



MOTOROLA SCANNER SDK

ATTRIBUTE DATA DICTIONARY

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Revision History

Changes to the original guide are listed below:

Change	Date	Description
-01 Rev A	6/2011	Initial release

ABOUT THIS GUIDE

Introduction

This guide is a repository for attributes numbers (configuration parameters, monitored data, and born on information about the device) and well as the management of the various attribute domains. This guide applies to both bar code scanners and OEM engines.

Service Information

If you have a problem contact Motorola support for your region. Contact information is available at: <http://supportcentral.motorola.com>.

When contacting Mobility support, please have the following information available:

- Serial number of the unit
- Model number or product name
- Software type and version number.

Motorola responds to calls by E-mail, telephone or fax within the time limits set forth in support agreements.

If your problem cannot be solved by Motorola support, you may need to return your equipment for servicing and will be given specific directions. Motorola is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty.

If you purchased your business product from a Motorola business partner, contact that business partner for support.

SCANNER ATTRIBUTES - INTRODUCTION & DEFINITIONS

1 Introduction

This document provides a definition of attributes which are available on Motorola Advanced Data Capture devices including bar code scanners. It is intended to be used as a reference with the Motorola Scanner SDK or Remote Scanner Management Protocol document.

Not all devices support every attributes. Motorola Advanced Data Capture devices will report the supported attributes on command. Please use this mechanism to determine which attributes are supported on which products. Please refer the Motorola Scanner SDK for more information.

2 Definitions

RSM – Remote Scanner Management

Attributes – Configuration parameters, monitored data, and born on information about the device.

3 Motorola Attributes

3.1 Definition of Table Fields

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exception Notes
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3.1.1 Attribute Number

This field contains the attribute number. All attributes numbers are unique.

3.1.2 Attribute Name

This field defines the name of the attribute.

3.1.3 Description

This field contains a description of the attribute.

3.1.4 Type

Type	Definition
'B'	Byte – unsigned char
'C'	Char – signed byte
'F'	Bit Flags
'W'	WORD – short unsigned integer (16 bits)
'I'	SWORD – short signed integer (16 bits)
'D'	DWORD – long unsigned integer (32 bits)
'L'	SDWORD – long signed integer (32 bits)
'A'	Array
'S'	String
'X'	Action

3.1.5 Size

The size in bytes of the attribute.

3.1.6 Values

The valid range of values reported / accepted.

3.1.7 User Mode Access

Defines whether the attribute is “read only” or “read write”.

SCANNER ATTRIBUTE TABLES

4 Attributes

4.1 Discovery

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
533	"ModelNumber"	Model number of the scanner which matches the label of the device. For example:"LS4208-SR20001ZZ"	'S'	18	Variable	R	
534	"SerialNumber"	Unique serial number assigned at time of manufacture. For example:"M1J26F45V"	'S'	16	Variable	R	
541	"BluetoothAddress"	Unique Bluetooth Address of the device, assigned at time of manufacture. For example: {05, 27, 33, 89, 13, 75}	'A'	6	Variable	R	
20007	"DeviceClass"	Description of the device's hardware. For example: "1D Laser", "2D Laser", "Imager", "Cordless 1D Laser", "Cordless 2D Laser", "Cordless Imager", "Cordless Base Station"	'S'	18	Variable	R	
535	"DateofManufacture"	Date of Device Manufacture. For example: "15APR05"	'S'	7	Variable	R	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
536	"LastServiceDate"	Date of last repair within a Motorola Authorized repair facility. For example: "15APR05"	'S'	7	Variable	R	
20004	"ScannerFirmwareVersion"	Internal Symbol tracking code for the scanner's operating system version. For example: "NBRFMAAC" or "PAAAACS00-001-N01S0"	'S'	Variable	Variable	R	
20008	"ScankitVersion"	Identifies the 1D decode package that is resident in the device. For example: "SKIT4.33T02"	'S'	Variable	Variable	R	
20013	"ImagekitVersion"	Identifies the 2D decode package that is resident in the device. For example: "IMGKIT_4.04T02"	'S'	Variable	Variable	R	
20009	"CombinedFirmwareVersion"	Reports firmware versions of the multiple CPU's on a single product with space delimiters. For example: "NBRPUAAA NBRPUDAA"	'S'	Variable	Variable	R	
20011	"RSMVersion"	Identifies the RSM version resident in the device. For example: "2.0"	'S'	Variable	Variable	R	
614	"DateofFirstProgramming"	Date of first electronic programming. For example: "15APR05"	'S'	7	Variable	RW	
616	"ConfigurationFilename"	Identifies the device configuration. Scanning SetDefaults sets this value to Factory Defaults. Once set with this or another user defined value, this value changes to Modified upon scanning any parameter bar code.	'S'	17	Variable	RW	

4.2 System Events

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
256	"DecodeEvent"	When enabled, the scanner generates a message to the host whenever a bar code is successfully decoded. When disabled, no notification is sent.	'F'	1	"On" (1) "Off" (0)	RW	NOTE: Applies to SSI RS232 mode only.
258	"BootupEvent"	When enabled, the scanner generates a message to the host whenever power is applied. When disabled, no notification is sent.	'F'	1		RW	NOTE: Applies to SSI RS232 mode only.
259	"ParamEvent"	When enabled, the scanner generates a message to the host when a parameter is changed.	'F'	1		RW	NOTE: Applies to SSI RS232 mode only.

4.3 Operational Mode / Status

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
25000	"InCradleDetect"	Indicates if the cordless scanner is inserted in the cradle.	'B'	1	"In Cradle"(1) "Out of Cradle"(0)		
25001	"OperationalMode"	Indicates if the device is being used in ScanStand.	'B'	1	"Handsfree"(1) "Handheld"(0)		
25002	"Charging"	Indicates if the device is charging.	'B'	1	"FALSE"(0) "TRUE"(1)		

4.4 Beeper

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
140	"BeeperVolume"	The parameter defines the volume level set of the beeper.	'B'	1	"Low"(2) "Medium"(1) "High"(0)	RW	
145	"BeeperFrequency"	The parameter defines the frequency level set of the beeper.	'B'	1	"Low"(2) "Medium"(1) "High(0)"	RW	

4.5 DL Parsing

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
645	"DLParseMode"	This parameter specifies a Driver's License parsing Mode. It can be disabled, set to Embedded driver's license parsing (does not require Motorola software on the host) or set to Server Based driver's license parsing (requires Motorola software on the host).	'B'	1	Parsing Off (0) Parse w Embedded Software (1) Encrypt then send to host (2)	RW	
646	"DLParseBuffer"	The buffer containing the DL parse rules.	'A'	DL_PARSE_BUFF_SIZE		RW	DL parsing rules are in a proprietary format. End users wishing to deploy DL parsing rules should first manually program the scanner using programming bar codes and then reading the attribute from the application. The rules can then be deployed to other scanners in the enterprise.

4.6 ADF

The ADF buffer attribute contains a proprietary format which stores data formatting configurations. This format is not published however, the contents of this attribute can be copied from a "golden" scanner which has the correct settings and copied to other devices.

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
392	"ADFRules"	The parameter defines the advanced data formatting rules which should be applied to decoded bar codes.	'A'	Variable	Variable	RW	The ADF rules are in a proprietary format. End users wishing to deploy ADF rules should first manually program the scanner using programming bar codes and then reading the attribute from an application. The rule can then be deployed to other scanners in the enterprise.
110	"KeyDelay"		'B'	1	Variable	RW	See above.

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
111	"PauseDuration"		'B'	1	Variable	RW	See above.
98	"KeyCategory1"		'B'	1	Variable	RW	See above.
99	"KeyCategory2"		'B'	1	Variable	RW	See above.
100	"KeyCategory3"		'B'	1	Variable	RW	See above.
101	"KeyCategory4"		'B'	1	Variable	RW	See above.
102	"KeyCategory5"		'B'	1	Variable	RW	See above.
103	"KeyCategory6"		'B'	1	Variable	RW	See above.
104	"KeyValue1"		'B'	1	Variable	RW	See above.
105	"KeyValue2"		'B'	1	Variable	RW	See above.
106	"KeyValue3"		'B'	1	Variable	RW	See above.
107	"KeyValue4"		'B'	1	Variable	RW	See above.
108	"KeyValue5"		'B'	1	Variable	RW	See above.
109	"KeyValue6"		'B'	1	Variable	RW	See above.
235	"SimpleDataFormat"	The parameter controls the simple data formatting where data is presented in <prefix1><data><suffix1><suffix2>.	'B'	1	0 – <DATA> 1 – <DATA><SUFFIX1> 2 – <DATA><SUFFIX2> 3 – <DATA><SUFFIX1><SUFFIX2> 4 – <PREFIX><DATA> 5 – <PREFIX><DATA><SUFFIX1> 6 – <PREFIX><DATA><SUFFIX2> 7 – <PREFIX><DATA><SUFFIX1><SUFFIX2>	RW	

4.7 Synapse

The Synapse buffer attribute contains a proprietary format which stores host configuration. This format is not published however, the contents of this attribute can be copied from a “golden” scanner which has the correct settings and copied to other devices.

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
135	“Synapse”	The parameter defines the Host specific configuration parameters.	‘A’	80		RW	The Synapse buffer contents are in a proprietary format. They are used by Symbol Utilities to configure host related configuration changes.

4.8 Scanning / Symbologies Attribute Tables

4.8.1 UPC/EAN

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
1	“UPC-A”	This parameter enables the decoding of UPC-A.	‘F’	1	“Off”(0) “On”(1)	RW	
2	“UPC-E”	This parameter enables the decoding of UPC-E.	‘F’	1	“Off”(0) “On”(1)	RW	
12	“UPC-E1”	This parameter enables the decoding of UPC-E1.	‘F’	1	“Off”(0) “On”(1)	RW	
4	“EAN-8/JAN8”	This parameter enables the decoding of EAN-8/JAN 8.	‘F’	1	“Off”(0) “On”(1)	RW	
3	“EAN-13/JAN13”	This parameter enables the decoding of EAN-13/JAN 13.	‘F’	1	“Off”(0) “On”(1)	RW	
83	“BooklandEAN”	This parameter enables the decoding of Bookland EAN.	‘F’	1	“Off”(0) “On”(1)	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
16	"UPC/EAN/JANSupplementals"	Decode Supplemental (2 and 5 digits). Supplementals are bar codes appended according to specific format conventions (e.g., UPC A+2, UPC E+2, EAN 13+2). Six options are available.	'B'	1	"UPC/EAN/JANOnlyWithSupplemental"(1) "IgnoreSupplemental"(0) "AutodiscriminateUPC/EAN/JANSupplementals"(2) "EnableSmartSupplementalMode"(3) "Enable378/379SupplementalMode"(4) "Enable978SupplementalMode"(5)	RW	
80	"UPC/EAN/JANSupplementalRedundancy"	With Auto discriminate UPC/EAN/JAN Supplemental selected, this parameter adjusts the number of times a symbol without Supplemental is decoded before transmission. The range is from two to thirty times. Five or above is recommended when decoding a mix of UPC/EAN symbols with and without supplemental, and the auto discriminate option is selected.	'B'	1	"2 to 30"	RW	
40	"TransmitUPC-ACheckDigit"	This parameter enables transmission of bar code data with a check digit.	'F'	1	"Off"(0) "On"(1)	RW	
41	"TransmitUPC-ECheckDigit"	This parameter enables transmission of bar code data with a check digit.	'F'	1	"Off"(0) "On"(1)	RW	
42	"TransmitUPC-E1CheckDigit"	This parameter enables transmission of bar code data with a check digit.	'F'	1	"Off"(0) "On"(1)	RW	
34	"UPCAPreamble"	Preamble characters are part of the UPC symbol consisting of Country Code and System Character.	'B'	1	"No Preamble"(0) "System Character"(1) "System Character & Country Code"(2)	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
35	"UPCEPreamble"	Preamble characters are part of the UPC symbol consisting of Country Code and System Character.	'B'	1	"No Preamble"(0) "System Character"(1) "SystemCharacter & CountryCode"(2)	RW	
36	"UPCE1Preamble"	Preamble characters are part of the UPC symbol consisting of Country Code and System Character.	'B'	1	"NoPreamble"(0) "SystemCharacter"(1)," SystemCharacter & CountryCode"(2)	RW	
37	"ConvertUPCEtoA"	Enable this parameter to convert UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).	'F'	1	"Off"(0) "On"(1)	RW	
38	"ConvertUPCE1toA"	Enable this parameter to convert UPC-E1 decoded data to UPC-A format before transmission. After conversion, the data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).	'F'	1	"Off"(0) "On"(1)	RW	
39	"EAN8/JAN8Extend"	When enabled, this parameter adds five leading zeros to decoded EAN-8 symbols to make them compatible in format to EAN-13 symbols.	'F'	1	"Off"(0) "On"(1)	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
85	"UCCCouponExtendedCode"	When enabled, this parameter decodes UPCA bar codes starting with digit '5', EAN-13 bar codes starting with digit '99', and UPCA/EAN-128 Coupon Codes. UPCA, EAN-13 and EAN-128 must be enabled to scan all types of Coupon Codes.	'F'	1	"Off"(0) "On"(1)	RW	
45	"TransmitCodeId"		'B'	1	"None"(00) "AIM Code ID"(01) "Symbol Code ID"(02)	RW	
207	"Supp2"	Enables Supp2 UPC decoding.	'F'	1	"Off"(0) "On"(1)	RW	
208	"Supp5"	Enables Supp5 UPC decoding.	'F'	1	"Off"(0) "On"(1)	RW	

4.8.2 Code 128

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
8	"Code128"	This parameter enables the decoding of Code 128.	'F'	1	"Off"(0), "On"(1)	RW	
14	"UCC/EAN-128"	This parameter enables the decoding of UCC/EAN-128.	'F'	1	"Off"(0), "On"(1)	RW	
84	"ISBT128"	This parameter enables ISBT 128 (non-concatenated). If concatenation is necessary, the host must perform the process.	'F'	1	"Off"(0), "On"(1)	RW	
60	"Code128Redundancy"		'F'	1	"Off"(0), "On"(1)	RW	
123	"EAN128Emulation"	This parameter enables EAN128 emulation.	'F'	1	"Off"(0), "On"(1)	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
209	"Code128Length1"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"5"	RW	
210	"Code128Length2"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"55"	RW	

4.8.3 Code 39

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
0	"Code39"	This parameter enables the decoding of Code 39.	'F'	1	"Off"(0) "On"(1)	RW	
13	"TriopticCode39"	This parameter enables the decoding of Trioptic Code 39. Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously.	'F'	1	"Off"(0) "On"(1)	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
86	"ConvertCode39toCode32"	This parameter converts Code 39 to Code 32. Code 39 must be enabled for this parameter to function.	'F'	1	"Off"(0) "On"(1)	RW	
231	"Code32Prefix"	This parameter enables adding the prefix character "A" to all Code 32 bar codes. Convert Code 39 to Code 32 must be enabled for this parameter to function.	'F'	1	"Off"(0) "On"(1)	RW	
18	"LengthforCode39Length1"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"5"	RW	
19	"LengthforCode39Length2"	Defines the allowable lengths for the symbology Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"55"	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
48	"Code39CheckDigitVerification"	This parameter enables the scanner to check the integrity of all Code 39 symbols to verify that the data complies with specified check digit algorithm. Only Code 39 symbols which include a modulo 43 check digit are decoded. Enable this feature if the Code 39 symbols contain a Modulo 43 check digit.	'F'	1	"Off"(0) "On"(1)	RW	
43	"TransmitCode39CheckDigit"	This parameter enables transmission of bar code data with a check digit. Code 39 Check Digit Verification must be enabled for this parameter to function.	'F'	1	"Off"(0) "On"(1)	RW	
17	"Code39FullASCIIConversion"	This parameter enables the interpretation of Code 39 as Code 39 Full ASCII. Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously. Code 39 Full ASCII to Full ASCII Correlation is host-dependent and is described in the ASCII Character Set table of your scanner's Product Reference Guide.	'F'	1	"Off"(0) "On"(1)	RW	
113	"BufferCode39"	This parameter allows the scanner to accumulate data from multiple Code 39 symbols.	'F'	1	"Off"(0) "On"(1)	RW	

4.8.4 Code 93

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
9	"Code93"	This parameter enables the decoding of Code 93.	'F'	1	"Off"(0) "On"(1)	RW	
26	"LengthforCode93Length1"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"5"	RW	
27	"LengthforCode93Length2"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"55"	RW	

4.8.5 Code 11

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
10	"Code11"	This parameter enables the decoding of Code 11.	'F'	1	"Off"(0) "On"(1)	RW	
52	"Code11CheckDigitVerification"	This parameter enables the scanner to check the integrity of all Code 11 symbols to verify that the data complies with the specified check digit algorithm.	'B'	1	"Off"(0) "On-one check digit"(1) "On-two check digit"(2)	RW	
47	"TransmitCode11CheckDigit"	This parameter enables transmission of bar code data with a check digit. Code 11 Check Digit Verification must be enabled for this parameter to function.	'F'	1	"Off"(0) "On"(1)	RW	
28	"LengthforCode11Length1"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"5"	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
29	"LengthforCode11Length2"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"55"	RW	

4.8.6 Interleaved 2 of 5 (ITF)

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
6	"Interleaved2of5"	This parameter enables the decoding of Interleaved 2 of 5.	'F'	1	"Off"(0) "On"(1)	RW	
49	"l2of5CheckDigitVerification"	This parameter enables the scanner to check the integrity of all I 2 of 5 symbols to verify the data complies with either the Uniform Symbology Specification (USS), or the Optical Product Code Council (OPCC) check digit algorithm.	'B'	1	"Off"(0) "On -USS CheckDigit"(1) "On -OPCC CheckDigit"(2)	RW	
44	"Transmitl2of5CheckDigit"	This parameter enables transmission of bar code data with a check digit. I 2 of 5 Check Digit Verification must be enabled for this parameter to function.	'F'	1	"Off"(0) "On"(1)	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
82	"ConvertI2of5toEAN13"	This parameter converts 14-character I 2 of 5 codes to EAN-13, and transmit to the host as EAN-13. To accomplish this, the I 2 of 5 code must be enabled, and the code must have a leading zero and a valid EAN-13 check digit.	'F'	1	"Off"(0) "On"(1)	RW	
22	"LengthforI2of5Length1"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"5"	RW	
23	"LengthforI2of5Length2"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"55"	RW	

4.8.7 Discrete 2 of 5 (DTF)

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
5	"Discrete2of5"	This parameter enables the decoding of Discrete 2 of 5.	'F'	1	"Off"(0) "On"(1)	RW	
20	"LengthforD2of5Length1"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"5"	RW	
21	"LengthforD2of5Length2"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"55"	RW	

4.8.8 Chinese 2 of 5

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
408	"Chinese2of5"	This parameter enables the decoding of Chinese 2 of 5.	'F'	1	"Off"(0) "On"(1)	RW	

4.8.9 Codabar (NW – 7)

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
7	“Codabar”	This parameter enables the decoding of Codabar.	‘F’	1	"Off"(0) "On"(1)	RW	
54	“CLSIEditing”	This parameter strips the start and stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar symbol. Symbol length does not include start and stop characters.	‘F’	1	"Off"(0) "On"(1)	RW	
55	“NOTISEditing”	This parameter strips the start and stop characters from a decoded Codabar symbol.	‘F’	1	"Off"(0) "On"(1)	RW	
24	“LengthforCodabarLength1”	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	B	1	“5”	RW	
25	“LengthforCodabarLength2”	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	B	1	“55”	RW	

4.8.10 MSI

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
11	"MSI"	This parameter enables the decoding of MSI.	'F'	1	"Off"(0) "On"(1)	RW	
50	"MSICheckDigits"	This parameter determines how many check digits will be analyzed during decoding. With MSI symbols, one check digit is mandatory and always verified by the reader. The second check digit is optional.	'F'	1	"One MSI Check Digit"(0) "Two MSI Check Digits"(1)	RW	
46	"TransmitMSICheckDigit"	This parameter enables transmission of bar code data with a check digit.	'F'	1	"Off"(0), "On"(1)	RW	
51	"MSICheckDigitAlgorithm"	This parameter selects which of two algorithms are used for the verification of the second MSI check digit.	'F'	1	"MOD 10/MOD 11" "MOD 10/MOD 10"	RW	
30	"LengthforMSILength1"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"5"	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
31	"LengthforMSILength2"	Defines the allowable lengths for the symbology. Length Within Range: L1 < L2 Two Lengths: L2 > L1 One Length: L1 = len; L2=0 Any Length: L1=0; L2=0	'B'	1	"55"	RW	

4.8.11 RSS / GS1 Databar

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
338	"GS1DataBar14"	This parameter enables the decoding of GS1 DataBar-14 and its stacked variant.	'F'	1	"Off"(0) "On"(1)	RW	
339	"GS1DataBarLimited"	This parameter enables the decoding of GS1 DataBar Limited.	'F'	1	"Off"(0) "On"(1)	RW	
340	"GS1DataBarExpanded"	This parameter enables the decoding of GS1 DataBar Expanded and its stacked variant.	'F'	1	"Off"(0) "On"(1)	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
397	"ConvertGS1DataBarToUPCEAN"	This parameter only applies to GS1 DataBa-14 and GS1 DataBar Limited symbols not decoded as part of a Composite symbol. Enable this to strip the leading '010' from GS1 DataBar-14 and GS1 DataBar Limited symbols encoding a single zero as the first digit, and report the bar code as EAN-13. For bar codes beginning with two or more zeros but not six zeros, this parameter strips the leading '0100' and reports the bar code as UPC-A. The UPC-A Preamble parameter that transmits the system character and country code applies to converted bar codes. Note that neither the system character nor the check digit can be stripped.	'F'	1	"Off"(0) "On"(1)	RW	

4.8.12 Code 32

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
86	"Code32"	This parameter enables the decoding of Code32.	'F'	1	"Off"(0) "On"(1)	RW	
231	"Code32Prefix"	This parameter enables the Code32 Prefix.	'F'	1	"Off"(0) "On"(1)	RW	

4.8.13 Symbology Security Level

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
78	"RedundancyLevel"	This parameter sets the scanner's Redundancy Level. The scanner offers four levels of decode redundancy. Select higher redundancy levels for decreasing levels of bar code quality. As redundancy levels increase, the scanner's aggressiveness decreases. Refer to your scanner's Product Reference Guide for details.	'B'	1	"0" "1" "2" "3"	RW	
77	"SecurityLevel"	The scanner offers four levels of decode security for delta bar codes, which include the Code 128 family, UPC/EAN, and Code 93. Select increasing levels of security for decreasing levels of bar code quality. As security levels increase, the scanner's aggressiveness decreases. Refer to your scanner's Product Reference Guide for details.	'B'	1	"0" "1" "2" "3"	RW	
67	"BidirectionalRedundancy"	This parameter enables Bi-directional decode Redundancy, which adds security to linear code type decoding. When enabled, a bar code must be successfully scanned in both directions (forward and reverse) before reporting a good decode.	'F'	1	"Off" "On"	RW	

4.8.14 PDF

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
15	“PDF”	This parameter enables the decoding of PDF.	‘F’	1	"Off"(0) "On"(1)	RW	
227	“MicroPDF”	This parameter enables the decoding of MicroPDF.	‘F’	1	"Off"(0) "On"(1)	RW	

4.8.15 DataMatrixQR

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
292	“DataMatrix”	This parameter enables the decoding of DataMatrix.	‘F’	1	"Off"(0) "On"(1)	RW	

4.8.16 Maxicode

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
294	“Maxicode”	This parameter enables the decoding of Maxicode.	‘F’	1	“Off”, “On”	RW	

4.8.17 Postal

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
89	“USPost1”	This parameter enables the decoding of USPost1.	‘F’	1	"Off"(0) "On"(1)	RW	
90	“USPost2”	This parameter enables the decoding of USPost2.	‘F’	1	"Off"(0) "On"(1)	RW	
91	“UKPost”	This parameter enables the decoding of UKPost.	‘F’	1	"Off"(0) "On"(1)	RW	
92	“CanadaPost”	This parameter enables the decoding of CanadaPost.	‘F’	1	"Off"(0) "On"(1)	RW	
95	“USPostParity”	This parameter enables the parity option of USPostal bar codes.	‘F’	1	"Off"(0) "On"(1)	RW	
96	“UKPostParity”	This parameter enables the parity option of UKPostal bar codes.	‘F’	1	"Off"(0) "On"(1)	RW	
290	“JapanPost”	This parameter enables the parity option of Japan Post bar codes.	‘F’	1	"Off"(0) "On"(1)	RW	
291	“AusPost”	This parameter enables the parity option of Australia Post bar codes.	‘F’	1	"Off"(0) "On"(1)	RW	

4.8.18 Signature Capture

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
93	“SignatureCapture”	This parameter enables the decoding of Signature Bar codes. NOTE: Scanning an signature capture bar code will product an Image of the contents within the bar code.	‘F’	1	"Off"(0) "On"(1)	RW	
366	“SigCapWidth”	This parameter sets the width of the signature capture.	‘W’	2	Variable	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
367	"SigCapHeight"	This parameter sets the height of the signature capture.	'W'	2	Variable	RW	

4.8.19 OCR

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
547	"OCRTemplate1"	Set OCR template that matches an OCR string to be read.	'S'	Variable	Variable		
554	"OCRSecurityLevel"	OCR security / confidence level.	'B'	1	10..90	RW	
680	"OCRAEnable"	OCR-A Enable/Disable.	'F'	1	"Enable"(1) "Disable"(0)	RW	
681	"OCRBEnable"	OCR-B Enable/Disable.	'F'	1	"Enable"(1) "Disable"(0)	RW	
682	"MICRE13BEnable"	Enable/Disable MICR E13B.	'F'	1	"Enable"(1), "Disable"(0)	RW	
683	"USCurrencyEnable"	Enable/Disable US Currency Serial Number.	'F'	1	"Enable"(1), "Disable"(0)	RW	
684	"OCRAVariant"	Set one of OCR-A variants.	'B'	1	0, 1, 2, 3	RW	
685	"OCRBVariant"	Set one of OCR-B variants.	'B'	1	0..10	RW	
686	"OCRSubset"	Set OCR character subset for an OCR string to be read.	'S'	Variable	00000000000000000000 00000000000000000000 00000000000000000000 000000000000	RW	
687	"OCROrientation"	Set the orientation of an OCR string to be read to the camera.	'B'	1	0, 1, 2, 3	RW	
688	"OCRCheckDigitMod"	Set OCR module check calculation.	'B'	1	1..99	RW	
689	"OCRMinChar"	Set minimum number of OCR characters per line to decode.	'B'	1	3..100	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
690	“OCRMaxChar”	Set maximum number of OCR characters per line to decode.	‘B’	1	3..100	RW	
691	“OCRLines”	Set number of lines of OCR to be read.	‘B’	1	1, 2, 3	RW	
694	“OCRCheckDigitValid”	Set one of OCR check digit validations.	‘B’	1	0..9	RW	
695	“OCRQuietZone”	Set OCR quiet zone.	‘B’	1	20.99	RW	
696	“OCRBWLevel”	Sets OCR White Level.	‘B’	1	0..99	RW	
697	“OCRDespeckle”	OCR Despeckle Level.	‘B’	1	0..99	RW	
698	“OCRThicken”	OCR Thickening.	‘B’	1	0..16	RW	
699	“OCRLowPassFilter”	OCR Low Pass Filter.	‘B’	1	0..20	RW	
700	“OCRCheckDigitMulti”	OCR check digit multiplier string.	‘S’	Variable	1212121212	RW	
701	“OCRBrightIllum”	Enable brightness for long OCR strings.	‘F’	1	“Enable”(1) “Disable”(0)	RW	
702	“OCRFinderEnable”	Enables OCR finder.	‘F’	1	“Enable”(1) “Disable”(0)	RW	
707	“OCRFinderExternal”	Enabled external OCR finder.	‘F’	1	“Enable”(1) “Disable”(0)	RW	

4.9 Imaging

4.9.1 Imaging Properties

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
315	“CropTop”	This parameter set the value at which the image is cropped from the top.	‘W’	2	0 to 1023	RW	
316	“CropLeft”	This parameter set the value at which the image is cropped from the left.	‘W’	2	0 to 1279	RW	
317	“CropBottom”	This parameter set the value at which the image is cropped from the bottom.	‘W’	2	0 to 1023	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
318	"CropRight"	This parameter set the value at which the image is cropped from the right.	'W'	2	0 to 1279	RW	
561	"JPEGFileSizeWord"	This parameter sets the size of the JPEG image in multiples of 1K.	'W'	2	5 to 600	RW	
567	"Exposure"	Sets the time of exposure.	'W'	1	5 to 5000	RW	
647	"SnapshotByMotion"	When enabled, once an object in the field of view remains stationary, an image will be taken and transmitted to the host. This applies to Snapshot mode only.	'F'	1	"Off" "On"	RW	
648	"ContinuousSnapshot"	Select Enable to stay in Snapshot mode, and Disable to return to normal decode mode after image capture. This only applies in Presentation Snapshot by Motion mode.	'F'	1	"Off" "On"	RW	
664	"ImageEdgeSharpen"	Sharpens the image.	'B'	1	0 (Off) to 100 (high)	RW	
665	"ImageRotation"	Rotates the image.	'B'	1	0 – 0 degrees 1 – 90 degrees 2 – 180 degrees 3 – 270 degrees	RW	
666	"ContrastEnhancement"	Enhances the image contrast.	'B'	1	0 – Disable 1 - Enable	RW	
667	"VideoSubsample"	Sets the image resolution. Image size will be changed if you manipulate this parameter.	'B'	1	0 to 3	RW	
668	"AimBrightness"	Sets the brightness of the aim patterns by altering the aim duration.	'B'	1	0 to 255 in .5ms increments	RW	
669	"IlluminationBrightness"	Sets the brightness of the illumination.	'B'	1	0 (weakest) to 10 (strongest)	RW	

4.10 RFID

This section describes attributes used for RFID status / control.

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
35001	“RFIDLastTagID”	The EPC Tag ID of the last tag reported.	‘A’	32+2		R	Size encoded binary TagID Convenience.
35002	“RFIDTagID”	The EPC Tag ID of the tag to be operated upon.	‘A’	32+2		W	Size encoded binary TagID. Required for all commands.
35003	“RFIDBank“	Desired Tag Bank.	‘B’	1	0 = reserved 1 = EPC 2 = TID 3 = User	W	Required for Read, Write.
35004	“RFIDData”	Buffer for read or write.	‘A’	64+2		RW	Size encoded binary data. Required for Write: data to be written. Required for Lock: Lock configuration. Result data after Read.
35005	“RFIDOffset“	Word offset into tag buffer.	‘W’	1		W	16 bit words; Required for Read.
35006	“RFIDLength”	Words of data to read from tag buffer. (0 means entire buffer).	‘W’	1		W	16 bit words; Required for Read, Write.
35007	“RFIDPassword”	Binary password for privileged operations.	‘A’	4		W	Optional for all commands.
35008	“RFIDCommand”	Execute command.	‘B’	1	1 = Read 2 = Write 3 = Lock 4 = Kill	W	
35009	“RFIDCmdStatus”	Resulting status from executing a command.	‘W’	1		R	Result of all commands.

For “size-encoded” binary data, the first 2 bytes contain the length (MSB, LSB) for the data to be considered (needed because the RSM attributes are fixed size).

RFIDCmdStatus is two bytes defined in the following table.

Bytes	Definition
0x0000	Success
0x0001	No RFID module
0x0002	Tag Not Found
0x0003	Timeout
0x0004	Tag CRC Error
0x01xx	Tag Backscatter Error, LSB indicates the error_code as per EPC Protocol.
0x02xx	Tag Access error. LSB indicates the error code
0x03xx	Bad Parameter, the LSB indicates which parameter: 1 = Command 2 = TagID 3 = Bank 4 = Data 5 = Offset 6 = Password

4.11 Action

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
6000	"Beeper/LED"	Triggers the beeper/LED via command.	'X'		Beep / LED action	Value	W
					1 high short beep	0	
					2 high short beeps	1	
					3 high short beeps	2	
					4 high short beeps	3	
					5 high short beeps	4	
					1 low short beep	5	
					2 low short beeps	6	
					3 low short beeps	7	
					4 low short beeps	8	
					5 low short beeps	9	
					1 high long beep	10	
					2 high long beeps	11	
					3 high long beeps	12	
					4 high long beeps	13	
					5 high long beeps	14	
					1 low long beep	15	
					2 low long beeps	16	
					3 low long beeps	17	
					4 low long beeps	18	
					5 low long beeps	19	
					Fast warble beep	20	
					Slow warble beep	21	
					High-low beep	22	
					Low-high beep	23	
					High-low-high beep	24	
					Low-high-low beep	25	
					High-high-low-low beep	26	
					Green LED off	42	
					Green LED on	43	
					Yellow LED on	45	
					Yellow LED off	46	
					Red LED on	47	
					Red LED off	48	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
6001	"ParameterDefaults"	Initiates a parameter defaults command.	'X'		0 – Restore Defaults 1 – Restore Factory Defaults 2 – Write Custom Defaults	W	
6002	"ParameterBuffer"	Retrieves entire parameter buffer.	'A'			R	
6003	"BeepOnNextBootup"	Controls whether or not the boot up / power up beep is suppressed on the next powerup.	'X'		0 – Disable beep on next bootup 1 – Enable beep on next bootup	W	
6004	"Reboot"	Remote reboot command.	'X'			W	
6005	"HostTriggerSession"	Triggers the scanner to start scanning via command.	'X'		0 – start Host Trigger Session 1 – stop Host Trigger Session	W	

4.12 Bluetooth / Cordless

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
541	"BluetoothAddress"	The parameter defines Bluetooth address of the device.	'A'	6	0x010203040506	RO	
549	"BluetoothAuthentication"	The parameter defines whether Bluetooth authentication is required.	'F'	1	"On"(1) "Off"(0)	RW	
550	"BluetoothEncryption"	The parameter defines whether encryption over Bluetooth is required.	'F'	1	"On"(1) "Off"(0)	RW	
552	"BluetoothPincode"	The parameter stores the pincode required when Bluetooth Authentication is enabled.	'S'	BT_PIN_CODE_LEN+1	"12345"	RW	
558	"BluetoothReconnectAttempts"	The parameter defines number of reconnect attempts	'W'	2	Infinite(0), 1-0xFFFF	RW	

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
559	"BluetoothBeepOnReconnectAttempt"	The parameter defines whether the scanner beeps on reconnect attempt.	'F'	1	No beep(0), Beep (1)	RW	
604	"BluetoothHIDAutoReconnect"	The parameter defines auto-reconnect behavior of the scanner when HID connection is lost.	'B'	1	Never Reconnect (0) Reconnect on Data (1) Reconnect Immediately (2)	RW	
607	"BluetoothFriendlyName"	The parameter defines the friendly name displayed by Bluetooth remote devices.	'S'	24+1	"My Scanner"	RW	
608	"BluetoothPincodeType"	The parameter defines whether to prompt the user for PIN code or use PIN code stored in memory.	'F'	1	"Variable"(1) "Static"(0)	RW	
610	"BluetoothInquiryMode"	The parameter only defines whether general or limited inquiry mode is used.	'F'	1	"Limited"(1) "General"(0) Only applicable for Bluetooth server hosts.	RW	

4.13 USB

4.13.1 IBM Handheld and Tabletop

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
5001	"IBMHHIgnoreConfigDirs"	Commands the scanner to ignore the IBM Handheld configuration directives.	'F'	1	"FALSE"(0) "TRUE"(1)	R/W	

4.14 RS485

4.14.1 IBM

Attribute Number	Attribute Name	Description	Type	Size (Bytes)	Values	User Mode Access	Exceptions Notes
5000	"IBMIgnoreConfigDirectives"	Commands the scanner to ignore the IBM (46xx) RS485 configuration directives.	'F'	1	"FALSE"(0) "TRUE"(1)	R/W	



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