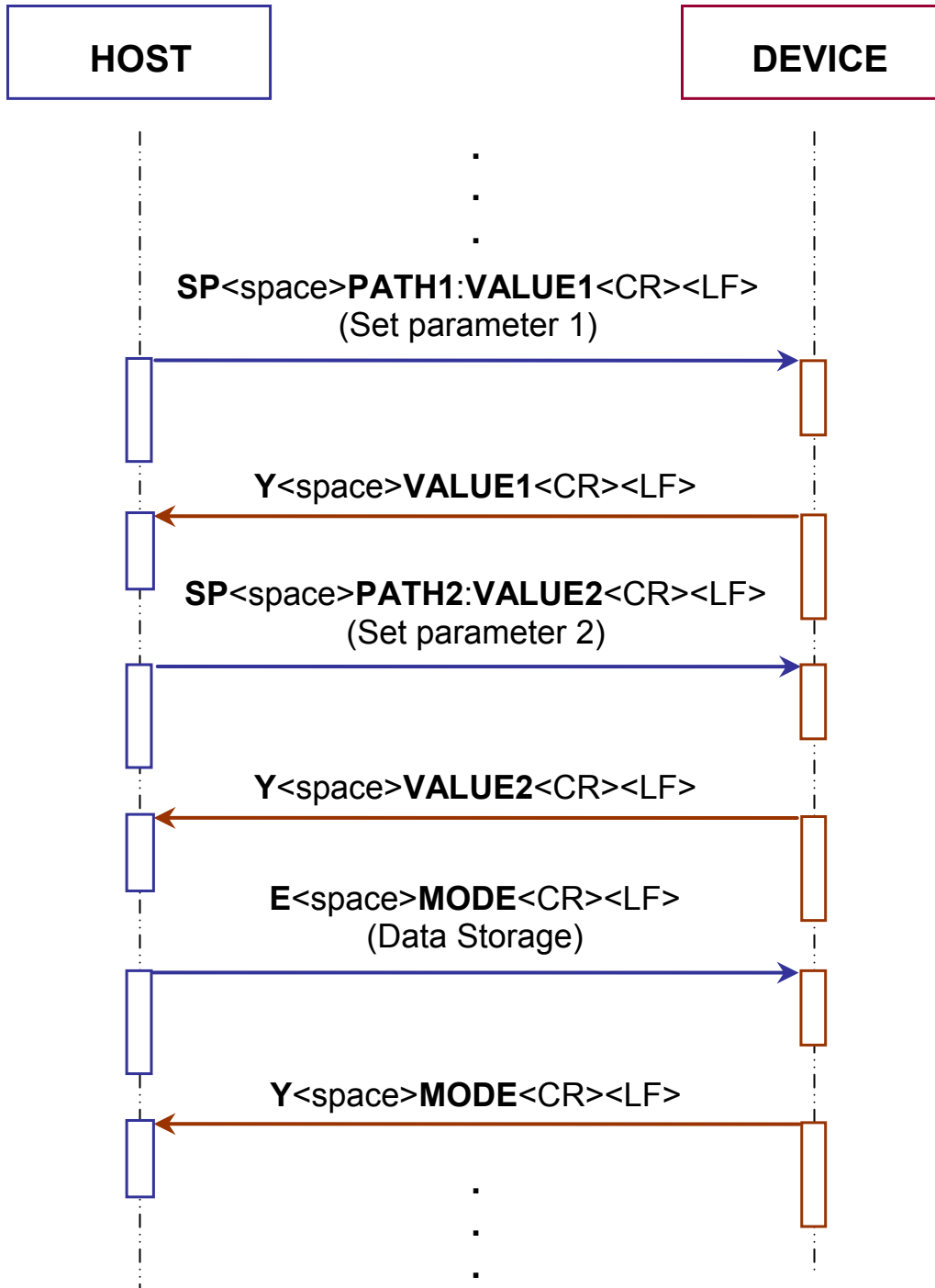
Figure 3 - Two Parameters Programming Session With Data Storage

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 60
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
Value: 0 (Entry 1 $\rightarrow$ 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 <u>USER INFORMATION SECTION</u> folder:

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

The 'Set Parameter' programming string is:

SP<space>/UserInfo/Name:TCNM_FAMILY<CR><LF>

The 'Set Shortcut' programming string is:

SS<space>522:TCNM_FAMILY<CR><LF>

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

Y<space>TCNM_FAMILY<CR><LF>

- 4 -

Set *Header String* parameter in <u>DATA FORMAT</u> 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 -

Get value of Digital Output 2 *Activation Event* parameter in <u>DIGITAL OUTPUT LINES SETTING</u> folder:

Path: /IO/Out1/Active
Shortcut: 24
Type: 1 (Enumeration)
Current Value: 2 (Entry 2 → Partial Read)

The 'Get Parameter' programming string is:

GP<space>/IO/Out1/Active<CR><LF>

The 'Get Shortcut' programming string is:

GS<space>24<CR><LF>

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

Y<space>2<CR><LF>

- 6 -

Get value of *No Read String* parameter in <u>CODE DEFINITION</u> 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 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
Codes Different When Scan Gap Is Greater Than	/Codes /ScanDistCheck	532	0	Range: 1 to 32765
Codes Different When Code Position Gap Is Greater Than	/Codes /PositionDistCheck	533	0	Range: 0 to 255
Associate Same Codes When Read By Different Scanners	/Codes /NetCodeAssociate	534	1	0 = Disable 1 = Enable
LED INDICATION				
Partial Read Is Treated As	/Codes /LedIndic /PartialReadAs	5037	1	0 = No Read 1 = Good Read
Multiple Read is treated as	/Codes /LedIndic /MultipleReadAs	5036	1	0 = No Read 1 = Good Read
LOCAL NO READ STRINGS #N (DEPTH: N = 1 to 15)				
Group Label Local No Read String	/Codes /LocNoReadComb /LocalNoRead#N	17 #N	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 #N	3	Length: 0 to 48

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
FAMILY SETTING / CODE 128 - EAN 128 - ISBT 128				
Decoding Safety	/Codes /Symbology /Cod128Par /DecSaf	5038	0	Range: 1 to 100
Decoding Severity	/Codes /Symbology /Cod128Par /DecSev	5039	0	Range: 1 to 5
Ink Spread Equalization	/Codes /Symbology /Cod128Par /InkSp	5040	1	0 = Disable 1 = Enable
ISBT 128 Concatenation	/Codes /Symbology /Cod128Par /ConcatenationISBT	5000	1	0 = Do Not Chain 1 = Optional Chain 2 = Mandatory Chain
Chain 1: Left -	/Codes /Symbology /Cod128Par /Chain1Left	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	/Codes /Symbology /Cod128Par /Chain1Right	5003	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 2: Left -	/Codes /Symbology /Cod128Par /Chain2Left	5004	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 2: - Right	/Codes /Symbology /Cod128Par /Chain2Right	5005	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 3: Left -	/Codes /Symbology /Cod128Par /Chain3Left	5006	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Chain 3: - Right	/Codes /Symbology /Cod128Par /Chain3Right	5007	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 4: Left -	/Codes /Symbology /Cod128Par /Chain4Left	5008	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 4: - Right	/Codes /Symbology /Cod128Par /Chain4Right	5009	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 5: Left -	/Codes /Symbology /Cod128Par /Chain5Left	5010	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 5: - Right	/Codes /Symbology /Cod128Par /Chain5Right	5011	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 6: Left -	/Codes /Symbology /Cod128Par /Chain6Left	5012	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 6: - Right	/Codes /Symbology /Cod128Par /Chain6Right	5013	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 7: Left -	/Codes /Symbology /Cod128Par /Chain7Left	5014	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 7: - Right	/Codes /Symbology /Cod128Par /Chain7Right	5015	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 8: Left -	/Codes /Symbology /Cod128Par /Chain8Left	5016	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
Chain 8: - Right	/Codes /Symbology /Cod128Par /Chain8Right	5017	1	0 = None 1 = Donation ID … 16 = Nat. Donor ID
FAMILY SETTING / INTERLEAVED 2 OF 5				
Decoding Safety	/Codes /Symbology /Cod25Par /DecSaf	5041	0	Range: 1 to 100

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Decoding Severity	/Codes /Symbology /Cod25Par /DecSev	5042	0	Range: 1 to 5
FAMILY SETTING / CODE 39 - CODE 39 FULL ASCII				
Decoding Safety	/Codes /Symbology /Cod39Par /DecSaf	5043	0	Range: 1 to 100
Decoding Severity	/Codes /Symbology /Cod39Par /DecSev	5044	0	Range: 1 to 5
Inter Character Gap	/Codes /Symbology /Cod39Par /InterCharGap	5045	0	Range: 1 to 12
FAMILY SETTING / EAN-UPC				
Decoding Safety	/Codes /Symbology /EanUpc /DecSaf	5053	0	Range: 1 to 100
Decoding Severity	/Codes /Symbology /EanUpc /DecSev	5054	0	Range: 1 to 5
Ink Spread Equalization	/Codes /Symbology /EanUpc /InkSp	5055	1	0 = Disable 1 = Enable
Addon Overflow Start Ratio	/Codes /Symbology /EanUpc /AddonOverflow	5052	0	Range: 1 to 50
Addon Overflow Stop Ratio	/Codes /Symbology /EanUpc /AddonOverflowStop	5275	0	Range: 1 to 50
Max Distance between EAN/UPC and Addon (in modules)	/Codes /Symbology /EanUpc /EANAddonDistance	5198	0	Range: 1 to 256
FAMILY SETTING / CODABAR–ABC CODABAR				
Decoding Safety	/Codes /Symbology /CodBarPar /DecSaf	5049	0	Range: 1 to 100

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Decoding Severity	/Codes /Symbology /CodBarPar /DecSev	5050	0	Range: 1 to 5
Inter Character Gap	/Codes /Symbology /CodBarPar /InterCharGap	5051	0	Range: 1 to 12
ABC Codabar Concatenation	/Codes /Symbology /CodBarPar /ConcatenationABCcodabar	5001	1	0 = Do Not Chain 1 = Optional Chain 2 = Mandatory Chain
FAMILY SETTING / CODE 93				
Decoding Safety	/Codes /Symbology /Cod93Par /DecSaf	5046	0	Range: 1 to 100
Decoding Severity	/Codes /Symbology /Cod93Par /DecSev	5047	0	Range: 1 to 5
Ink Spread Equalization	/Codes /Symbology /Cod93Par /InkSp	5048	1	0 = Disable 1 = Enable
FAMILY SETTING / PHARMACODE				
Decoding Safety	/Codes /Symbology /Pharmacode /DecSaf	5056	0	Range: 1 to 100
Decoding Severity	/Codes /Symbology /Pharmacode /DecSev	5057	0	Range: 1 to 5
FAMILY SETTING / PLESSEY				
Decoding Safety	/Codes /Symbology /Pharmacode /DecSaf	5271	0	Range: 1 to 100
Decoding Severity	/Codes /Symbology /Pharmacode /DecSev	5272	0	Range: 1 to 5

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
FAMILY SETTING / GS1 DATABAR				
Stacked Codes	/Codes /Symbology /GS1Databar /StackedCodeEn	5631	1	0 = Disable 1 = Enable
CODE LABEL SETTING #N (DEPTH: N = 1 to 10)				
Enable	/Codes /Code#N /Enable	1 #N	1	0 = Disable 1 = Enable
Code Symbology	/Codes /Code#N /Type	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	/Codes /Code#N /AddOn	32 #N	1	0 = No Add On 1 = 2 digits Add On 2 = 5 digits Add On
Label Length	/Codes /Code#N /Length	70 #N	1	0 = Variable 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 … 60 = 60
Minimum Label Length	/Codes /Code#N /MinLength	3 #N	0	Range: 1 to 60
Maximum Label Length	/Codes /Code#N /MaxLength	4 #N	0	Range: 1 to 60

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
GS1 Databar Expanded Label Length	/Codes /Code#N /LengthGS1Expanded	5578 #N	1	0 = Variable 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 … 74 = 74
GS1 Databar Expanded Minimum Label Length	/Codes /Code#N /MinLengthGS1 Expanded	5579 #N	0	Range: 2 to 74
GS1 Databar Expanded Maximum Label Length	/Codes /Code#N /MaxLengthGS1 Expanded	5580 #N	0	Range: 2 to 74
Bar Count (only for Code 128, ISBT 128, CODE 93 and EAN 128)	/Codes /Code#N /6ElBarCount	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 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

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
				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
Bar Count (only for Code 39 Full ASCII))	/Codes /Code#N /9ElBarCountFA	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

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
				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
				53 = 549
				54 = 559
				55 = 569
				56 = 579
				57 = 589
				58 = 599
				59 = 609
				60 = 619
Min Code Position Filter	/Codes /Code#N /MinCodePos	262 #N	0	Range: 0 to 255
Max Code Position Filter	/Codes /Code#N /MaxCodePos	263 #N	0	Range: 0 to 255
Check Digit	/Codes /Code#N /CheckDigit	5 #N	1	0 = Disable 1 = Enable
Check Digit Type (only for Interleaved 2 of 5)	/Codes /Code#N /CheckDigit25IL	526 #N	1	0 = Standard 1 = German 2 = DHL 3 = Daimler-Chrysler 4 = Bosch
Check Digit Type (only for Code 39)	/Codes /Code#N/ /CheckDigit39	527 #N	1	0 = Standard 1 = Mod 7
Check Digit Transmission	/Codes /Code#N /CheckDigitTx	524 #N	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Match String Rule	/Codes /Code#N /MatchStrRule	530 #N	1	0 = Match 1 = Do Not Match
Pattern Match String	/Codes /Code#N /PatMatch	531 #N	3	Length: 0 to 200
Match Direction Rule	/Codes /Code#N /MatchDirectionRule	529 #N	1	0 = Disable 1 = Forward 2 = Reverse
Code Label Local No Read String	/Codes /Code#N /LocNoRead	18 #N	3	Length: 0 to 48
Code Label Local Multiple Read String	/Codes /Code#N /LocMulRead	328 #N	3	Length: 0 to 48
Start Character Transmission (only for Codabar)	/Codes /Code#N /StartChTx	382 #N	1	0 = Disabled 2 = Lower Case 3 = Upper Case
Stop Character Transmission (only for Codabar)	/Codes /Code#N /StopChTx	383 #N	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
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	5115	1	0 = Disable 1 = Enable
Test Mode Data Transmission	/Operating /TestSend	500	1	0 = All Selected Channels + ID-NET (MULTIDATA) 1 = Aux 2 = Disable 3 = Main 4 = Main&Aux
Serial Start String	/Operating /SerialStart	86	3	Length: 1 to 32
Start Input Number	/Operating /ONLStartIn	74	0	Range: 1 to 2
Start Input Active Level	/Operating /ONLStartInLev	75	1	0 = Active Closed 1 = Active Open
Serial Stop String	/Operating /SerialStop	87	3	Length: 1 to 32

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Stop Input Number	/Operating /ONLStopIn	76	0	Range: 1 to 2
Stop Input Active Level	/Operating /ONLStopInLev	77	1	0 = Active Closed 1 = Active Open
Stop Phase Edge	/Operating /PhaseOffLeadEdge	5120	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 15000
Timeout Counting From	/Operating /ONLToutStart	5119	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 32765
Start Input from FieldBus	/Operating /FieldbusOnl	5313	1	0 = Disable 1 = Enable
Continuous Threshold (number of scans)	/Operating /ContThreshold	5185	0	Range: 10 to 32765
Code Filter Depth	/Operating /CodeFilterDepth	502	0	Range: 0 to 50
ACK/NAK Protocol	/Operating /ACKPrt	5114	1	0 = Disable 1 = Enable
Quality Counters	/Operating /OLC	5116	1	0 = Disable 1 = Enable
VERIFIER				
Enable	/Operating /Verifier /EnVerifier	5121	1	0 = Disable 1 = Enable
Verifier Code	/Operating /Verifier /VerifierCode	5126	3	Length: 1 to 60
Store Input	/Operating /Verifier /Input	5124	1	1 = 1 2 = 2
Active Level	/Operating /Verifier /VerifInLev	5127	1	0 = Active Closed 1 = Active Open
Right Code Tx	/Operating /Verifier /EnRightCode	5560	1	0 = Disable 1 = Enable
Wrong Code Tx	/Operating /Verifier /EnWrongCode	5123	1	0 = Disable 1 = Enable
Wrong String Tx	/Operating /Verifier /EnWrong	5122	1	0 = Disable 1 = Enable
Wrong String	/Operating /Verifier /WrongString	5128	3	Length: 1 to 128

4.3 READING SYSTEM LAYOUT

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
READING SYSTEM LAYOUT				
Network Baud Rate (bps)	/Layout /NetBaudMS	5144	1	1 = 19200 2 = 38400 3 = 57600 4 = 125Kb 5 = 250Kb 6 = 500Kb 7 = 1Mb
Local Device Alternative Network Setting	/Layout /DevAssO	196	1	0 = Alone or ID-NET 1 = Master RS232 (Type A) 3 = Slave RS232 (Type A)
Number of Slaves (Type A)	/Layout /NumSlSer	34	0	Range: 1 to 9

4.4 DEVICE NETWORK SETTING

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
SCANNER CLUSTER				
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)
Slave Address	/Cluster /SlAddr	35	1	1 = Slave 1 2 = Slave 2 3 = Slave 3 4 = Slave 4 … 28 = Slave 28 29 = Slave 29 30 = Slave 30 31 = Slave 31
DEVICE IDENTIFICATION #N (DEPTH: N = 1 to 31)				
Device Enable	/Cluster /Device#N /Enable	198 #N	1	0 = Disable 1 = Enable
Device Cluster	/Cluster /Device#N /Descr	199 #N	2	Length: 0 to 32
Device Type	/Cluster /Device#N /DeviceType	5353 #N	2	-
Low level Address	/Cluster /Device#N /LowLevelAddress	701 #N	2	Length: 0 to 64

4.5 READING PARAMETERS

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
READING PARAMETERS				
Scan Speed (TCNM-AD-x2x0 models)	/Reading /ScanSpeed_2100std	5020	1	1 = Off 2 = 500 (Default) 3 = 800
Scan Speed (TCNM-AD-x2x4 models)	/Reading /ScanSpeed_2100tr	5021	1	1 = Off 3 = 800 4 = 1000
Scan Speed (TCNM-EX-x2x0 models)	/Reading /ScanSpeed_2400	5022	1	1 = Off 2 = 600 3 = 800 4 = 1000
Scan Speed (TCNM-SP models)	/Reading /ScanSpeed_4800	5252	1	0 = Off 60 = 600 70 = 700 80 = 800 (Default) 90 = 900
Energy Saving	/Reading /EnergySavingEnab	5129	1	0 = Disable 1 = Enable
Serial Motor ON String	/Reading /SerialMotorOn	5133	3	Length: 0 to 32
Serial Motor OFF String	/Reading /SerialMotorOff	5132	3	Length: 0 to 32
Code Resolution	/Reading /CodeResolution	5024	1	0 = Standard 1 = High 2 = Toggle
Reading Conditions (TCNM-AD and TCNM-EX models)	/Reading /ReadingConditions	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)
Reading Conditions (TCNM-SP models)	/Reading /ReadingConditions4K	5250	1	0 = Standard (Default) 1 = Cartons 2 = Low Contrast 3 = High Skew Angles
Beam Shutter	/Reading /BeamSh	8	1	0 = Disable 1 = Triggered 2 = Enable
Overflow Start Ratio	/Reading /Overflow	286	0	Range: 1 to 50
Overflow Stop Ratio	/Reading /StopOverflow	604	0	Range: 1 to 50
Required Quiet Zones	/Reading /ReqQZ	5131	1	0 = Both 1 = One

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Overflow Ratio	/Reading /OverflowRatio	5130	0	Range: 3 to 32
Reading Mode	/Reading /Linear	285	1	0 = Reconstruction 1 = Linear
FOCUS (TCNM-SP)				
Locked Position (cm/in)	/Reading /Focus /LockedFocusPosition	5203	1	0 = Unlocked 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 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

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
OSCILLATING MIRROR (TCNM-AD AND TCNM-EX)				
OM110 (Oscillating Mirror)				
Oscillating Mode	/Reading /Oscillating /ModeNew	254	1	1 = Fixed 2 = Continuous
Amplitude (degrees)	/Reading /Oscillating /AmplFirstZone	5027	1	10 = 10 15 = 15 20 = 20 25 = 25 30 = 30 35 = 35 40 = 40
Frequency (Hz)	/Reading /Oscillating /FirstZoneContFreq	258	1	5 = 0.5 10 = 1 15 = 1.5 20 = 2 25 = 2.5 30 = 3 35 = 3.5 40 = 4
Triggered	/Reading /Oscillating /Triggered	5028	1	0 = Disable 1 = Enable
Second Zone Trigger	/Reading /Oscillating /TriggerIn	5029	1	0 = Phase 1 = Input 1 2 = Input 2
Second Zone Trigger Level	/Reading /Oscillating /TriggerInLev	5031	1	0 = Active Closed 1 = Active Open
Second Zone Oscillating Mode	/Reading /Oscillating /SecondZoneMode	5032	1	1 = Fixed 2 = Continuous
Second Zone Amplitude (degrees)	/Reading /Oscillating /SecondZone Amplitude	5033	1	10 = 10 15 = 15 20 = 20 25 = 25 30 = 30 35 = 35 40 = 40
Second Zone Frequency (Hz)	/Reading /Oscillating /SecondZoneContFreq	5034	1	5 = 0.5 10 = 1 15 = 1.5 20 = 2 25 = 2.5 30 = 3 35 = 3.5 40 = 4
OSCILLATING MIRROR (TCNM-SP)				
Oscillating Mode	/Reading /Oscillating4K /Mode	5360	1	1 = Fixed 2 = Continuous

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Angle (Degrees)	/Reading /Oscillating4K /FixedAngle	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 36 = 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	COMPLETE PATH	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)	/Reading /Oscillating4K /MinAngle	5362	1	0 = -5 1 = -4.5 2 = -4 3 = -3.5 … 80 = 35
Max Angle (Degrees)	/Reading /Oscillating4K /MaxAngle	5363	1	0 = -5 1 = -4.5 2 = -4 3 = -3.5 … 80 = 35

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Frequency (Hz)	/Reading /Oscillating4K /ContFreq	5364	1	1 = 0.1 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
Triggered	/Reading /Oscillating4K /Triggered	5635	1	0 = Disable 1 = Enable
Second Zone Trigger	/Reading /Oscillating4K /TriggerIn	5636	1	0 = Phase 1 = Input 1 2 = Input 2
Second Zone Trigger Level	/Reading /Oscillating4K /TriggerInLev	5635	1	0 = Active Closed 1 = Active Open
Second Zone Oscillating Mode	/Reading /Oscillating4K /SecondZoneMode	5638	1	1 = Fixed 2 = Continuous
Second Zone Angle (Degrees)	/Reading /Oscillating4K /SecondZoneFixed Angle	5639	1	0 = -5 1 = -4.5 2 = -4 3 = -3.5 … 80 = 35
Second Zone Min Angle (Degrees)	/Reading /Oscillating4K /SecondZoneMin Angle	5380	1	0 = -5 1 = -4.5 2 = -4 3 = -3.5 … 80 = 35
Second Zone Max Angle (Degrees)	/Reading /Oscillating4K /SecondZoneMax Angle	5381	1	0 = -5 1 = -4.5 2 = -4 3 = -3.5 … 80 = 35

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Second Zone Frequency (Hz)	/Reading /Oscillating4K /SecondZoneCont Freq	5382	1	1 = 0.1 2 = 0.2 5 = 0.5 7 = 0.7 … 100 = 10

4.6 DATA COMMUNICATION SETTING

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
DATA COMMUNICATION SETTING				
Host Application Protocol Type	/Comms /Application	84	1	0 = Standard 1 = Crisplant
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 (On Line Operating Mode)	/Comms /OutForm /TxTrigSel	507	1	0 = On Decoding 1 = After Reading Phase Off 2 = Delayed TX Line
Message TX Selection (Automatic Operating Mode)	/Comms /OutForm /AutoTxTrig	543	1	0 = On Decoding 1 = After Reading Phase Off
Physical Encoder	/Comms /OutForm /PhysicalEnc	5554	1	0 = Active Closed 1 = Active Open
Conveyor speed (mm/sec)	/Comms /OutForm /ConvSpeed	5555	0	Range: 1 to 10000
Encoder Reference Signal	/Comms /OutForm /EncRefSignal	5557	2	1 = Input 1 2 = Input 2
Encoder Step (hundredths of mm)	/Comms /OutForm /EncoderStep	5556	0	Range: 1 to 10000
Distance (mm)	/Comms /OutForm /Distance	5558	0	Range: 100 to 20000
Format Type	/Comms /OutForm /FormatType	330	1	0 = Standard 1 = Advanced

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Master Max Tx Delay After Phase Off (ms)	/Comms /OutForm /TX_TimeoutMaster	5178	1	50 = 50 60 = 60 70 = 70 80 = 80 90 = 90 100 = 100 110 = 110 120 = 120 130 = 130 140 = 140 150 = 150 160 = 160 170 = 170 180 = 180 190 = 190 200 = 200 250 = 250 300 = 300 500 = 500
Stand Alone Max TX Delay After Phase Off (ms)	/Comms /OutForm /TX_TimeoutAlone	5177	1	0 = Disabled 50 = 50 60 = 60 70 = 70 80 = 80 90 = 90 100 = 100 110 = 110 120 = 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
DATA FORMAT / CUSTOM CODE IDENTIFIER STRINGS				
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

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Code GS1-128 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
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
Code EAN 13 Addon 2 Identifier String	/Comms /OutForm/codIDStr /codEAN13ADD2	419	3	Length: 1 to 32
Code EAN 8 Addon 2 Identifier String	/Comms /OutForm/codIDStr /codEAN8ADD2	420	3	Length: 1 to 32
Code UPC A Addon 2 Identifier String	/Comms /OutForm/codIDStr /codUPCAADD2	421	3	Length: 1 to 32
Code UPC E Addon 2 Identifier String	/Comms /OutForm/codIDStr /codUPCEADD2	422	3	Length: 1 to 32
Code EAN 13 Addon 5 Identifier String	/Comms /OutForm/codIDStr /codEAN13ADD5	423	3	Length: 1 to 32
Code EAN 8 Addon 5 Identifier String	/Comms /OutForm/codIDStr /codEAN8ADD5	424	3	Length: 1 to 32
Code UPC A Addon 5 Identifier String	/Comms /OutForm/codIDStr /codUPCAADD5	425	3	Length: 1 to 32
Code UPC E Addon 5 Identifier String	/Comms /OutForm/codIDStr /codUPCEADD5	426	3	Length: 1 to 32
Code 39 Full ASCII Identifier String	/Comms /OutForm/codIDStr /cod39FA	427	3	Length: 1 to 32
Code ISBT 128 Identifier String	/Comms /OutForm/codIDStr /cod128ISBT	428	3	Length: 1 to 32

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
ABC Codabar Identifier String	/Comms /OutForm/codIDStr /ABCcodBAR	429	3	Length: 1 to 32
Pharmacode Identifier String	/Comms /OutForm/codIDStr /PHARMA	431	3	Length: 1 to 32
Plessey Identifier String	/Comms /OutForm/codIDStr /Plessey	432	3	Length: 1 to 32
GS1 DataBar Identifier String	/Comms /OutForm/codIDStr /GS1DataBar	416	3	Length: 1 to 32
GS1 DataBar Limited Identifier String	/Comms /OutForm/codIDStr /GS1DataBarLimited	444	3	Length: 1 to 32
GS1 DataBar Exp. Identifier String	/Comms /OutForm/codIDStr /GS1DataBar Expanded	445	3	Length: 1 to 32
DATA FORMAT / STANDARD PARAMETERS				
Header String	/Comms /OutForm/Standard /Header	6	3	Length: 0 to 128
Code Position Tx	/Comms /OutForm/Standard /CodePosition	547	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
Motor OFF Message	/Comms /OutForm/Standard /MotorOFFFail	548	1	0 = Disable 1 = Enable
Motor OFF String	/Comms /OutForm/Standard /MotorOFFFailMsg	549	3	Length: 0 to 128
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

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PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Info Field Separators	/Comms /OutForm/Standard /InfoFieldSeparator	83	3	Length: 0 to 128
Code Field Separators	/Comms /OutForm/Standard /BarCodeField Separator	5249	3	Length: 0 to 128
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 60
Data Justification	/Comms /OutForm/Standard /FillDir	47	1	0 = Left 1 = Right
Fill Character	/Comms /OutForm/Standard /FillCh	48	3	Length: 1
DATA FORMAT / MULTIDATA				
Address TX	/Comms /OutForm/Multidata /Address	544	1	0 = Disable 1 = Enable
Header	/Comms /OutForm/Multidata /AddrHeader	545	3	Length: 0 to 32
Separator	/Comms /OutForm/Multidata /AddrSeparator	546	3	Length: 0 to 32
CRISPLANT PARAMETERS				
Crisplant Manufacturer ID	/Comms /CrispPar /ID	61	2	Length: 1
Heartbeat Message	/Comms /CrispPar /HBEnable	67	1	0 = Disable 1 = Enable
Heartbeat Message Timing (ms)	/Comms /CrispPar /HBTime	68	0	Range: 40 to 60000
Type of Crisplant Protocol	/Comms /CrispPar /Protocol	69	1	0 = CSC 1 = CMC
Reading Mask Tx	/Comms /CrispPar /ReadMask	5314	1	0 = Disable 1 = Enable
Code Type Tx	/Comms /CrispPar /CodeType	5315	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
MAIN SERIAL PORT				
Data TX	/Comms /SerMain /SerMain	510	1	0 = Disable 1 = Enable
Heartbeat	/Comms /SerMain /HeartbeatEnM	5069	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned
MAIN SERIAL PORT / HEARTBEAT				
Timeout (s)	/Comms /SerMain/HeartbeatM /TimeOutM	5079	0	Range: 1 to 3600
Heartbeat Header String	/Comms /SerMain/HeartbeatM /HeaderM	5075	3	Length: 0 to 128
Heartbeat Fields Separator String	/Comms /SerMain/HeartbeatM /SeparatorM	5076	3	Length: 0 to 128
Counter Module (Maximum Counter Value)	/Comms /SerMain/HeartbeatM /CounterModM	5071	1	0 = Disable 1 = 10 2 = 100 3 = 1000 4 = 10000 5 = Custom
Custom Counter Module	/Comms /SerMain/HeartbeatM /CustomCounterModM	5073	0	Length: 2 to 10000
Counter Starting Value	/Comms /SerMain//HeartbeatM /CounterStartM	5072	0	Length: 0 to 9999
Counter Direction	/Comms /SerMain/HeartbeatM /CounterDirectionM	5070	1	0 = Up 1 = Down
System Diagnostics	/Comms /SerMain//HeartbeatM /SysDiagM	5077	1	0 = Disable 1 = Enable
Network Diagnostics	/Comms /SerMain/HeartbeatM /DevDiagM	5074	1	0 = Disable 1 = Enable
Heartbeat Terminator String	/Comms /SerMain/HeartbeatM /TerminatorM	5078	3	Length: 0 to 128
MAIN SERIAL PORT / LINE PARAMETERS				
Main Port Communication mode	/Comms /SerMain/Line /Mode	33	1	0 = Standard 1 = MUX 32 Slave 2 = Siemens 3964 3 = Siemens RK512
Main Port Electrical Interface	/Comms /SerMain/Line /MainHW	10	1	0 = RS232 1 = RS485 Full Duplex

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
MUX 32 protocol address	/Comms /SerMain/Line /Addr	58	0	Range: 0 to 31
Handshake (RS232)	/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 (Mux32 Slave)	/Comms /SerMain/Line /StdBaud	49	1	8 = 1200 1 = 2400 2 = 4800 3 = 9600 4 = 19200 5 = 38400 6 = 57600 7 = 115200
Baud Rate (NOT Mux32 Slave)	/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	535	1	0 = Disable 1 = Enable
Priority (Siemens 3964)	/Comms /SerMain/Line /S3964Prio	536	1	0 = Low 1 = High
Header n. 5 (Siemens 3964)	/Comms /SerMain/Line /SRKHead5	540	3	Length: 1
Header n. 6 (Siemens 3964)	/Comms /SerMain/Line /SRKHead6	541	3	Length: 1
Header n. 9 (Siemens 3964)	/Comms /SerMain/Line /SRKHead9	542	3	Length: 1
Header n. 10 (Siemens 3964)	/Comms /SerMain/Line /SRKHead10	539	3	Length: 1
Filler Character (Siemens 3964)	/Comms /SerMain/Line /SRKFillChar	537	3	Length: 1

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Filler Position (Siemens 3964)	/Comms /SerMain/Line /SRKFillerPos	538	1	0 = Before Data 1 = After Data
AUXILIARY SERIAL PORT				
Search For TCNM-ACBB Backup Module 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 /HeartbeatEnA	5068	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned
Pass Through	/Comms /SerAux /PTSource	512	1	0 = Disable 1 = Enable
AUXILIARY SERIAL PORT / HEARTBEAT				
Timeout (s)	/Comms /SerAux/HeartbeatA /TimeOutA	5067	0	Range: 1 to 3600
Heartbeat Header String	/Comms /SerAux/HeartbeatA /HeaderA	5063	3	Length: 0 to 128
Heartbeat Fields Separator String	/Comms /SerAux/HeartbeatA /SeparatorA	5064	3	Length: 0 to 128
Counter Module (Maximum Counter Value)	/Comms /SerAux/HeartbeatA /CounterModA	5059	1	0 = Disable 1 = 10 2 = 100 3 = 1000 4 = 10000 5 = Custom
Custom Counter Module	/Comms /SerAux/HeartbeatA /CustomCounterModA	5061	0	Length: 2 to 10000
Counter Starting Value	/Comms /SerAux/HeartbeatA /CounterStartA	5060	0	Length: 0 to 9999
Counter Direction	/Comms /SerAux/HeartbeatA /CounterDirectionA	5058	1	0 = Up 1 = Down
System Diagnostics	/Comms /SerAux/HeartbeatA /SysDiagA	5065	1	0 = Disable 1 = Enable
Network Diagnostics	/Comms /SerAux/HeartbeatA /DevDiagA	5062	1	0 = Disable 1 = Enable
Heartbeat Terminator String	/Comms /SerAux/HeartbeatA /TerminatorA	5066	3	Length: 0 to 128

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
AUXILIARY SERIAL PORT / PASS THROUGH OPTIONS				
String Max Length	/Comms /SerAux/PTOpt /PTMaxDim	513	0	Range: 4 to 4096
Termination string	/Comms /SerAux/PTOpt /PTTerm	514	3	Length: 1 to 32
Pass Through on ID-NET	/Comms /SerAux/PTOpt /PTSourceNet	5248	1	0 = Disable 1 = Enable
AUXILIARY SERIAL PORT / LINE 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
TCNM-ACBB5 GATEWAY				
Type	/Comms /CBXModuleType	5303	1	0 = None 1 = Profibus 2 = DeviceNet 3 = Ethernet/IP (Ethernet/IP - TCP/IP) 4 = CC-Link 5 = CANopen 6 = Profinet (Profinet IO – TCP/IP) 8 = Modbus TCP (Modbus TCP - TCP/IP) 9 = Ethernet TCP/IP
ETHERNET LINE PARAMETERS				
MAC Address	/Comms /CBXGateway /Ethernet /MAC	92	2	-

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Program Name	/Comms /CBXGateway /Ethernet /EthPrgName	5406	2	-
IP Addressing	/Comms /CBXGateway /Ethernet/ IPAddressing	95	1	0 = Static Assignment 1 = DHCP 2 = Remote Assignment
IP Address	/Comms /CBXGateway /Ethernet /IP_address	96	2	Max Length: 16
IP Netmask	/Comms /CBXGateway /Ethernet /IP_netmask	97	2	Max Length: 16
IP Gateway	/Comms /CBXGateway /Ethernet /IP_gateway	98	2	Max Length: 16
IP Address (TCP/IP Module)	/Comms /CBXGateway /Ethernet /IP_addressBm200	5551	2	Max Length: 16
IP Netmask (TCP/IP Module)	/Comms /CBXGateway /Ethernet /IP_netmaskBm200	5552	2	Max Length: 16
IP Gateway (TCP/IP Module)	/Comms /CBXGateway /Ethernet /IP_gatewayBm200	5553	2	Max Length: 16
Station Name	/Comms /CBXGateway /Ethernet /StationName	5425	2	Max Length: 240
FIELDBUS OPTIONS				
Status	/Comms /CBXGateway /FieldbusOptions /Status	5412	1	0 = Disable 1 = Enable
Data Tx	/Comms /CBXGateway /FieldbusOptions /FieldbusDataTx	5287	1	0 = Disable 1 = Enable
Heartbeat	/Comms /CBXGateway /FieldbusOptions /HeartbeatEnFieldbus	5288	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
FIELDBUS / HEARTBEAT				
Timeout (s)	/Comms /CBXGateway /FieldbusOptions /HeartbeatFieldbus /TimeOutFieldbus	5297	0	Range: 1 to 3600
Heartbeat Header String	/Comms /CBXGateway /FieldbusOptions /HeartbeatFieldbus /HeaderFieldbus	5294	3	Length: 1 to 128
Heartbeat Fields Separator	/Comms /CBXGateway /FieldbusOptions /HeartbeatFieldbus /SeparatorFieldbus	5295	3	Length: 1 to 128
Counter Module	/Comms /CBXGateway /FieldbusOptions /HeartbeatFieldbus /CounterModFieldbus	5290	1	0 = Disable 1 = 10 2 = 100 3 = 1000 4 = 10000 5 = Custom
Custom Counter Module	/Comms /CBXGateway /FieldbusOptions /HeartbeatFieldbus /CustomCounterMod Fieldbus	5292	0	Range: 2 to 10000
Counter Starting Value	/Comms /CBXGateway /FieldbusOptions /HeartbeatFieldbus /CounterStartFieldbus	5291	0	Range: 0 to 9999
Counter Direction	/Comms /CBXGateway /FieldbusOptions /HeartbeatFieldbus /CounterDirection Fieldbus	5289	1	0 = Up 1 = Down
System Diagnostics	/Comms /CBXGateway /FieldbusOptions /HeartbeatFieldbus /SysDiagFieldbus	5296	1	0 = Disable 1 = Enable
Network Diagnostics	/Comms /CBXGateway /FieldbusOptions /HeartbeatFieldbus /DevDiagFieldbus	5293	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Heartbeat Terminator String	/Comms /CBXGateway /FieldbusOptions /HeartbeatFieldbus /TerminatorFieldbus	5304	3	Length: 1 to 128
FIELDBUS / BUS COMMUNICATION				
Baud Rate (CC-LINK)	/Comms /CBXGateway /FieldbusOptions /BusData /CCLinkBaudRate	5426	1	0 = 156 Kbps 1 = 625 Kbps 2 = 2.5 Mbps 3 = 5 Mbps 4 = 10 Mbps
Version	/Comms /CBXGateway /FieldbusOptions /BusData /FieldbusVersion	5413	0	Range: 1 to 2
Master Input Area Size (Profibus)	/Comms /CBXGateway /FieldbusOptions /BusData /ProfibusInputSize	270	0	Range: 8 to 144
Master Input Area Size (DeviceNet)	/Comms /CBXGateway /FieldbusOptions /BusData /DeviceNetInputSize	5278	0	Range: 8 to 144
Master Input Area Size (Ethernet/IP)	/Comms /CBXGateway /FieldbusOptions /BusData /EthernetIPInputSize	5282	0	Range: 8 to 144
Master Input Area Size (CC-LINK)	/Comms /CBXGateway /FieldbusOptions /BusData /CCLinkInputSize	5355	0	Range: 2 to 126
Master Input Area Size (CANOpen)	/Comms /CBXGateway /FieldbusOptions /BusData /CANOpenInputSize	5322	0	Range: 8 to 144
Master Input Area Size (Profinet)	/Comms /CBXGateway /FieldbusOptions /BusData /ProfinetInputSize	5325	0	Range: 8 to 56
Master Input Area Size (Modbus)	/Comms /CBXGateway /FieldbusOptions /BusData /ModbusRtuInputSize	5372	0	Range: 8 to 144

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Master Input Area Size (Modbus TCP)	/Comms /CBXGateway /FieldbusOptions /BusData /ModbusTcpInputSize	5373	0	Range: 8 to 144
Master Output Area Size (Profibus)	/Comms /CBXGateway /FieldbusOptions /BusData /ProfibusOutputSize	271	0	Range: 8 to 144
Master Output Area Size (DeviceNet)	/Comms /CBXGateway /FieldbusOptions /BusData /DeviceNetOutputSize	5280	0	Range: 8 to 144
Master Output Area Size (Ethernet/IP)	/Comms /CBXGateway /FieldbusOptions /BusData /EthernetIPOutputSize	5283	0	Range: 8 to 144
Master Output Area Size (CC-LINK)	/Comms /CBXGateway /FieldbusOptions /BusData /CCLinkOutputSize	5356	0	Range: 2 to 128
Master Output Area Size (CANOpen)	/Comms /CBXGateway /FieldbusOptions /BusData /CANOpenOutputSize	5321	0	Range: 8 to 144
Master Output Area Size (Profinet)	/Comms /CBXGateway /FieldbusOptions /BusData /ProfinetOutputSize	5326	0	Range: 8 to 56
Master Output Area Size (Modbus)	/Comms /CBXGateway /FieldbusOptions /BusData /ModbusRtuOutputSize	5374	0	Range: 8 to 144
Master Output Area Size (Modbus TCP)	/Comms /CBXGateway /FieldbusOptions /BusData /ModbusTcpOutputSize	5375	0	Range: 8 to 144
Node Address (Profibus)	/Comms /CBXGateway /FieldbusOptions /BusData /ProfibusNodeAddr	268	0	Range: 0 to 126

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Node address (MAC ID) (DeviceNet)	/Comms /CBXGateway /FieldbusOptions /BusData /DeviceNetNodeAddr	5279	0	Range: 0 to 63
Node address (CC-LINK)	/Comms /CBXGateway /FieldbusOptions /BusData /CCLinkNodeAddr	5319	0	Range: 1 to 64
Node address (CANOpen)	/Comms /CBXGateway /FieldbusOptions /BusData /CANOpenNodeAddr	5323	0	Range: 1 to 127
Node address (Modbus)	/Comms /CBXGateway /FieldbusOptions /BusData /ModbusRtuNodeAddr	5427	0	Range: 1 to 127
Data Flow Control	/Comms /CBXGateway /FieldbusOptions /BusData /FlowControl	269	1	0 = Disable 2 = DAD Driver
Data Consistency	/Comms /CBXGateway /FieldbusOptions /BusData /ConsistencyAbil	290	1	0 = Disable 1 = Enable
Process Active Timeout ms	/Comms /CBXGateway /FieldbusOptions /BusData /ProcessActiveTimeout	5421	0	Range: 0 to 65535
Mode	/Comms /CBXGateway /FieldbusOptions /BusData /Mode	5422	1	0 = RTU 1 = ASCII
Connection Timeout sec	/Comms /CBXGateway /FieldbusOptions /BusData /ConnectionTimeout	5423	0	Range: 0 to 65535

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
FIELDBUS / BUS COMMUNICATION / COMMUNICATION SETTING				
Baud Rate	/Comms /CBXGateway /FieldbusOptions /BusData/Line /Baud	5418	1	0 = 1200 4 = 2400 8 = 4800 12 = 9600 16 = 19200 24 = 38400 28 = 57600 32 = 115200
Parity	/Comms /CBXGateway /FieldbusOptions /BusData/Line /Par	5419	1	0 = Even 1 = Odd 2 = None
Stop Bits	/Comms /CBXGateway /FieldbusOptions /BusData/Line /Stopbit	5420	1	1 = 1 2 = 2
FIELDBUS / DIGITAL I/O CONDITIONING / DIGITAL INPUT LINES				
Input 1 Echo	/Comms /CBXGateway /FieldbusOptions /IO/In /Input1	5298	1	0 = Disable 1 = Enable
Input 2 Echo	/Comms /CBXGateway /FieldbusOptions /IO/In /Input2	5299	1	0 = Disable 1 = Enable
Phase Echo	/Comms /CBXGateway /FieldbusOptions /IO/In /PhaseEcho	5300	1	0 = Disable 1 = Enable
FIELDBUS / DIGITAL I/O CONDITIONING / DIGITAL OUTPUT LINES				
Output 1	/Comms /CBXGateway /FieldbusOptions /IO/Out /Output1	5301	1	0 = Disable 1 = Enable
Output 2	/Comms /CBXGateway /FieldbusOptions /IO/Out /Output2	5302	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
TCP/IP SERVICES / USERSOCKET#1				
Status	/Comms /CBXGateway /Services /UserSocket1 /Status1	134	1	0 = Disable 1 = Enable
Data Tx	/Comms /CBXGateway /Services /UserSocket1 /Sock1	5251	1	0 = Disable 1 = Enable
Heartbeat	/Comms /CBXGateway /Services /UserSocket1 /HeartbeatEnSocket1	5260	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned
Type	/Comms /CBXGateway /Services /UserSocket1 /Type	135	1	0 = Server 1 = Client
Server Address	/Comms /CBXGateway /Services /UserSocket1 /Server_address	136	2	Max Length: 256
Protocol	/Comms /CBXGateway /Services /UserSocket1 /Protocol	137	1	0 = TCP 1 = UDP
Port	/Comms /CBXGateway /Services /UserSocket1 /Port	138	0	Range: 0 to 64538
Use As WebSentinel Client	/Comms /CBXGateway /Services /UserSocket1 /EnableSentinel1	5254	1	0 = Disable 1 = Enable
Partial Read is treated as	/Comms /CBXGateway /Services /UserSocket1 /SentinelPartialReadAs	5328	1	0 = No Read 1 = Good Read 3 = Partial Read"
Master Diagnostic Check Period (secs)	/Comms /CBXGateway /Services /UserSocket1 /InputTimeOut	5259	0	Range: 3 to 10

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
TCP/IP SERVICES / USERSOCKET#1 / HEARTBEAT				
Timeout (s)	/Comms /CBXGateway /Services /UserSocket1 /HeartbeatSocket /TimeOutSocket1	5261	0	Range: 0 to 3600
Heartbeat Header String	/Comms /CBXGateway /Services /UserSocket1 /HeartbeatSocket /HeaderSocket1	5262	3	Length: 1 to 128
Heartbeat Fields Separator	/Comms /CBXGateway /Services /UserSocket1 /HeartbeatSocket /SeparatorSocket1	5263	3	Length: 1 to 128
Counter Module	/Comms /CBXGateway /Services /UserSocket1 /HeartbeatSocket /CounterModSocket1	5264	1	0 = Disable 1 = 10 2 = 100 3 = 1000 4 = 10000 5 = Custom
Custom Counter Module	/Comms /CBXGateway /Services /UserSocket1 /HeartbeatSocket /CustomCounterMod Socket1	5265	0	Range: 2 to 10000
Counter Starting Value	/Comms /CBXGateway /Services /UserSocket1 /HeartbeatSocket /CounterStartSocket1	5266	0	Range: 0 to 9999
Counter Direction	/Comms /CBXGateway /Services /UserSocket1 /HeartbeatSocket /CounterDirection Socket1	5267	1	0 = Up 1 = Down
System Diagnostics	/Comms /CBXGateway /Services /UserSocket1 /HeartbeatSocket /SysDiagSocket1	5268	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Network Diagnostics	/Comms /CBXGateway /Services /UserSocket1 /HeartbeatSocket /DevDiagSocket1	5269	1	0 = Disable 1 = Enable
Heartbeat Terminator String	/Comms /CBXGateway /Services /UserSocket1 /HeartbeatSocket /TerminatorSocket1	5270	3	Length: 1 to 128
TCP/IP SERVICES / USERSOCKET#2				
Status	/Comms /CBXGateway /Services /UserSocket2 /Status2	5329	1	0 = Disable 1 = Enable
Data Tx	/Comms /CBXGateway /Services /UserSocket2 /Sock2	5330	1	0 = Disable 1 = Enable
Heartbeat	/Comms /CBXGateway /Services /UserSocket2 /HeartbeatEnSocket2	5331	1	0 = Disable 1 = Enable Unconditioned 2 = Enable Conditioned
Type	/Comms /CBXGateway /Services /UserSocket2 /Type2	5342	1	0 = Server 1 = Client
Server Address	/Comms /CBXGateway /Services /UserSocket2 /Server_address2	5343	2	Max Length: 256
Protocol	/Comms /CBXGateway /Services /UserSocket2 /Protocol2	5344	1	0 = TCP 1 = UDP
Port	/Comms /CBXGateway /Services /UserSocket2 /Port2	5345	0	Range: 0 to 64538

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
TCP/IP SERVICES / USERSOCKET#2 / HEARTBEAT				
Timeout (s)	/Comms /CBXGateway /Services /UserSocket2 /HeartbeatSocket /TimeOutSocket2	5332	0	Range: 0 to 3600
Heartbeat Header String	/Comms /CBXGateway /Services /UserSocket2 /HeartbeatSocket /HeaderSocket2	5333	3	Length: 1 to 128
Heartbeat Fields Separator	/Comms /CBXGateway /Services /UserSocket2 /HeartbeatSocket /SeparatorSocket2	5334	3	Length: 1 to 128
Counter Module	/Comms /CBXGateway /Services /UserSocket2 /HeartbeatSocket /CounterModSocket2	5335	1	0 = Disable 1 = 10 2 = 100 3 = 1000 4 = 10000 5 = Custom
Custom Counter Module	/Comms /CBXGateway /Services /UserSocket2 /HeartbeatSocket /CustomCounterMod Socket2	5336	0	Range: 2 to 10000
Counter Starting Value	/Comms /CBXGateway /Services /UserSocket2 /HeartbeatSocket /CounterStartSocket2	5337	0	Range: 0 to 9999
Counter Direction	/Comms /CBXGateway /Services /UserSocket2 /HeartbeatSocket /CounterDirection Socket2	5338	1	0 = Up 1 = Down
System Diagnostics	/Comms /CBXGateway /Services /UserSocket2 /HeartbeatSocket /SysDiagSocket2	5339	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Network Diagnostics	/Comms /CBXGateway /Services /UserSocket2 /HeartbeatSocket /DevDiagSocket2	5340	1	0 = Disable 1 = Enable
Heartbeat Terminator String	/Comms /CBXGateway /Services /UserSocket2 /HeartbeatSocket /TerminatorSocket2	5341	3	Length: 1 to 128
TCP/IP SERVICES / MODBUS TCP				
Status	/Comms /CBXGateway /Services /Modbus /Status	5628	1	0 = Disable 1 = Enable
Data Tx	/Comms /CBXGateway /Services /Modbus /Modbus	5627	1	0 = Disable 1 = Enable
Type	/Comms /CBXGateway /Services /Modbus /Type3	5624	1	0=Server 1=Client
Server Address	/Comms /CBXGateway /Services /Modbus /Server_address	126	2	Max Length: 256
Start Register Number	/Comms /CBXGateway /Services /Modbus /Start_reg	5629	0	Range: 0 to 256
Number Of Registers (valid when Type = Client)	/Comms /CBXGateway /Services /Modbus /Num_reg	5630	0	Range: 1 to 256
Number Of Registers (valid when Type = Server)	/Comms /CBXGateway /Services /Modbus /MaxNumReg	5620	0	Range: 1 to 256

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
TCP/IP SERVICES / ETHERNET/IP				
Status	/Comms /CBXGateway /Services /EthernetIP /Status	5609	1	0 = Disable 1 = Enable
FIELDBUS TCP/IP / DIGITAL INPUT LINES				
Input#1 Echo (TCP/IP Module)	/Comms /CBXGateway /IOETHIP/In/Input1ethip	5590	1	0 = Disable 1 = Enable
Input#2 Echo (TCP/IP Module)	/Comms /CBXGateway /IOETHIP/In/Input2ethip	5591	1	0 = Disable 1 = Enable
Phase Echo (TCP/IP Module)	/Comms /CBXGateway /IOETHIP/In/ PhaseEchoethip	5592	1	0 = Disable 1 = Enable
FIELDBUS / DIGITAL OUTPUTS CONDITIONING				
Output#1 (TCP/IP Module)	/Comms / CBXGateway / IOETHIP/Out/Output1ethip	5593	1	0 = Disable 1 = Enable
Output#2 (TCP/IP Module)	/Comms / CBXGateway / IOETHI /Out/Output2ethip	5694	1	0 = Disable 1 = Enable

4.7 DIGITAL I/O SETTING

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
BUILT-IN DIGITAL INPUT LINES				
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
Debounce Filter (ms)	/IO /In/InputTimeFilter	5035	0	Range: 5 to 1000
BUILT-IN DIGITAL OUTPUT LINES / OUTPUT 1				
Use	/IO /Out/Out0 /Use_0	5316	1	1 = Local 2 = External Fieldbus
Line State	/IO /Out/Out0 /Idle	19	1	0 = Normally Open 1 = Normally Closed

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
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 11 = Ready 12 = Quality Counter < Threshold
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 11 = Ready 12 = Quality Counter < Threshold
Deactivation Event	/IO /Out/Out0 /Deactive	21	1	0 = None 7 = Timeout 5 = Phase On 6 = Phase Off 8 = Quality Counter >= Threshold
Alternative Deactivation Event	/IO /Out/Out0 /Deactive1	516	1	0 = None 5 = Phase On 6 = Phase Off 8 = Quality Counter >= Threshold
Deactivation Timeout (ms)	/IO /Out/Out0 /Timeout	22	0	Range: 40 to 15000
Activate On Any Diagnostics Error	/IO /Out/Out0 /ActiveDiagnoErr	551	1	0 = Disable 1 = Enable
Deactivate When All Diagnostic Errors Recovered	/IO /Out/Out0 /DeactiveDiagnoNoErr	552	1	0 = Disable 1 = Enable
Event Counter	/IO /Out/Out0 /EventCounter	553	0	Range: 1 to 70000
Event Counter Mode	/IO /Out/Out0 /EventCounterMode	554	1	0 = Consecutive 1 = Not Consecutive

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Quality Counter Threshold	/IO /Out/Out0 /QualityCounter Threshold	5273	0	Range: 1 to 100
BUILT-IN DIGITAL OUTPUT LINES / OUTPUT 2				
Use	/IO /Out/Out1 /Use_1	5317	1	1 = Local 2 = External Fieldbus
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 11 = Ready 12 = Quality Counter < Threshold
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 11 = Ready 12 = Quality Counter < Threshold
Deactivation Event	/IO /Out/Out1 /Deactive	25	1	0 = None 7 = Timeout 5 = Phase On 6 = Phase Off 8 = Quality Counter >= Threshold
Alternative Deactivation Event	/IO /Out/Out1 /Deactive1	518	1	0 = None 5 = Phase On 6 = Phase Off 8 = Quality Counter >= Threshold
Deactivation Timeout (ms)	/IO /Out/Out1 /Timeout	26	0	Range: 40 to 15000
Activate On Any Diagnostics Error	/IO /Out/Out1 /ActiveDiagnoErr	555	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Deactivate When All Diagnostic Errors Recovered	/IO /Out/Out1 /DeactiveDiagnoNoErr	556	1	0 = Disable 1 = Enable
Event Counter	/IO /Out/Out1 /EventCounter1	557	0	Range: 1 to 70000
Event Counter Mode	/IO /Out/Out1 /EventCounterMode1	558	1	0 = Consecutive 1 = Not Consecutive
Quality Counter Threshold	/IO /Out/Out1 /QualityCounter Threshold	5274	0	Range: 1 to 100

4.8 SYSTEM INFORMATION SECTION

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
DEVICE INFORMATION				
Detected Model (READ ONLY)	/SystemInfo /Model /AutoDetected	5169	2	Max Length: 32
Serial Number (READ ONLY)	/SystemInfo /Model /SerialNumber	5172	2	Max Length: 32
Package Name (READ ONLY)	/SystemInfo /DevPckg /PckgName	5166	2	Max Length: 128
Device Program Name (READ ONLY)	/SystemInfo /Components /DECODER /PrgName	5150	2	Max Length: 32

See paragraph 3.4 on how to access all the above mentioned parameters

4.9 LEDS AND KEYPAD

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
LEDS AND KEYPAD				
Key Functionality	/FunctionKey /keyAccess	5111	1	1 = Unlocked 0 = Partially Locked 2 = Locked
Test Mode Data TX	/FunctionKey /testModeTx	5112	1	0 = Disable 1 = Main, 2 = Aux, 3 = Main & Aux

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Test Mode Exit Menu Timeout	/FunctionKey /testModeExitMenu	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	/FunctionKey /autlExitMenu	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	/FunctionKey /readLedReset	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

4.10 DISPLAY (TCNM-SP MODELS)

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
DISPLAY				
Display Language	/Display /Displaylang	5199	1	0 = English (United States) 1 = French (France) 2 = German (Germany) 3 = Italian (Italy) 4 = Japanese (Japan)
Network Status Monitor	/Display /NetworkDisplay	5200	1	0 = Disable 1 = Enable
Toggle Network Status Monitor With Last Data Read	/Display /NetDataDisplay	-	1	0 = Disable 1 = Enable
Contrast (Local Device)	/Display /ContrastVal	5201	0	Range: 5 to 45

4.11 DIAGNOSTICS

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
DIAGNOSTICS				
Enable	/Diagno /Enable	5100	1	0 = Disable 1 = Enable
Conveyor Info	/Diagno /ConveyorInfo	5097	1	0 = Not Available 1 = Available
Conveyor Info Provider	/Diagno /ConveyorInfoProvider	5098	1	1 = Input 1 2 = Input 2
Refresh Time	/Diagno /RefreshT	5110	1	1 = 1 sec 2 = 2 sec 5 = 5 sec 10 = 10 sec 30 = 30 sec 60 = 1 min
Slave Diagnostics	/Diagno /NetDiag	37	1	0 = Disable 1 = Enable
Local Network Failure	/Diagno /LocalNetBoard	5105	1	0 = Disable 1 = Enable
Led Indication on Network Slave Failure	/Diagno /MasterLedAct	5179	1	0 = Disable 1 = Enable
Start/Stop Input Failure	/Diagno /InFail	5103	1	0 = Disable 1 = Enable
No Phase Timeout	/Diagno /NoPhaseTO	5107	1	0 = Disable 1 = 1 sec 2 = 5 sec 3 = 10 sec 4 = 20 sec 5 = 1 min 6 = 5 min 7 = 10 min 8 = 20 min
Presence Sensor Stuck Timeout	/Diagno /PSStuck	5109	1	0 = Disable 1 = 1 sec 2 = 2 sec 5 = 5 sec 10 = 10 sec 30 = 30 sec 60 = 1 min
Motor Failure	/Diagno /MotorFail	5106	1	0 = Disable 1 = Enable
Laser Failure	/Diagno /LasFail	5104	1	0 = Disable 1 = Enable
Oscillating Mirror Failure	/Diagno /OmFail	5108	1	0 = Disable 1 = Enable
Oscillating Mirror Data Consistency Error	/Diagno /OmDataConsistency	5414	1	0 = Disable 1 = Enable
Focus Displacement	/Diagno /FocusDis	5206	1	0 = Disable 1 = Enable
DIGITIZER: Motor Failure	/Diagno /DgtzMotFail	5207	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
DIGITIZER: Motor Life End	/Diagno /DgtzMotEnd	5208	1	0 = Disable 1 = Enable
DIGITIZER: Laser Failure	/Diagno /DgtzLasFail	5209	1	0 = Disable 1 = Enable
DIGITIZER: Laser Life End	/Diagno /DgtzLasEnd	5210	1	0 = Disable 1 = Enable
DIGITIZER: Data Consistency Error	/Diagno /DgtzCrcErr	5211	1	0 = Disable 1 = Enable
DIGITIZER: Data Write Error	/Diagno /DgtzWriteErr	5212	1	0 = Disable 1 = Enable
DIGITIZER: Communication Error	/Diagno /DgtzCommErr	5213	1	0 = Disable 1 = Enable
DIGITIZER: Reset	/Diagno /DgtzReset	5214	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Motor Failure	/Diagno /OmMotFail	5215	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Motor Life End	/Diagno /OmMotEnd	5216	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Data Consistency Error	/Diagno /OmCrcErr	5217	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Data Write Error	/Diagno /OmWriteErr	5218	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Communication Error	/Diagno /OmCommErr	5219	1	0 = Disable 1 = Enable
OSCILLATING MIRROR: Reset	/Diagno /OmReset	5220	1	0 = Disable 1 = Enable
Reading Conditions Controller: Communication Error	/Diagno /DacCommErr	5221	1	0 = Disable 1 = Enable
Focus Controller: Communication Error	/Diagno /DpotzCommErr	5222	1	0 = Disable 1 = Enable
Temperature Sensor: Communication Error	/Diagno /TempsCommErr	5223	1	0 = Disable 1 = Enable
Laser Temperature Sensor: Communication Error	/Diagno /TempsANCommErr	5536	1	0 = Disable 1 = Enable
Temperature Sensors Mismatch Error	/Diagno /TempsMismatchErr	5543	1	0 = Disable 1 = Enable
Low Temperature Alarm	/Diagno /LowTempsAl	5538	1	0 = Disable 1 = Enable
High Temperature Warning	/Diagno /HighTempsWarn	5539	1	0 = Disable 1 = Enable
Low Power Supply Alarm	/Diagno /LowPowerAl	5540	1	0 = Disable 1 = Enable
FieldBus Failure	/Diagno /FBusFailure	5305	1	0 = Disable 1 = Enable

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
FieldBus Mismatch	/Diagno /FBusMisMatch	5306	1	0 = Disable 1 = Enable
FieldBus Configuration Error	/Diagno /FBusConfErr	5400	1	0 = Disable 1 = Enable
FieldBus DHCP Problem	/Diagno /FBusDhcpProblem	5401	1	0 = Disable 1 = Enable
Wrong TCNM-ACBB Backup Module Rotary Switch Selection	/Diagno /WrongRSPosition	5307	1	0 = Disable 1 = Enable
TCNM-ACBB Backup Module Communication Failure	/Diagno /CBXCommFail	5308	1	0 = Disable 1 = Enable
ACTIONS				
TX Mode	/Diagno /Actions /TxMode	5096	1	0 = On Timeout 1 = With Code"
TX Refresh	/Diagno /Actions /AsyncTO	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	/Diagno /Actions/SyncOpt	5095	1	0 = Append to Code 1 = Replace Code 2 = Insert before the Code
Aux	/Diagno /Actions /SerAuxTx	5093	1	0 = Disable 1 = Enable
Main	/Diagno /Actions /SerMainTx	5094	1	0 = Disable 1 = Enable
Fieldbus	/Diagno /Actions /DiagnoFieldbus	5358	1	0 = Disable 1 = Enable
UserSocket#1	/Diagno /Actions /DiagnoUserSocket1	5354	1	0 = Disable 1 = Enable
UserSocket#2	/Diagno /Actions /DiagnoUserSocket2	5357	1	0 = Disable 1 = Enable
FORMAT				
Header String	/Diagno /Format /Header	5101	3	Length: 1 to 128

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Terminator String	/Diagno /Format /Terminator	5102	3	Length: 1 to 128
No Failure String	/Diagno /Format /NoFailureString	-	3	Length: 0 to 32
Maximum Diagnostic Message length (number of chars)	/Diagno /Format /MaxDiagMsgLen	-	1	0 = Variable 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = 7 8 = 8 9 = 9 10 = 10
Node Identification	/Diagno /Format /NodeIdentification	5253	3	Length: 1 to 128
Diagnostic Message Format	/Diagno /Format /UseCabledMsg	5080	1	0 = Internal Numeric Messages 1 = User Defined Messages
FORMAT / USER DEFINED MESSAGES				
Motor Failure	/Diagno /Format/UserDefMsg /MotorFailMsg	5083	3	Length: 1 to 128
Laser Failure	/Diagno /Format/UserDefMsg /LaserFailMsg	5081	3	Length: 1 to 128
Oscillating Mirror Failure	/Diagno /Format/UserDefMsg /OMFailMsg	5085	3	Length: 1 to 128
Oscillating Mirror Data Consistency Error	/Diagno /Format/UserDefMsg /OmDataConsistency Msg	5415	3	Length: 1 to 128
Start/Stop Input Failure	/Diagno /Format/UserDefMsg /StartStopInputFailure Msg	5091	3	Length: 1 to 128
No Phase Warning	/Diagno /Format/UserDefMsg /PSWarnigMsg	5087	3	Length: 1 to 128
Presence Sensor Stuck	/Diagno /Format/UserDefMsg /PSStuckTimeoutMsg	5086	3	Length: 1 to 128
Local Net Failure	/Diagno /Format/UserDefMsg /LocalNetErrorMsg	5082	3	Length: 1 to 128

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Focus Displacement	/Diagno /Format/UserDefMsg /FocusDisMsg	5225	3	Length: 1 to 128
DIGITIZER: Motor Failure	/Diagno /Format/UserDefMsg /DgtzMotFailMsg	5226	3	Length: 1 to 128
DIGITIZER: Motor Life End	/Diagno /Format/UserDefMsg /DgtzMotEndMsg	5227	3	Length: 1 to 128
DIGITIZER: Laser Fail	/Diagno /Format/UserDefMsg /DgtzLasFailMsg	5228	3	Length: 1 to 128
DIGITIZER: Laser Life End	/Diagno /Format/UserDefMsg /DgtzLasEndMsg	5229	3	Length: 1 to 128
DIGITIZER: Data Consistency Error	/Diagno /Format/UserDefMsg /DgtzCrcErrMsg	5230	3	Length: 1 to 128
DIGITIZER: Data Write Error	/Diagno /Format/UserDefMsg /DgtzWriteErrMsg	5231	3	Length: 1 to 128
DIGITIZER: Communication Error	/Diagno /Format/UserDefMsg /DgtzCommErrMsg	5232	3	Length: 1 to 128
DIGITIZER: Reset	/Diagno /Format/UserDefMsg /DgtzResetMsg	5233	3	Length: 1 to 128
OSCILLATING MIRROR: Motor Failure	/Diagno /Format/UserDefMsg /OmMotFailMsg	5234	3	Length: 1 to 128
OSCILLATING MIRROR: Motor Life End	/Diagno /Format/UserDefMsg /OmMotEndMsg	5235	3	Length: 1 to 128
OSCILLATING MIRROR: Data Consistency Error	/Diagno /Format/UserDefMsg /OmCrcErrMsg	5236	3	Length: 1 to 128
OSCILLATING MIRROR: Data Write Error	/Diagno /Format/UserDefMsg /OmWriteErrMsg	5237	3	Length: 1 to 128
OSCILLATING MIRROR: Communication Error	/Diagno /Format/UserDefMsg /OmCommErrMsg	5238	3	Length: 1 to 128
OSCILLATING MIRROR: Reset	/Diagno /Format/UserDefMsg /OmResetMsg	5239	3	Length: 1 to 128
Reading Conditions Controller: Communication Error	/Diagno /Format/UserDefMsg /DacCommErrMsg	5240	3	Length: 1 to 128
Focus Controller: Communication Error	/Diagno /Format/UserDefMsg /DpotzCommErrMsg	5241	3	Length: 1 to 128

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
Temperature Sensor: Communication Error	/Diagno /Format/UserDefMsg /TempsCommErrMsg	5242	3	Length: 1 to 128
Laser Temperature Sensor: Communication Error	/Diagno /Format/UserDefMsg /TempsANCommErr Msg	5537	1	0 = Disable 1 = Enable
Temperature Sensors Mismatch Error	/Diagno /Format/UserDefMsg /TempsMismatchErr Msg	5544	1	0 = Disable 1 = Enable
Low Temperature Alarm	/Diagno /Format/UserDefMsg /LowTempsAlMsg	5545	1	0 = Disable 1 = Enable
High Temperature Warning	/Diagno /Format/UserDefMsg /HighTempsWarnMsg	5546	1	0 = Disable 1 = Enable
Low Power Supply Alarm	/Diagno /Format/UserDefMsg /LowPowerAlMsg	5547	1	0 = Disable 1 = Enable
Slave No Reply	/Diagno /Format/UserDefMsg /SlaveNoReplyMsg	5090	3	Length: 1 to 128
Slave Address Duplication	/Diagno /Format/UserDefMsg /SlaveAddrDuplicationMsg	5088	3	Length: 1 to 128
Slave Net Configuration	/Diagno /Format/UserDefMsg /SlaveNet ConfigurationMsg	5089	3	Length: 1 to 128
FieldBus Failure	/Diagno /Format/UserDefMsg /FieldBusFailureMsg	5312	3	Length: 1 to 128
FieldBus Mismatch	/Diagno /Format/UserDefMsg /FieldBusMismatch Msg	5311	3	Length: 1 to 128
FieldBus Configuration Error	/Diagno /Format/UserDefMsg /FieldBusConfErrMsg	5410	3	Length: 1 to 128
FieldBus DHCP Problem	/Diagno /Format/UserDefMsg /FieldBusDhcpProblemMsg	5411	3	Length: 1 to 128
Wrong TCNM-ACBB Backup Module Rotary Switch Selection	/Diagno /Format/UserDefMsg /WrongRSPositionMsg	5310	3	Length: 1 to 128
TCNM-ACBB Backup Module Communication Failure	/Diagno /Format/UserDefMsg /CBXCommFailMsg	5309	3	Length: 1 to 128

4.12 STATISTICS

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
STATISTICS				
Enable	/Statisti /Enable	217	1	0 = Disable 1 = Enable
Separator	/Statisti /Separator	5141	3	Length: 0 to 32
Time (hh mm)	/Statisti /Clock_hm	5134	1	0 = Disable 1 = Enable
Phase Counter	/Statisti /PhaseCnt	5140	1	0 = Disable 1 = Enable
Good Read Counter	/Statisti /GoodrCnt	5135	1	0 = Disable 1 = Enable
Partial Read Counter	/Statisti /PartialRCnt	5139	1	0 = Disable 1 = Enable
No Read Counter	/Statisti /NoRCnt	5138	1	0 = Disable 1 = Enable
Motor OFF Counter	/Statisti /MotorOFFCnt	5136	1	0 = Disable 1 = Enable
Multiple Read Counter	/Statisti /MulRCnt	5137	1	0 = Disable 1 = Enable

4.13 USER INFORMATION SECTION

PARAMETER	COMPLETE PATH	SHC	PT	VALUE
USER INFORMATION SECTION				
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

A   SPECIAL COMMANDS AND TABLES

ID-NET SPECIAL COMMANDS

The following special command allows to send strings to a Slave #N through the Master device in an ID-NET reading system layout. In order to send this special command, it is not necessary to switch the reader into **Host Mode**.

This special command can be used to send Serial Motor On and Serial Motor Off strings (for Energy Saving purposes) or Serial Start String and Serial Stop String (for Serial On Line operating mode option) to a Slave device in an ID-NET reading system layout.

The TCNM-AD/EX/SP Family '**Send String To Slave Device #N**' special command must have the following format:

<div align="center">

<ESC> (<B0$_H$> ADDR STRING) <ESC>

</div>

Where:

- **ADDR**:   Device Address
- **STRING**:   String To Send (Length: 1 to 32)

ADDR is a character indicating the address of the device in an ID-NET Master/Slave reading system layout:

ADDR = <30$_H$> + <Device Address> where:

Device Address = 0:   Stand Alone device or Master ID-NET device
Device Address = 1 to 31: Slave ID-NET device
Device Address = 32:   ID-NET broadcast address

This means:

ADDR = <30$_H$>:   Stand Alone device or Master ID-NET device
ADDR = <31$_H$> to <4F$_H$>: Slave ID-NET device
ADDR = <50$_H$>   ID-NET broadcast address

CONTROL RULES TABLE

This paragraph provides a list of the most important control rules that can be applied to the TCNM-AD/EX/SP 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*.
On Line Options	Must be ≠ *Serial On Line* if Host Application Protocol Type = *Crisplant*.
Stop Phase Edge (only for On Line 2 Input)	Must be ≠ *Leading* if Extended Phase = *Enable*
ACK/NAK Protocol	Not available if Operating Mode Selection ≠ *On Line*. Not available if Scanner Cluster Topology Role = *Slave Synchronized*.
Quality Counters	Not available if Operating Mode Selection ≠ *On Line* and ≠ *Automatic*. Not available if Scanner Cluster Topology Role = *Slave Synchronized*.

PARAMETER	CONTROL RULES
VERIFIER	
Code Verifier	Not available if <u>Code Combination</u> ≠ *Single Label*. Not available if <u>Operating Mode Selection</u> ≠ *On Line* and ≠ *Automatic and ≠ Continuous*.
READING SYSTEM LAYOUT	
Local Device Alternative Network Settings	Must be ≠ *Master RS232 (Type A)* and ≠ *Slave RS232 (Type A)* if <u>Auxiliary Serial Port Data TX</u> = *Enable*. Must be ≠ *Master RS232 (Type A)* and ≠ *Slave RS232 (Type A)* if <u>Auxiliary Serial Port Pass Through</u> = *Enable*.
DATA COMMUNICATION SETTING	
Host Application Protocol Type	Must be ≠ *Crisplant* if <u>Operating Mode Selection</u> ≠ *On Line*. Must be ≠ *Crisplant* if <u>On Line Options</u> = *Serial On Line*. Must be ≠ *Crisplant* if <u>Main Port Communication Mode</u> ≠ *Standard*. Must be ≠ *Crisplant* if <u>Auxiliary Serial Port Pass Through</u> = *Enable*.
MAIN SERIAL PORT	
Main Port Communication Mode	Must be = Standard if <u>Host Application Protocol Type</u> ≠ *Standard*.
AUXILIARY SERIAL PORT	
Data Transmission	Must be = Disable if <u>Local Device Alternative Network Setting</u> = *Master RS232 (Type A)* or = *Slave RS232 (Type A).*
Pass Through	Must be = Disable if <u>Host Application Protocol Type</u> ≠ *Standard*. Must be = Disable if <u>Local Device Alternative Network Setting</u> = *Master RS232 (Type A)* or = *Slave RS232 (Type A).*
DIGITAL OUTPUT LINES SETTING	
Activation Event, Alternative Activation Event, Deactivation Event, Alternative Deactivation Event	Not available if <u>Activate On Any Diagnostics Error</u> = *Enabled*.
STATISTICS	
Enable	Not available if <u>Local Device Alternative Network Setting</u> = *Slave RS232 (Type A)*. Not available if <u>Scanner Cluster Topology Role</u> = *Slave Synchronized*. Not available if <u>Operating Mode Selection</u> ≠ *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