M3 Mobile

**Android SDK Guide book**

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M3 Mobile does not guarantee the quality and performance of the programs written in unsupported programming language. For supported development tools and languages, please refer to Development Tool and Requirements section.

**Requirements**

**The following software must be installed**

Microsoft Microsoft© Windows 10 (32-bit and 64-bit)

Java Development Kit (JDK) v7u7 or higher

Android Developer Tools (ADT) v22.6.0 or higher

Android SDK 4.3.1 (API Version 18)

**Official site provides the Android SDK**

<http://developer.android.com/>

**Devices Supported**

The following device has been used for validation:

SM15 – 7.1.1 (Nugat, M3 OS ver. 1.2.0)

SM15 – 8.0 (Oreo, M3 OS Ver.)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Key Remap | Scanner | LongRange Scanner | UHF RFID Reader |
| SM15 | O | O | O | O |
| UL20 | X(supported soon) | O | X | X |

**Revision History**

**Version 0.0.1** Release date. 2018-03-29

* Supported SM15(Android 7.1.1)

**Version 0.0.2** Release date. 2018-04-20

* Included UHF RFID Reader SDK (SM15 only)

**Version 0.0.3** Release date. 2018-07-03

* Added Intelligent Document Capture

**Version 1.0.0**  Release date. 2018-10-08

* Added AIDL Scanner SDK
* Added Decode Count Intent Extra
* Added IDC Symbology QR Code Value

**Version 1.1.0**  Release date. 2019-01-10

* Added Honeywell Scanner SDK

**Version 1.1.2**  Release date. 2019-06-13

* Added LongRange Scanner SDK

**Version 1.1.3**  Release date. 2019-07-29

* Added UHF RFID AIDL Callback SDK

**Version 1.2.0**  Release date. 2019-11-15

* Supported AIDL SDK for install type ScanEmul

**Version 1.2.1**  Release date. 2019-11-20

* Added UHF\_DEMO source code 해설서

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# Key Remap

## Key Remap SDK

### Classes - APIs

* KeyRemap
  + Member classes
    - KeyLScan LScan
    - KeyRScan RScan
    - KeyAction Action
    - KeyCam Cam
    - KeyVolUp VolUp
    - KeyVolDown VolDown
    - KeyBack Back
    - KeyHome Home
    - KeyMenu Menu
  + Common Functions
    - getDefaultKey()
    - setDefaultKey()
    - setKey(int)
    - getKey()
* KeyLScan
* KeyRScan
* KeyCam
* KeyVolUp
* KeyVolDown
* KeyBack
* KeyHome
* KeyMenu
* KeyAction

### Tutorial

1. **Initialization**

|  |
| --- |
| **import** com.m3.sdk.key.KeyRemap;  **private** KeyRemap mKey = **new** KeyRemap(); |

1. **Get/Set Key code**

|  |
| --- |
| // get  **int** nCode = 0;  nCode = mKey.VolUp.getKey();  // set  nCode = KeyRemap.getDisableKeyCode()***;***  mKey.VolUp.setKey(nCode); |

1. **Get/Set Default Key code**

|  |
| --- |
| // get  **int** nCode = 0;  nCode = mKey.VolUp.getDefaultKey();  // set  mKey.VolUp.setDefaultKey(); |

### APIs

|  |
| --- |
| int getDefaultKey() |

Get ‘Default Key code’.

**Parameter**

None

**Return**

Int

Key Code

**Example**

// get

int nCode = 0;

nCode = mKey.VolUp.getDefaultKey();

|  |
| --- |
| boolean setDefaultKey() |

Set the key as ‘Default Key Code’.

**Parameter**

None

**Return**

boolean

true or false

**Example**

// set

mKey.VolUp.setDefaultKey();

|  |
| --- |
| boolean setKey(int setKeyCode) |

Change the key setting.

**Parameter**

int Desired Key Code

**Return**

boolean true or false

**Example**

nCode = KeyRemap.KEY\_DISABLE;

mKey.VolUp.setKey(nCode);

|  |
| --- |
| int getKey() |

Get ‘Key Code’.

**Parameter**

None

**Return**

int

Assigned key code

**Example**

int nCode = 0;

nCode = mKey.VolUp.getKey();

# SCANNER

## Scanner API SDK

### Classes - APIs

* Barcode
  + void setScanner(Boolean enable)
  + void scanStart()
  + void scanDispose()
* BarcodeBroadcast
* BarcodeListener
  + void onBarcode(String barcode)
  + void onBarcode(String barcode, String codeType)
* BarcodeManager
  + void addListener(BarcodeListener bl)
  + void removeListener(BarcodeListener bl)
  + void dismiss()

### Tutorial

1. **Initialization**

|  |
| --- |
| **import** com.m3.sdk.scannerlib.Barcode;  **import** com.m3.sdk.scannerlib.BarcodeListener;  **import** com.m3.sdk.scannerlib.BarcodeManager;  **import** com.m3.sdk.scannerlib.Barcode.Symbology;  **private** Barcode mBarcode = **null**;  **private** BarcodeListener mListener = **null**;  **private** BarcodeManager mManager = **null**;  **private** Symbology mSymbology = **null**;  mBarcode = **new** Barcode(**this**);  mManager = **new** BarcodeManager(**this**);  mSymbology = mBarcode.getSymbologyInstance();  mBarcode.setScanner(**true**);    mListener = **new** BarcodeListener() {  @Override  **public** **void** onBarcode(String strBarcode) {  Log.*i*("ScannerTest","result="+strBarcode);  }  @Override  **public** **void** onBarcode(String barcode, String codeType) {  Log.*i*("ScannerTest","result="+barcode);  mTvResult.setText("data: " + barcode + " type: " + codeType);  }  };  mManager.addListener(mListener); |

* AndroidManifest.xml

|  |
| --- |
| <uses-permission android:name=*"android.permission.WRITE\_SETTINGS"* /> |

1. **Start and Stop reading barcode**

|  |
| --- |
| **public** **void** onClick(View vw) {  **int** id = vw.getId();  **if**(id == R.id.***startread***){  mBarcode.scanStart();  }**else** **if**(id == R.id.***stopread***){  mBarcode.scanDispose();  }    } |

1. **Close**

|  |
| --- |
| mManager.removeListener(mListener);  mManager.dismiss();  mBarcode.setScanner(**false**); |

### APIs

* **Barcode class**

|  |
| --- |
| void setScanner(boolean enable) |

Enable Scanner status or disable.

**Parameter**

enable

Set Scanner status.

**Return**

Void

|  |
| --- |
| void scanStart() |

Shooting the beam for barcode reading

**Parameter**

*None*

**Return**

v*oid*

|  |
| --- |
| void scanDispose() |

Stop the beam

**Parameter**

*None*

**Return**

v*oid*

* **BarcodeManager class**

|  |
| --- |
| void addListener(BarcodeListener bl) |

**Description**

Add User Instance of BarcodeListener class for both Barcode reading result and Symbology set result.

**Parameter**

*bl* BarcodeListener class instance to get callback event

**Return**

*void*

|  |
| --- |
| void removeListener(BarcodeListener bl) |

**Description**

Remove the user instance of BarcodeListener class added.

**Parameter**

*bl* BarcodeListener class instance to be removed.

**Return**

*void*

|  |
| --- |
| void dismiss() |

**Description**

Terminate BarcodeManager.

**Parameter**

*None*

**Return**

*void*

## Scanner Intent SDK

1. **Intent Constant Values**

|  |
| --- |
| ***SCANNER\_ACTION\_SETTING\_CHANGE* = "com.android.server.scannerservice.settingchange";**  ***SCANNER\_ACTION\_PARAMETER* = "android.intent.action.SCANNER\_PARAMETER";**  ***SCANNER\_ACTION\_ENABLE* = "com.android.server.scannerservice.m3onoff";**  ***SCANNER\_ACTION\_START* = "android.intent.action.M3SCANNER\_BUTTON\_DOWN";**  ***SCANNER\_ACTION\_CANCEL* = "android.intent.action.M3SCANNER\_BUTTON\_UP";**  ***SCANNER\_ACTION\_BARCODE* = "com.android.server.scannerservice.broadcast";**  ***SCANNER\_EXTRA\_ENABLE* = "scanneronoff";**  ***SCANNER\_EXTRA\_BARCODE\_DATA* = "m3scannerdata";**  ***SCANNER\_EXTRA\_BARCODE\_CODE\_TYPE* = "m3scanner\_code\_type";**  ***SCANNER\_EXTRA\_MODULE\_TYPE* = "m3scanner\_module\_type";**  ***SCANNER\_EXTRA\_BARCODE\_DEC\_COUNT* = "m3scanner\_dec\_count"; // 2D Only** |

1. **Register IntentFilter**

|  |
| --- |
| IntentFilter filter = **new** IntentFilter();  filter.addAction(***SCANNER\_ACTION\_BARCODE***);  registerReceiver(BarcodeIntentBroadcast,filter); |

1. **Send Intent**

**Scanner Enable/Disable**

Intent Action

*SCANNER\_ACTION\_ENABLE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| SCANNER\_EXTRA\_ENABLE | 1 | Enable |
| 0 | Disable |

**Scanner Read Start**

Intent Action

*SCANNER\_ACTION\_START*

Intent Extra

*None*

**Scanner Read Stop**

Intent Action

*SCANNER\_ACTION\_CANCEL*

Intent Extra

*None*

**Getting Scanner Parameter**

Intent Action

*SCANNER\_ACTION\_PARAMETER*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “symbology” | \*Parameter number |  |
| “value” | -1 |  |

**Setting Scanner Parameter**

Intent Action

*SCANNER\_ACTION\_PARAMETER*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “symbology” | \*Parameter number |  |
| “value” | \*Value number |  |

## AIDL SDK

getAIDLPackageName method lets you get the package name

**private** String **mServiceName**;  
  
**public void** bindScannerService(){  
 Intent intent = **null**;  
 intent = **new** Intent(**"net.m3mobile.app."** + **mServiceName** + **".start"**);  
 intent.setPackage(getAIDLPackageName(**mServiceName**));  
 **boolean** bBind = bindService(intent,**this**, Context.***BIND\_AUTO\_CREATE*** | Context.***BIND\_ABOVE\_CLIENT***);  
 Log.*d*(***TAG***, **"bindScannerService "** + bBind);  
}

**private** String getAIDLPackageName(String serviceName) {  
 String packageName = **"net.m3mobile.app.scanemul"**;  
 PackageManager manager = getPackageManager();  
 List<ApplicationInfo> list = manager.getInstalledApplications(PackageManager.***GET\_META\_DATA***);  
 **for** (ApplicationInfo info : list) {  
 **try** {  
 **if**(info.**packageName**.equals(**"net.m3mobile.app."** + serviceName))  
 packageName = **"net.m3mobile.app."** + serviceName;  
 } **catch** (Exception e) {  
 Log.*e*(***TAG***, **"getPackageType Exception : "** + e.getMessage());  
 }  
 }  
 **return** packageName;  
}

|  |
| --- |
| String getAIDLPackageName(String serviceName); |

**Parameter**

serviceName

**Return**

String

**Example**

intent.setPackage(getAIDLPackageName(mServiceName));

|  |  |
| --- | --- |
| ScannerType | serviceName |
| 1D Scanner (Zebra) | **"scannerservicezebra1d"** |
| 2D Scanner (Zebra) | **"scannerservicezebra2d"** |
| 2D Scanner (Honey) | **"scannerservicehoney"** |

### 1D Scanner (Zebra)

|  |
| --- |
| void setScanner(boolean bEnable); |

Enable Scanner status or disable.

**Parameter**

bEnable

Set Scanner status.

**Return**

Void

**Example**

m1DService.setScanner(true);

|  |
| --- |
| void decodeStart(); |

Shooting the beam for barcode reading

**Parameter**

None

**Return**

void

**Example**

m1DService.decodeStart();

|  |
| --- |
| void decodeStop(); |

Stop the beam

**Parameter**

None

**Return**

void

**Example**

m1DService.decodeStop();

|  |
| --- |
| void setEndCharMode(int mode); |

Set a ending character after barcode reading

**Parameter**

mode int

1. Enter
2. SPACE
3. TAB
4. Keyboard stroke Enter
5. Keyboard stroke Space
6. Keyboard stroke tab
7. None

**Return**

void

**Example**

m1DService.setEndCharMode(0);

|  |
| --- |
| void setOutputMode(int mode); |

Set the output Mode of reading result.

**Parameter**

mode int

1. Print directly
2. Keyboard stroke
3. Copy to clipboard

**Return**

void

**Example**

m1DService.setOutputMode(1);

|  |
| --- |
| void setPrefix(String prefix); |

Set barcode prefix string.

**Parameter**

prefix String

**Return**

void

**Example**

m1DService.setPrefix("pre\_");

|  |
| --- |
| void setPostfix(String postfix); |

Set barcode postfix string.

**Parameter**

postfix String

**Return**

void

**Example**

m1DService.setPostfix("\_suffix");

|  |
| --- |
| void setSoundMode(int nMode); |

Set mode of the sound after reading.

**Parameter**

nMode int

1. None
2. BEEP
3. Ding-Dong

**Return**

void

**Example**

m1DService.setSoundMode(1);

|  |
| --- |
| void setVibration(boolean isOn); |

Set the Vibration to on and off.

**Parameter**

isOn boolean

**Return**

void

**Example**

m1DService.setVibration(true);

|  |
| --- |
| void setReadMode(int nMode); |

Set a bar-code reading mode

**Parameter**

nMode int

1. reading asynchronous
2. reading synchronous
3. reading continuous

**Return**

void

**Example**

m1DService.setReadMode(1);

|  |
| --- |
| void setScannerTriggerMode(int nMode); |

Set a mode of Scanner trigger key.

**Parameter**

nMode int

1. Enable
2. Can’t use scanner beam
3. Using only calling API.

**Return**

void

**Example**

m1DService.setScannerTriggerMode(0);

|  |
| --- |
| int setScanParameter(int num, int val); |

Set a scanner parameter.

**Parameter**

num

A number of scanner parameter for setting

val

A value for option setting.

**Return**

int

0 if a function completed successfully

**Example**

int error\_num = 0;

error\_num = m1DService.setScanParameter (3,1);

// Please refer to [Appenidx – 1D Scanner Parameters](#_1D_Symbology_Parameter) for parameter numbers and values.

|  |
| --- |
| int getScanParameter(int num); |

Get a value of a parameter.

**Parameter**

num

Parameter number

**Return**

int

the value of a specified parameter number.

**Example**

int nNumber = m1DService.getScanParameter (3)

// Please refer to [Appenidx – 1D Scanner Parameters](#_1D_Symbology_Parameter) for parameter numbers and values.

|  |
| --- |
| byte[] setParamRequest(byte[] params, byte[] val); |

Set a scanner parameter.

**Parameter**

params

Scanner parameter for setting

val

A value for option setting.

**Return**

byte[]

0 if a function completed successfully

**Example**

byte[] result;

result = m1DService.setParamRequest (new byte[]{0x03}, new byte[]{0x01});

// Please refer to [Appenidx – 1D Scanner Parameters](#_1D_Symbology_Parameter) for parameter numbers and values.

|  |
| --- |
| byte[] getParamRequest(byte[] params); |

Get a value of a parameter.

**Parameter**

params

Parameters

**Return**

byte[]

the value of a specified parameter

**Example**

byte[] values = m1DService.getParamRequest(new byte[]{0x03});

// Please refer to [Appenidx – 1D Scanner Parameters](#_1D_Symbology_Parameter) for parameter numbers and values.

### 2D Scanner (Zebra)

|  |
| --- |
| void setScanner(boolean bEnable); |

Enable Scanner status or disable.

**Parameter**

bEnable

Set Scanner status.

**Return**

Void

**Example**

m2DService.setScanner(true);

|  |
| --- |
| void decodeStart(); |

Shooting the beam for barcode reading

**Parameter**

None

**Return**

void

**Example**

m2DService.decodeStart();

|  |
| --- |
| void decodeStop(); |

Stop the beam

**Parameter**

None

**Return**

void

**Example**

m2DService.decodeStop();

|  |
| --- |
| void setEndCharMode(int mode); |

Set a ending character after barcode reading

**Parameter**

mode int

1. Enter
2. SPACE
3. TAB
4. Keyboard stroke Enter
5. Keyboard stroke Space
6. Keyboard stroke tab
7. None

**Return**

void

**Example**

m2DService.setEndCharMode(0);

|  |
| --- |
| void setOutputMode(int mode); |

Set the output Mode of reading result.

**Parameter**

mode int

1. Print directly
2. Keyboard stroke
3. Copy to clipboard

**Return**

void

**Example**

m2DService.setOutputMode(1);

|  |
| --- |
| void setPrefix(String prefix); |

Set barcode prefix string.

**Parameter**

prefix String

**Return**

void

**Example**

m2DService.setPrefix("pre\_");

|  |
| --- |
| void setPostfix(String postfix); |

Set barcode postfix string.

**Parameter**

postfix String

**Return**

void

**Example**

m2DService.setPostfix("\_suffix");

|  |
| --- |
| void setSoundMode(int nMode); |

Set mode of the sound after reading.

**Parameter**

nMode int

1. None
2. BEEP
3. Ding-Dong

**Return**

void

**Example**

m2DService.setSoundMode(1);

|  |
| --- |
| void setVibration(boolean isOn); |

Set the Vibration to on and off.

**Parameter**

isOn boolean

**Return**

void

**Example**

m2DService.setVibration(true);

|  |
| --- |
| void setReadMode(int nMode); |

Set a bar-code reading mode

**Parameter**

nMode int

1. reading asynchronous
2. reading synchronous
3. reading continuous

**Return**

void

**Example**

m2DService.setReadMode(1);

|  |
| --- |
| void setScannerTriggerMode(int nMode); |

Set a mode of Scanner trigger key.

**Parameter**

nMode int

1. Enable
2. Can’t use scanner beam
3. Using only calling API.

**Return**

void

**Example**

m2DService.setScannerTriggerMode(0);

|  |
| --- |
| int setScanParameter(int num, int val); |

Set a scanner parameter.

**Parameter**

num

A number of scanner parameter for setting

val

A value for option setting.

**Return**

int

0 if a function completed successfully

**Example**

int error\_num = 0;

error\_num = mBarCodeReader. setScanParameter (292,1);

// Please refer to [Appendix – 2D Scanner Parameter](#_2D_Symbology_Parameter) for parameter numbers and values.

|  |
| --- |
| int getScanParameter(int num); |

Get a value of a parameter.

**Parameter**

num

Parameter number

**Return**

int

the value of a specified parameter number.

**Example**

int nNumber = mBarCodeReader. getScanParameter (339)

// Please refer to [Appendix – 2D Scanner Parameter](#_2D_Symbology_Parameter) for parameter numbers and values.

### 2D Scanner (Honeywell)

**Class**

|  |
| --- |
| public class SymbolConfig {  public int symID;  public int Mask;  public int Flags;  public int MinLength;  public int MaxLength;  } |

**Fields**

Flags

Logical OR of valid flags for the given symbology

Mask

Logical OR of valid masks

MaxLength

Maximum length for valid barcode string for this symbology

MinLength

Minimum length for valid barcode string for this symbology

symID

Symbology ID

**Constant Value**

Symbology ID

|  |
| --- |
| public static final int SYM\_AZTEC = 0;  public static final int SYM\_CODABAR = 1;  public static final int SYM\_CODE11 = 2;  public static final int SYM\_CODE128 = 3;  public static final int SYM\_CODE39 = 4;  public static final int SYM\_CODE93 = 6;  public static final int SYM\_COMPOSITE = 7;  public static final int SYM\_DATAMATRIX = 8;  public static final int SYM\_EAN8 = 9;  public static final int SYM\_EAN13 = 10;  public static final int SYM\_INT25 = 11;  public static final int SYM\_MAXICODE = 12;  public static final int SYM\_MICROPDF = 13;  public static final int SYM\_PDF417 = 15;  public static final int SYM\_QR = 17;  public static final int SYM\_RSS = 18;  public static final int SYM\_UPCA = 19;  public static final int SYM\_UPCE0 = 20;  public static final int SYM\_UPCE1 = 21;  public static final int SYM\_ISBT = 22;  public static final int SYM\_BPO = 23;  public static final int SYM\_CANPOST = 24;  public static final int SYM\_AUSPOST = 25;  public static final int SYM\_IATA25 = 26;  public static final int SYM\_CODABLOCK = 27;  public static final int SYM\_JAPOST = 28;  public static final int SYM\_PLANET = 29;  public static final int SYM\_DUTCHPOST = 30;  public static final int SYM\_MSI = 31;  public static final int SYM\_TLCODE39 = 32;  public static final int SYM\_TRIOPTIC = 33;  public static final int SYM\_CODE32 = 34;  public static final int SYM\_STRT25 = 35;  public static final int SYM\_MATRIX25 = 36;  public static final int SYM\_CHINAPOST = 38;  public static final int SYM\_KOREAPOST = 39;  public static final int SYM\_TELEPEN = 40;  public static final int SYM\_COUPONCODE = 43;  public static final int SYM\_USPS4CB = 44;  public static final int SYM\_IDTAG = 45;  public static final int SYM\_GS1\_128 = 47;  public static final int SYM\_HANXIN = 48;  public static final int SYM\_POSTALS = 50;  public static final int SYM\_US\_POSTALS1 = 51;  public static final int SYMBOLOGIES = 52;  public static final int SYM\_ALL = 100; |

Masks

|  |
| --- |
| public static final int SYMBOLOGY\_ENABLE = 1;  public static final int SYMBOLOGY\_CHECK\_ENABLE = 2;  public static final int SYMBOLOGY\_CHECK\_TRANSMIT = 4;  public static final int SYMBOLOGY\_START\_STOP\_XMIT = 8;  public static final int SYMBOLOGY\_ENABLE\_FULLASCII = 32;  public static final int SYMBOLOGY\_NUM\_SYS\_TRANSMIT = 64;  public static final int SYMBOLOGY\_2\_DIGIT\_ADDENDA = 128;  public static final int SYMBOLOGY\_5\_DIGIT\_ADDENDA = 256;  public static final int SYMBOLOGY\_ADDENDA\_REQUIRED = 512;  public static final int SYMBOLOGY\_ADDENDA\_SEPARATOR = 1024;  public static final int SYMBOLOGY\_EXPANDED\_UPCE = 2048;  public static final int SYMBOLOGY\_UPCE1\_ENABLE = 4096;  public static final int SYMBOLOGY\_COMPOSITE\_UPC = 8192;  public static final int SYMBOLOGY\_AUSTRALIAN\_BAR\_WIDTH = 65536;  public static final int SYMBOLOGY\_RSE\_ENABLE = 8388608;  public static final int SYMBOLOGY\_RSL\_ENABLE = 16777216;  public static final int SYMBOLOGY\_RSS\_ENABLE = 33554432;  public static final int SYMBOLOGY\_RSX\_ENABLE\_MASK = 58720256;  public static final int SYMBOLOGY\_TELEPEN\_OLD\_STYLE = 67108864;  public static final int SYMBOLOGY\_CODABAR\_CONCATENATE = 536870912;  public static final int SYMBOLOGY\_AUS\_POST\_NUMERIC\_N\_TABLE = 1048576;  public static final int SYMBOLOGY\_AUS\_POST\_ALPHANUMERIC\_C\_TABLE = 2097152;  public static final int SYMBOLOGY\_AUS\_POST\_COMBINATION\_N\_AND\_C\_TABLES = 4194304;  public static final int SYM\_MASK\_FLAGS = 1;  public static final int SYM\_MASK\_MIN\_LEN = 2;  public static final int SYM\_MASK\_MAX\_LEN = 4;  public static final int SYM\_MASK\_ALL = 7; |

**API**

|  |
| --- |
| void setScanner(boolean bEnable); |

Enable Scanner status or disable.

**Parameter**

bEnable

Set Scanner status.

**Return**

Void

**Example**

mHService.setScanner(true);

|  |
| --- |
| void decodeStart(); |

Shooting the beam for barcode reading

**Parameter**

None

**Return**

void

**Example**

mHService.decodeStart();

|  |
| --- |
| void decodeStop(); |

Stop the beam

**Parameter**

None

**Return**

void

**Example**

mHService.decodeStop();

|  |
| --- |
| void setEndCharMode(int mode); |

Set a ending character after barcode reading

**Parameter**

mode int

0 Enter

1 SPACE

2 TAB

3 Keyboard stroke Enter

4 Keyboard stroke Space

5 Keyboard stroke tab

6 None

**Return**

void

**Example**

mHService.setEndCharMode(0);

|  |
| --- |
| void setOutputMode(int mode); |

Set the output Mode of reading result.

**Parameter**

mode int

1. Print directly
2. Keyboard stroke
3. Copy to clipboard

**Return**

void

**Example**

mHService.setOutputMode(1);

|  |
| --- |
| void setPrefix(String prefix); |

Set barcode prefix string.

**Parameter**

prefix String

**Return**

void

**Example**

mHService.setPrefix("pre\_");

|  |
| --- |
| void setPostfix(String postfix); |

Set barcode postfix string.

**Parameter**

postfix String

**Return**

void

**Example**

mHService.setPostfix("\_suffix");

|  |
| --- |
| void setSoundMode(int nMode); |

Set mode of the sound after reading.

**Parameter**

nMode int

1. None
2. BEEP
3. Ding-Dong

**Return**

void

**Example**

mHService.setSoundMode(1);

|  |
| --- |
| void setVibration(boolean isOn); |

Set the Vibration to on and off.

**Parameter**

isOn boolean

**Return**

void

**Example**

mHService.setVibration(true);

|  |
| --- |
| void setReadMode(int nMode); |

Set a bar-code reading mode

**Parameter**

nMode int

1. reading asynchronous
2. reading synchronous
3. reading continuous

**Return**

void

**Example**

mHService.setReadMode(1);

|  |
| --- |
| void setScannerTriggerMode(int nMode); |

Set a mode of Scanner trigger key.

**Parameter**

nMode int

1. Enable
2. Can’t use scanner beam
3. Using only calling API.

**Return**

void

**Example**

mHService.setScannerTriggerMode(0);

|  |
| --- |
| int getMultiReadCount(); |

Get number of barcodes to read in a single image

**Parameter**

None

**Return**

Int

Number of barcodes to read

**Example**

// get

int nMulti = 0;

nMulti = mHService.getMultiReadCount();

|  |
| --- |
| void setMultiReadCount(in int MultiReadCount); |

Set number of barcodes to read in a single image

**Parameter**

MultiReadCount

number of barcodes to read (1~20)

**Return**

void

**Example**

mHService.setMultiReadCount(1);

|  |
| --- |
| SymbolConfig getSymbologyConfig(in int symbologyID); |

Get Symbology configuration for setting symbology settings.

**Parameter**

symbologyID

ID of symbology

**Return**

SymbolConfig

SymbologyConfig to retrieve

**Example**

SymbolConfig symConfig = new SymbolConfig(0);

symConfig = mHService.getSymbologyConfig(symConfig.symID);

|  |
| --- |
| boolean setSymbologyConfig(in SymbolConfig symbol); |

Set the current configuration of the passed in structure.

**Parameter**

symbol

SymbologyConfig to set

**Return**

boolean

true if the success to set

**Example**

SymbolConfig symConfig = new SymbolConfig(4);

symConfig.Flags = SymbologyFlags.SYMBOLOGY\_ENABLE;

symConfig.MinLength = 5;

symConfig.MaxLength = 55;

mHService.setSymbologyConfig(symConfig);

## LongRange Scanner SDK

1. **Intent Constant Values**

|  |
| --- |
| ***LRSCANNER\_ACTION\_SETTING\_CHANGE* = "com.android.server.lrscannerservice.settingchange";**  ***LRSCANNER\_ACTION\_ENABLE* = "com.android.server.lrscannerservice.m3onoff";**  ***LRSCANNER\_ACTION\_START* = "android.intent.action.LRSCANNER\_BUTTON\_DOWN";**  ***LRSCANNER\_ACTION\_CANCEL* = "android.intent.action.LRSCANNER\_BUTTON\_UP";**  ***SCANNER\_ACTION\_BARCODE* = "com.android.server.scannerservice.broadcast";**  ***SCANNER\_EXTRA\_ENABLE* = "scanneronoff";**  ***SCANNER\_EXTRA\_BARCODE\_DATA* = "m3scannerdata";**  ***SCANNER\_EXTRA\_BARCODE\_CODE\_TYPE* = "m3scanner\_code\_type";**  ***SCANNER\_EXTRA\_MODULE\_TYPE* = "m3scanner\_module\_type";** |

1. **Register IntentFilter**

|  |
| --- |
| IntentFilter filter = **new** IntentFilter();  filter.addAction(***SCANNER\_ACTION\_BARCODE***);  registerReceiver(BarcodeIntentBroadcast,filter); |

1. **Send Intent**

**Scanner Enable/Disable**

Intent Action

*LRSCANNER\_ACTION\_ENABLE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| SCANNER\_EXTRA\_ENABLE | 1 | Enable |
| 0 | Disable |

**Scanner Read Start**

Intent Action

*LRSCANNER\_ACTION\_START*

Intent Extra

*None*

**Scanner Read Stop**

Intent Action

*LRSCANNER\_ACTION\_CANCEL*

Intent Extra

*None*

**Sound**

Intent Action

*LRSCANNER\_ACTION\_SETTING\_CHANGE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | description |
| “setting” | “sound” |  |
| “sound\_mode” | 0 | Sound none |
| “sound\_mode” | 1 | Beep sound |
| “sound\_mode” | 2 | Ding dong sound |

**Vibration**

Intent Action

*LRSCANNER\_ACTION\_SETTING\_CHANGE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | description |
| “setting” | “vibration” |  |
| “vibration\_value” | 1 | Vibration On |
| 0 | Vibration Off |

**Output Mode**

Intent Action

*LRSCANNER\_ACTION\_SETTING\_CHANGE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | description |
| “setting” | “output\_mode” |  |
| “output\_mode\_value” | 0 | Copy and Paste |
| 1 | Keyboard Emulation |
| 2 | None (Copy to clipboard) |

**Scanner End Character**

Intent Action

*LRSCANNER\_ACTION\_SETTING\_CHANGE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | description |
| “setting” | “end\_char” |  |
| “end\_char\_value” | 0 | Enter |
| 1 | Space |
| 2 | Tab |
| 3 | Keyboard Enter |
| 4 | Keyboard space |
| 5 | Keyboard tab |
| 6 | None |

**Prefix/Postfix**

Intent Action

*LRSCANNER\_ACTION\_SETTING\_CHANGE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | description |
| “setting” | “prefix” |  |
| “prefix\_value” | String value | Prefix value |
| “postfix\_value” | String value | Sufix value |

# UHF RFID Reader

## UHF RFID Intent SDK

### Intent Constant Values

**public static final** String ***SCANNER\_ACTION\_BARCODE*** = **"com.android.server.scannerservice.broadcast"**;

**public static final** String ***UGR\_ACTION\_ENABLE*** = **"com.android.server.ugrservice.m3onoff"**;  
**public static final** String ***UGR\_EXTRA\_ENABLE*** = **"ugronoff"**;

**public static final** String ***UGR\_ACTION\_EPC*** = **"com.android.server.ugrservice.broadcast"**;  
**public static final** String ***UGR\_EXTRA\_EPC\_DATA*** = **"m3ugrdata"**;  
**public static final** String ***UGR\_ACTION\_START*** = **"android.intent.action.M3UGR\_BUTTON\_DOWN"**;  
**public static final** String ***UGR\_ACTION\_CANCEL*** = **"android.intent.action.M3UGR\_BUTTON\_UP"**;  
**public static final** String ***UGR\_ACTION\_IS\_READING*** = **"com.android.server.ugrservice.isreading"**;  
**public static final** String ***UGR\_EXTRA\_IS\_READING*** = **"m3ugr\_is\_reading"**;

**public static final** String ***UGR\_ACTION\_GET\_SETTING*** = **"com.android.server.ugrservice.getsetting"**;  
**public static final** String ***UGR\_ACTION\_SETTING*** = **"com.android.server.ugrservice.setting"**;

**public static final** String ***UGR\_EXTRA\_POWER*** = **"m3ugr\_power"**;  
**public static final** String ***UGR\_EXTRA\_REGION\_OEM*** = **"m3ugr\_region\_oem"**;  
**public static final** String ***UGR\_EXTRA\_DLL\_VERSION*** = **"m3ugr\_dll\_version"**;  
**public static final** String ***UGR\_EXTRA\_FIRM\_VERSION*** = **"m3ugr\_firm\_version"**;  
**public static final** String ***UGR\_ACTION\_SETTING\_CHANGE*** = **"com.android.server.ugrservice.settingchange"**;

**public static final** String ***UGR\_ACTION\_MEMORY\_READING*** = **"com.android.server.ugrservice.reading"**;  
**public static final** String ***UGR\_ACTION\_MEMORY\_WRITING*** = **"com.android.server.ugrservice.writing"**;  
**public static final** String ***UGR\_ACTION\_MEMORY\_RESPONSE*** = **"com.android.server.ugrservice.memory.response"**;

**public static final** String ***UGR\_EXTRA\_MEMORY*** = **"m3ugr\_memory"**;  
**public static final** String ***UGR\_ACTION\_LOCK*** = **"com.android.server.ugrservice.lock"**;  
**public static final** String ***UGR\_ACTION\_KILL*** = **"com.android.server.ugrservice.kill"**;  
**public static final** String ***UGR\_ACTION\_LOCK\_RESPONSE*** = **"com.android.server.ugrservice.lock.response"**;  
**public static final** String ***UGR\_ACTION\_KILL\_RESPONSE*** = **"com.android.server.ugrservice.kill.response"**;

1. **Register IntentFilter**

//RFID

IntentFilter filter = **new** IntentFilter();  
filter.addAction(UGRApplication.***UGR\_ACTION\_EPC***);  
filter.addAction(UGRApplication.***UGR\_ACTION\_IS\_READING***);

registerReceiver(**resultReceiver**, filter);

//Barcode  
**mBarcodeFilter** = **new** IntentFilter();  
**mBarcodeFilter**.addAction(UGRApplication.***SCANNER\_ACTION\_BARCODE***);

registerReceiver(**mCodeReceiver**, **mBarcodeFilter**);

### Send Intent

**RFID Enable/Disable**

Intent Action

*UGR\_ACTION\_ENABLE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| UGR\_EXTRA\_ENABLE | 1 | Enable |
|  | 0 | Disable |
| module\_reset | true |  |
|  | False |  |

module\_reset : UGR\_EXTRA\_ENABLE이 1일때만 적용됩니다. true로 설정할 경우 module을 reset하도록 동작합니다.

**RFID Read Start**

Intent Action

*UGR\_ACTION\_START*

Intent Extra

None

**RFID Read Stop**

Intent Action

*UGR\_ACTION\_CANCEL*

Intent Extra

None

**Region OEM**

Intent Action

*UGR\_ACTION\_SETTING\_CHANGE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “setting” | “region\_oem” |  |
| “region\_oem\_value” | 0 | KOREA\_NEW |
|  | 1 | KOREA\_WEAK |
|  | 2 | KOREA\_OLD |
|  | 3 | USA |
|  | 4 | EURO |
|  | 5 | EURO\_NEW |
|  | 6 | JAPAN |
|  | 7 | CHINA |
|  | 8 | AUSTRALIA |
|  | 9 | BRAZIL |
|  | 10 | MALAYSIA |
|  | 11 | TAIWAN |

**Power**

Intent Action

*UGR\_ACTION\_SETTING\_CHANGE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “setting” | “power” |  |
| “power\_value” | 0 ~ 300 |  |

**Inventory Mode**

Intent Action

*UGR\_ACTION\_SETTING\_CHANGE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “setting” | “read\_mode” |  |
| “read\_mode\_value” | 0 | Overlap |
|  | 1 | Multiple |
|  | 2 | Once |

**read\_mode\_value**

Overlap : 중복여부와 관계없이 다수의 TAG를 read합니다.

Multiple : 중복을 제외한 다수의 TAG를 read합니다.

Once : 단일 TAG를 read합니다.

**Trigger Mode**

Intent Action

*UGR\_ACTION\_SETTING\_CHANGE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “setting” | “trigger\_mode” |  |
| “trigger\_mode\_value” | 0 | RFID Only |
|  | 1 | Scanner Only |
|  | 2 | Both |

**Get Setting**

Intent Action

*UGR\_ACTION\_GET\_SETTING*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “setting” | “power” |  |
|  | “region\_oem” |  |
|  | “version” |  |

**Memory Reading**

Intent Action

*UGR\_ACTION\_MEMORY\_READING*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “memory\_bank” | 0 | RESERVED |
|  | 1 | EPC |
|  | 2 | TID |
|  | 3 | USER |
| “offset” |  |  |
| “length” |  |  |
| “password” |  |  |

**Memory Writing**

Intent Action

*UGR\_ACTION\_MEMORY\_WRITING*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “memory\_bank” | 0 | RESERVED |
|  | 1 | EPC |
|  | 2 | TID |
|  | 3 | USER |
| “offset” |  |  |
| “length” |  |  |
| “data” |  |  |
| “password” |  |  |

* 기능을 수행하기 전 하나의 TAG만 지정할 수 있도록 power를 조정하십시오.
* Memory read/write는 word단위로 수행됩니다.
* Offset은 시작 위치를 가리키며 0부터 시작합니다.
* Offset, length 값은 정수입니다.

Ex) EPC값이 123456780123 인 TAG를 000056780123으로 write하려면(이때 password는 초기값이라고 가정하고 lock되지 않았을 경우를 상정)

Intent intent = new Intent(UGR\_ACTION\_MEMORY\_WRITING);

intent.putExtra(“offset”, 0);

intent.putExtra(“length”, 1);

intent.putExtra(“data”, “0000”);

intent.putExtra(“password”, “000000”);

sendBroadcast(intent);

**RFID Lock**

Intent Action

*UGR\_ACTION\_LOCK*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “acc\_permission” |  | 0 : ACCESIBLE  1 : ALWAYS ACCESSIBLE  2 : SECURED ACCESSIBLE  3 : ALWAYS NOT ACCESSIBLE  4 : NO CHANGE |
| “kill\_permission” |  |
| “epc\_permission” |  |
| “tid\_permission” |  |
| “user\_permission” |  |
| “acc\_pwd” |  |  |

**RFID Kill**

Intent Action

*UGR\_ACTION\_KILL*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “kill\_pwd” |  |  |

* 기능을 수행하기 전 하나의 TAG만 지정할 수 있도록 power를 조정하십시오.

### Receive Intent

**Inventory EPC Data**

Intent Action

*UGR\_ACTION\_EPC*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| UGR\_EXTRA\_EPC\_DATA | String |  |

* Since reading speed has been dramatically increased since UHFEmul version 1.2.3 and later, we recommend using AIDL instead of Intent Receiver

**Inventory Reading Flag**

Intent Action

*UGR\_ACTION\_IS\_READING*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| UGR\_EXTRA\_IS\_READING | boolean |  |

READ가 진행중일 때 true를 반환합니다

**Power**

Intent Action

*UGR\_ACTION\_SETTING*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | value | Description |
| “setting” | “power” |  |
| UGR\_EXTRA\_POWER | 0 ~ 300 |  |

**Region OEM**

Intent Action

*UGR\_ACTION\_SETTING*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Value | Description |
| “setting” | “region\_oem” |  |
| UGR\_EXTRA\_REGION\_OEM | 0 | KOREA\_NEW |
|  | 1 | KOREA\_WEAK |
|  | 2 | KOREA\_OLD |
|  | 3 | USA |
|  | 4 | EURO |
|  | 5 | EURO\_NEW |
|  | 6 | JAPAN |
|  | 7 | CHINA |
|  | 8 | AUSTRALIA |
|  | 9 | BRAZIL |
|  | 10 | MALAYSIA |
|  | 11 | TAIWAN |

**Version**

Intent Action

*UGR\_ACTION\_SETTING*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | value | Description |
| “setting” | “version” |  |
| UGR\_EXTRA\_DLL\_VERSION |  |  |
| UGR\_EXTRA\_FIRM\_VERSION |  |  |

**Access Response**

Intent Action

*UGR\_ACTION\_MEMORY\_RESPONSE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| UGR\_EXTRA\_MEMORY | String |  |
| “success” | Boolean |  |

read/write에 대한 성공여부를 반환합니다.

**Lock/Kill Response**

Intent Action

*UGR\_ACTION\_LOCK\_RESPONSE, UGR\_ACTION\_KILL\_RESPONSE*

Intent Extra

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| “success” | Boolean |  |

lock/kill에 대한 성공여부를 반환합니다.

## UHF RFID AIDL Callback SDK

* Since reading speed has been dramatically increased since UHFEmul version 1.2.3 and later, we recommend using AIDL instead of Intent Receiver

// Disable inventory data intent

Intent intent = new Intent(UGR\_ACTION\_SETTING\_CHANGE);

intent.putExtra("setting", "intent\_enable");

intent.putExtra("intent\_enable\_value", false);

sendOrderedBroadcast(intent, null);

|  |
| --- |
| boolean registerUHFServiceCallback(IUHFServiceCallback callback); |

Register uhf emul callback.

**Parameter**

callback

Callback interface

**Return**

boolean

**Example**

boolean bSuccess = m\_remoteSvc.registerUHFServiceCallback(m\_remoteCallback);

IUHFServiceCallback m\_remoteCallback = new IUHFServiceCallback.Stub() {

@Override

public void onInventory(String epc) throws RemoteException {

// Handle epc data from UI thread

}

@Override

public void onIsReading(boolean isReading) throws RemoteException {

// You can check the read status

}

};

|  |
| --- |
| boolean unregisterUHFServiceCallback(IUHFServiceCallback callback); |

Unregister uhf emul callback.

**Parameter**

callback

Callback interface

**Return**

boolean

**Example**

boolean bSuccess = m\_remoteSvc.unregisterUHFServiceCallback(m\_remoteCallback);

## UHF\_DEMO source code 해설서

Intent를 사용하는 방식이 ResultWindow.java에, AIDL을 사용하는 방식은 ResultWindow\_aidl.java에 각각 구현되어 있습니다.

Intent filter와 AIDL callback, Broadcast receiver등의 차이가 있으므로 요주의 입니다.

또한 1.2.3 이상의 버전을 사용한다면 AIDL로 구현하는 것이 매우 좋습니다.

**register broadcast receiver**

// inventory 결과값과 Key입력을 받기위한 receiver입니다.

**resultReceiver** = **new** ResultWindowReceiver();

// Intent 방식으로 결과값을 얻을 때만 호출하십시오  
IntentFilter filter = **new** IntentFilter();  
filter.addAction(UGRApplication.***UGR\_ACTION\_EPC***);  
filter.addAction(UGRApplication.***UGR\_ACTION\_IS\_READING***);

registerReceiver(**resultReceiver**, filter);

// 스캐너를 활용한 barcode값을 얻기 위한 receiver입니다. RFID TAG만 필요한 경우 생략할 수 있습니다.  
**mCodeReceiver** = **new** BarcodeReceiver();  
**mBarcodeFilter** = **new** IntentFilter();  
**mBarcodeFilter**.addAction(UGRApplication.***SCANNER\_ACTION\_BARCODE***);  
registerReceiver(**mCodeReceiver**, **mBarcodeFilter**);

**AIDL service connection 구현**

**if**(**m\_UHFSvcConnection** == **null**) {  
 **m\_UHFSvcConnection** = **new** ServiceConnection() {  
 @Override  
 **public void** onServiceConnected(ComponentName name, IBinder service) {  
 **m\_remoteSvc** = IUGRTestService.Stub.*asInterface*(service);  
 Log.*d*(ResultWindow\_aidl.**class**.getSimpleName(), **"Service is Connected"**);  
 **try** {  
 **if**(**m\_remoteSvc**.registerUHFServiceCallback(**m\_remoteCallback**))  
 Log.*d*(ResultWindow\_aidl.**class**.getSimpleName(), **"Callback was registered"**);  
 **else** Log.*d*(ResultWindow\_aidl.**class**.getSimpleName(), **"Registering Callback was failed"**);  
 } **catch** (RemoteException e) {  
 e.printStackTrace();  
 }

// Service 정상적으로 연결됐을 때 Enable합니다  
 RFIDEnable(**true**);  
  
 }  
  
 @Override  
 **public void** onServiceDisconnected(ComponentName name) {  
 **m\_remoteSvc** = **null**;  
 Log.*d*(ResultWindow\_aidl.**class**.getSimpleName(), **"Service is Disconnected"**);  
 }  
 };  
}

**AIDL callback 구현**

**m\_remoteCallback** = **new** IUHFServiceCallback.Stub() {  
 @Override  
 **public void** onInventory(String epc) **throws** RemoteException {  
 **UIHandler**.sendMessage(**UIHandler**.obtainMessage(UGRApplication.***MSG\_HANDLE\_DATA***, epc));  
 }  
  
 @Override  
 **public void** onIsReading(**boolean** isReading) **throws** RemoteException {  
 **mIsReading** = isReading;  
 **UIHandler**.sendMessage(**UIHandler**.obtainMessage(UGRApplication.***MSG\_IS\_READING***));  
 }  
};

**Bind Service**

Intent intent = **new** Intent(**"net.m3mobile.ugremul.start"**);  
intent.setPackage(**"net.m3mobile.ugremul"**);  
bindService(intent,**m\_UHFSvcConnection**, Context.***BIND\_AUTO\_CREATE***);

**Intent disable**

// AIDL callback을 사용할 때는 intent로 값을 받지않으므로 intent disable 합니다

intent = **new** Intent(UGRApplication.***UGR\_ACTION\_SETTING\_CHANGE***);  
intent.putExtra(**"setting"**, **"intent\_enable"**);  
intent.putExtra(**"intent\_enable\_value"**, **false**);  
sendOrderedBroadcast(intent, **null**);

**Set read mode**

// list view 등으로 여러 값을 한 번에 받을 경우 read mode를 0(Overlap)으로 설정합니다.

Intent intent = **new** Intent(UGRApplication.***UGR\_ACTION\_SETTING\_CHANGE***);  
intent.putExtra(**"setting"**, **"read\_mode"**);  
intent.putExtra(**"read\_mode\_value"**, 0);  
sendOrderedBroadcast(intent, **null**);

**Set trigger mode**

// trigger mode의 기본값은 2(Both)입니다. RFID만 사용할 때는 0, Scanner만 사용할 때는 1로 설정하고 특별한 경우가 아닌 경우 기본값 2로 되돌려 둬야합니다.(onDestroy, onResume등에서 2로 설정하십시오)

intent = **new** Intent(UGRApplication.***UGR\_ACTION\_SETTING\_CHANGE***);  
intent.putExtra(**"setting"**, **"trigger\_mode"**);  
intent.putExtra(**"trigger\_mode\_value"**, **2**);  
sendOrderedBroadcast(intent, **null**);

**Unregister broadcast receiver**

// onDestroy등에서 구현하십시오.

unregisterReceiver(**resultReceiver**);  
unregisterReceiver(**mCodeReceiver**);

**Trigger mode control**

// Demo app에서는 trigger mode를 radio button으로 구현하였습니다.

// OnClickListener이므로 클릭하기 이전, 즉 화면에 진입했을 때는 호출되지않으니 요주의 입니다.

RadioButton.OnClickListener **OnTriggerClickListener2** = **new** RadioButton.OnClickListener() {  
 @Override  
 **public void** onClick(View view) {  
 Intent triggerIntent = **new** Intent(UGRApplication.***UGR\_ACTION\_SETTING\_CHANGE***);  
 triggerIntent.putExtra(**"setting"**, **"trigger\_mode"**);  
  
 **switch** (view.getId()) {  
 **case** R.id.***radio\_trigger\_rfid***:  
 triggerIntent.putExtra(**"trigger\_mode\_value"**, 0);  
 **mLastTriggerMode** = 0;  
 **break**;  
 **case** R.id.***radio\_trigger\_scanner***:  
 triggerIntent.putExtra(**"trigger\_mode\_value"**, 1);  
 **mLastTriggerMode** = 1;  
 **break**;  
 **case** R.id.***radio\_trigger\_both***:  
 triggerIntent.putExtra(**"trigger\_mode\_value"**, 2);  
 **mLastTriggerMode** = 2;  
 **break**;  
 }  
  
 sendBroadcast(triggerIntent, **null**);  
 }  
};

**Inventory start/stop**

// 실제 소스코드에는 타이머와 관련된 코드가 있으나 생략할 수 있습니다.

**private void** inventory(**boolean** bStart) {  
 Intent intent;  
 **if**(bStart) {  
 intent = **new** Intent(UGRApplication.***UGR\_ACTION\_START***, **null**);   
 } **else** {  
 intent = **new** Intent(UGRApplication.***UGR\_ACTION\_CANCEL***, **null**);   
 }  
 sendOrderedBroadcast(intent, **null**);  
}

**RFID Emul enable/disable**

**private void** RFIDEnable(**boolean** bOn) {  
 **int** nExtra;  
 **if**(bOn)  
 nExtra = 1;  
 **else** nExtra = 0;  
 Intent intent = **new** Intent(UGRApplication.***UGR\_ACTION\_ENABLE***, **null**);  
 intent.putExtra(UGRApplication.***UGR\_EXTRA\_ENABLE***, nExtra);  
 intent.putExtra(**"module\_reset"**, bOn);  
 sendOrderedBroadcast(intent, **null**);  
}

# Appendix – Scanner Parameters

## 1D Symbology Parameter

**Scan Angle**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 191 | \*2 | Wide Angle (47°) |
|  | 0 | Narrow Angle (10°) |
|  | 1 | Medium Angle (35°) |

NOTE Narrow scan angle is not supported by Class 1 scan engines.

This parameter sets the scan angle to narrow, medium, or wide.

**Timeout Between Decodes, Same Symbol**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 137 | \*10 | Timeout Between Same Symbol |
|  |  |  |

In **Continuous** and **Blink** triggering modes and when **Continuous Bar Code Read** is enabled, this parameter sets the minimum time that must elapse before the scan engine decodes a second bar code identical to one just decoded. This reduces the risk of accidently scanning the same symbol twice. It is programmable in 0.1 second increments from 0.0 to 9.9 seconds.

NOTE The Timeout between Decodes, Same Symbol must be greater than the Timeout Between Decodes, Different Symbols.

**Timeout Between Decodes, Different Symbols**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 144 | \*2 | Timeout Between Decodes, Different Symbols |
|  |  |  |

In **Continuous** and **Blink** triggering modes and when **Continuous Bar Code Read** is enabled, this parameter sets the minimum time that must elapse before the scan engine decodes a second bar code different from the one just decoded. It is programmable in 0.1 second increments from 0.1 to 9.9 seconds.

NOTE The Timeout between Decodes, Different Symbols cannot be greater than or equal to the Timeout Between Decodes, Same Symbol.

**Linear Code Type Security Level**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 78 | \*1 | Linear Security Level 1 |
|  | 2 | Linear Security Level 2 |
|  | 3 | Linear Security Level 3 |
|  | 4 | Linear Security Level 4 |

The SE-965HP-X20XR offers four levels of decode security for linear code types (e.g. Code 39, Interleaved 2 of 5). Select higher security levels for decreasing levels of bar code quality. As security levels increase, the scan engine’s aggressiveness decreases.

Select the security level appropriate for your bar code quality

**Linear Security Level 1**

The following code types must be successfully read twice before being decoded

|  |  |
| --- | --- |
| Code Type | Length |
| Codabar | All |
| MSI | 4 or less |
| D 2 of 5 | 8 or less |
| I 2 of 5 | 8 or less |

**Linear Security Level 2**

All code types must be successfully read twice before being decoded.

**Linear Security Level 3**

Code types other than the following must be successfully read twice before being decoded. The following codes must be read three times

|  |  |
| --- | --- |
| Code Type | Length |
| MSI | 4 or less |
| D 2 of 5 | 8 or less |
| I 2 of 5 | 8 or less |

**Linear Security Level 4**

All code types must be successfully read three times before being decoded.

**Bi-directional Redundancy**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 67 | \*0 | Disable Bi-directional Redundancy |
|  | 1 | Enable Bi-directional Redundancy |

UPC/EAN

**UPC-A**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 1 | \*1 | Enable UPC-A |
|  | 0 | Disable UPC-A |

**Enable/Disable UPC-E**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 2 | \*1 | Enable UPC-E |
|  | 0 | Disable UPC-E |

**Enable/Disable UPC-E1**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 12 | \*0 | Disable UPC-E1 |
|  | 1 | Enable UPC-E1 |

**NOTE** UPC-E1 is not a UCC (Uniform Code Council) approved symbology

**Enable/Disable EAN-8/JAN-8**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 4 | \*1 | Enable EAN-8/JAN-8 |
|  | 0 | Disable EAN-8/JAN-8 |

**Enable/Disable EAN-13/JAN-13**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 3 | \*1 | Enable EAN-13/JAN-13 |
|  | 0 | Disable EAN-13/JAN-13 |

**Enable/Disable Bookland EAN**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 83 | \*0 | Ignore Supplementals |
|  | 1 | Decode UPC/EAN/JAN Only With Supplementals |
|  | 2 | Autodiscriminate UPC/EAN/JAN Supplementals |
|  | 4 | Enable 378/379 Supplemental Mode |
|  | 5 | Enable 978/979 Supplemental Mode |
|  | 7 | Enable 977 Supplemental Mode |
|  | 6 | Enable 414/419/434/439 Supplemental Mode |
|  | 8 | Enable 491 Supplemental Mode |
|  | 3 | Enable Smart Supplemental Mode |
|  | 9 | Supplemental User-Programmable Type 1 |
|  | 10 | Supplemental User-Programmable Type 1 and 2 |
|  | 11 | Smart Supplemental Plus User-Programmable 1 |
|  | 12 | Smart Supplemental Plus User-Programmable 1 and 2 |

Supplementals are bar codes appended according to specific format conventions (e.g., UPC A+2, UPC E+2, EAN 13+2). The following options are available:

* If you select Decode UPC/EAN/JAN with Supplementals, the engine only decodes UPC/EAN symbols with supplemental characters, and ignores symbols without supplementals.
* If you select Ignore UPC/EAN/JAN Supplementals, and the engine is presented with a UPC/EAN plus supplemental symbol, the engine decodes UPC/EAN and ignores the supplemental characters.
* If you select Autodiscriminate UPC/EAN/JAN Supplementals, the engine decodes UPC/EAN symbols with supplemental characters immediately. If the symbol does not have a supplemental, the engine must decode the bar code the number of times set via Decode UPC/EAN Supplemental Redundancy before transmitting its data to confirm that there is no supplemental.
* If you select one of the following Supplemental Mode options, the engine immediately transmits EAN-13 bar codes starting with that prefix that have supplemental characters. If the symbol does not have a supplemental, the engine must decode the bar code the number of times set via Decode UPC/EAN Supplemental Redundancy before transmitting its data to confirm that there is no supplemental. The engine transmits UPC/EAN bar codes that do not have that prefix immediately.
* Enable 378/379 Supplemental Mode.
* Enable 978/979 Supplemental Mode

NOTE If you select 978/979 Supplemental Mode and are scanning Bookland EAN bar codes, see Enable/Disable Bookland EAN to enable Bookland EAN, and select a format using Bookland ISBN Format.

* Enable 977 Supplemental Mode.
* Enable 414/419/434/439 Supplemental Mode.
* Enable 491 Supplemental Mode.
* Enable Smart Supplemental Mode - applies to EAN-13 bar codes starting with any prefix listed previously
* Supplemental User-Programmable Type 1 - applies to EAN-13 bar codes starting with a 3-digit user-defined prefix. Set this 3-digit prefix using User-Programmable Supplementals.
* Supplemental User-Programmable Type 1 and 2 - applies to EAN-13 bar codes starting with either of two 3-digit user-defined prefixes. Set the 3-digit prefixes using User-Programmable Supplementals.
* Smart Supplemental Plus User-Programmable 1 - applies to EAN-13 bar codes starting with any prefix listed previously or the user-defined prefix set using User-Programmable Supplementals.
* Smart Supplemental Plus User-Programmable 1 and 2 - applies to EAN-13 bar codes starting with any prefix listed previously or one of the two user-defined prefixes set using User-Programmable Supplementals.

NOTE To minimize the risk of invalid data transmission, select either to decode or ignore supplemental characters.

**Decode UPC/EAN/JAN Supplementals**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 16 | \*0 | Disable Bookland EAN |
|  | 1 | Enable Bookland EAN |

**Decode UPC/EAN Supplemental Redundancy**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 80 | \*7 |  |

With Autodiscriminate UPC/EAN Supplementals selected, this option adjusts the number of times a symbol without supplementals are decoded before transmission. The range is from 2 to 30 times. Five or above is recommended when decoding a mix of UPC/EAN symbols with and without supplementals, and the autodiscriminate option is selected.

**Transmit UPC-A Check Digit**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 40 | \*1 | Transmit UPC-A Check Digit |
|  | 0 | Do Not Transmit UPC-A Check Digit |

The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate bar code below to transmit the bar code data with or without the UPC-A check digit. It is always verified to guarantee the integrity of the data.

**Transmit UPC-E Check Digit**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 41 | \*1 | Transmit UPC-E Check Digit |
|  | 0 | Do Not Transmit UPC-E Check Digit |

The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate bar code below to transmit the bar code data with or without the UPC-E check digit. It is always verified to guarantee the integrity of the data.

**Transmit UPC-E1 Check Digit**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 42 | \*1 | Transmit UPC-E1 Check Digit |
|  | 0 | Do Not Transmit UPC-E1 Check Digit |

The check digit is the last character of the symbol used to verify the integrity of the data. Scan the appropriate bar code below to transmit the bar code data with or without the UPC-E1 check digit. It is always verified to guarantee the integrity of the data

**UPC-A Preamble**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 34 | \*1 | System Character (<SYSTEM CHARACTER>  <DATA>) |
|  | 0 | No Preamble (<DATA>) |
|  | 2 | System Character & Country Code  (< COUNTRY CODE> <SYSTEM CHARACTER>  <DATA>) |

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-A preamble to the host device: transmit System Character only, transmit System Character and Country Code (“0” for USA), and transmit no preamble. Select the appropriate option to match the host system.

**UPC-E Preamble**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 35 | \*1 | \*System Character  (<SYSTEM CHARACTER> <DATA>) |
|  | 0 | No Preamble (<DATA>) |
|  | 2 | System Character & Country Code  (< COUNTRY CODE> <SYSTEM CHARACTER>  <DATA>) |

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-E preamble to the host device: transmit System Character only, transmit System Character and Country Code (“0” for USA), and transmit no preamble. Select the appropriate option to match the host system.

**UPC-E1 Preamble**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 36 | \*1 | \*System Character  (<SYSTEM CHARACTER> <DATA>) |
|  | 0 | No Preamble (<DATA>) |
|  | 2 | System Character & Country Code  (< COUNTRY CODE> <SYSTEM CHARACTER>  <DATA>) |

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-E1 preamble to the host device: transmit System Character only, transmit System Character and Country Code (“0” for USA), and transmit no preamble. Select the appropriate option to match the host system.

**Convert UPC-E to UPC-A**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 37 | \*0 | Do Not Convert UPC-E to UPC-A (Disable) |
|  | 1 | Convert UPC-E to UPC-A (Enable) |

Enable this 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).

When disabled, UPC-E decoded data is transmitted as UPC-E data, without conversion.

**Convert UPC-E1 to UPC-A**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 38 | \*0 | Do Not Convert UPC-E1 to UPC-A (Disable) |
|  | 1 | Convert UPC-E1 to UPC-A (Enable) |

Enable this 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).

When disabled, UPC-E1 decoded data is transmitted as UPC-E1 data, without conversion.

**EAN-8/JAN-8 Extend**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 39 | \*0 | Disable EAN/JAN Zero Extend |
|  | 1 | Enable EAN/JAN Zero Extend |

When enabled, this parameter adds five leading zeros to decoded EAN-8 symbols to make them compatible in format to EAN-13 symbols.

When disabled, EAN-8 symbols are transmitted as is.

**UPC/EAN Security Level**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 77 | \*1 - UPC/EAN Security Level 1 | As bar code quality levels diminish, certain characters become prone to misdecodes before others (i.e., 1, 2, 7, 8). If misdecodes of poorly printed bar codes occur, and the misdecodes are limited to these characters, select this security level. |
|  | 0 - UPC/EAN Security Level 0 | This setting allows the scan engine to operate in its most aggressive state, while providing sufficient security in decoding most “in-spec” UPC/EAN bar codes. |
|  | 2 - UPC/EAN Security Level 2 | If misdecodes of poorly printed bar codes occur, and the misdecodes are not limited to characters 1, 2, 7, and 8, select this security level. |
|  | 3 - UPC/EAN Security Level 3 | If misdecodes still occur after selecting Security Level 2, select this security level. Be advised, selecting this option is an extreme measure against mis-decoding severely out of spec bar codes. Selection of this level of security significantly impairs the decoding ability of the scan engine. If this level of security is necessary, try to improve the quality of the bar codes. |

The SE965HP offers four levels of decode security for UPC/EAN bar codes. Increasing levels of security are provided for decreasing levels of bar code quality. Select higher levels of security for decreasing levels of bar code quality. Increasing security decreases the scan engine’s aggressiveness, so choose only that level of security necessary for the application.

**UCC Coupon Extended Code**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 85 | \*0 | Disable UCC Coupon Extended Code |
|  | 1 | Enable UCC Coupon Extended Code |

The UCC Coupon Extended Code is an additional bar code adjacent to a UCC Coupon Code. To enable or disable UCC Coupon Extended Code, scan the appropriate bar code below.

**Code 128**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 8 | \*1 | Enable Code 128 |
|  | 0 | Disable Code 128 |

**Set Lengths for Code 128**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 128 to any length, one or two discrete lengths, or lengths within a specific range

NOTE When setting lengths for different bar code types, enter a leading zero for single digit numbers.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 209 | Any Length | Length1 |
| 210 | Length2 |

**GS1-128 (formerly UCC/EAN-128)**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 14 | \*1 | Enable GS1-128 |
|  | 0 | Disable GS1-128 |

**ISBT 128**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 84 | \*1 | Enable ISBT 128 |
|  | 0 | Disable ISBT 128 |

**ISBT Concatenation Redundancy**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 223 | \*10 |  |

If you set ISBT Concatenation to Autodiscriminate, use this parameter to set the number of times the engine must decode an ISBT symbol before determining that there is no additional symbol.

**Code 39**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 0 | \*1 | Enable Code 39 |
|  | 0 | Disable Code 39 |

**Trioptic Code 39**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 13 | \*0 | Disable Trioptic Code 39 |
|  | 1 | Enable Trioptic Code 39 |

NOTE Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously. If an error beep sounds when enabling Trioptic Code 39, disable Code 39 Full ASCII and try again.

**Convert Code 39 to Code 32 (Italian Pharma Code)**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 86 | \*0 | Disable Convert Code 39 to Code 32 |
|  | 1 | Enable Convert Code 39 to Code 32 |

Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry. Scan the appropriate bar code below to enable or disable converting Code 39 to Code 32.

NOTE Code 39 must be enabled for this parameter to function

**Code 32 Prefix**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 231 | \*0 | Disable Code 32 Prefix |
|  | 1 | Enable Code 32 Prefix |

Enable this parameter to add the prefix character “A” to all Code 32 bar codes. Convert Code 39 to Code 32 (Italian Pharma Code) must be enabled for this parameter to function.

**Set Lengths for Code 39**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 18 | Length within Range:  2 - 55 | Length1 |
| 19 | Length2 |

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 39 to any length, one or two discrete lengths, or lengths within a specific range. If Code 39 Full ASCII is enabled, Length Within a Range or Any Length are the preferred options

NOTE When setting lengths for different bar code types by scanning single digit numbers, single digit numbers must always be preceded by a leading zero.

**Code 39 Check Digit Verification**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 48 | \*0 | Disable Code 39 Check Digit |
|  | 1 | Enable Code 39 Check Digit |

When this feature is enabled, the scan engine checks the integrity of all Code 39 symbols to verify that the data complies with specified check digit algorithm. Only those Code 39 symbols which include a modulo 43 check digit are decoded. Only enable this feature if your Code 39 symbols contain a module 43 check digit.

**Transmit Code 39 Check Digit**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 43 | \*0 | Do Not Transmit Code 39 Check Digit (Disable) |
|  | 1 | Transmit Code 39 Check Digit (Enable) |

Scan a bar code below to transmit Code 39 data with or without the check digit.

NOTE Code 39 Check Digit Verification must be enabled for this parameter to function

**Code 39 Full ASCII Conversion**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 17 | \*0 | Disable Code 39 Full ASCII |
|  | 1 | Enable Code 39 Full ASCII |

NOTE Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously. If you get an error beep when enabling Code 39 Full ASCII, disable Trioptic Code 39 and try again.

**Code 93**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 9 | \*0 | Disable Code 93 |
|  | 1 | Enable Code 93 |

**Set Lengths for Code 93**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 26 | Length within Range:  4 - 55 | Length1 |
| 27 | Length2 |

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for Code 93 may be set for any length, one or two discrete lengths, or lengths within a specific range. To set lengths via serial commands, see Setting Code Lengths Via Serial Commands.

**Code 11**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 10 | \*0 | Disable Code 11 |
|  | 1 | Enable Code 11 |

**Set Lengths for Code 11**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 28 | Length within Range:  4 - 55 | Length1 |
| 29 | Length2 |

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Set lengths for Code 11 to any length, one or two discrete lengths, or lengths within a specific range.

**Code 11 Check Digit Verification**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 52 | \*0 | Disable |
|  | 1 | One Check Digit |
|  | 2 | Two Check Digits |

This feature allows the scan engine to check the integrity of all Code 11 symbols to verify that the data complies with the specified check digit algorithm. This selects the check digit mechanism for the decoded Code 11 bar code. The options are to check for one check digit, check for two check digits, or disable the feature.

To enable this feature, scan the bar code below corresponding to the number of check digits encoded in the Code 11 symbols.

**Transmit Code 11 Check Digits**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 47 | \*0 | Do Not Transmit Code 11 Check Digit(s) (Disable) |
|  | 1 | Transmit Code 11 Check Digit(s) (Enable) |

This feature selects whether or not to transmit the Code 11 check digit(s).

NOTE Code 11 Check Digit Verification must be enabled for this parameter to function.

**Interleaved 2 of 5**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 6 | \*1 | Enable Interleaved 2 of 5 |
|  | 0 | Disable Interleaved 2 of 5 |

To enable or disable Interleaved 2 of 5, scan the appropriate bar code below, and select an Interleaved 2 of 5 length from the following pages.

**Set Lengths for Interleaved 2 of 5**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 22 | One Length: 14 | Length1 |
| 23 | Length2 |

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for I 2 of 5 may be set for any length, one or two discrete lengths, or lengths within a specific range. To set lengths via serial commands, see Setting Code Lengths Via Serial Commands.

NOTE When setting lengths, include a leading zero for single digit numbers.

**I 2 of 5 Check Digit Verification**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 49 | \*0 | Disable |
|  | 1 | USS Check Digit |
|  | 2 | OPCC Check Digit |

When enabled, this parameter checks the integrity of an I 2 of 5 symbol to ensure it complies with a specified algorithm, either USS (Uniform Symbology Specification), or OPCC (Optical Product Code Council).

**Transmit I 2 of 5 Check Digit**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 44 | \*0 | Do Not Transmit I 2 of 5 Check Digit (Disable) |
|  | 1 | Transmit I 2 of 5 Check Digit (Enable) |

Scan the appropriate bar code below to transmit I 2 of 5 data with or without the check digit.

**Convert I 2 of 5 to EAN-13**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 82 | \*0 | Do Not Convert I 2 of 5 to EAN-13 (Disable) |
|  | 1 | Convert I 2 of 5 to EAN-13 (Enable) |

Enable this parameter to convert 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.

**Discrete 2 of 5**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 5 | \*0 | Disable Discrete 2 of 5 |
|  | 1 | Enable Discrete 2 of 5 |

**Set Lengths for Discrete 2 of 5**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 20 | One Length: 12 | Length1 |
| 21 | Length2 |

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for D 2 of 5 may be set for any length, one or two discrete lengths, or lengths within a specific range. To set lengths via serial commands, see Setting Code Lengths Via Serial Commands.

**Codabar**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 7 | \*0 | Disable Codabar |
|  | 1 | Enable Codabar |

**Set Lengths for Codabar**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 24 | Length within Range:  5 - 55 | Length1 |
| 25 | Length2 |

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Lengths for Codabar may be set for any length, one or two discrete lengths, or lengths within a specific range. To set lengths via serial commands, see Setting Code Lengths Via Serial Commands.

**CLSI Editing**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 54 | \*0 | Disable CLSI Editing |
|  | 1 | Enable CLSI Editing |

When enabled, 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.

NOTE Symbol length does not include start and stop characters

**NOTIS Editing**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 55 | \*0 | Disable NOTIS Editing |
|  | 1 | Enable NOTIS Editing |

When enabled, this parameter strips the start and stop characters from decoded Codabar symbol

**MSI**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 11 | \*0 | Disable MSI |
|  | 1 | Enable MSI |

**Set Lengths for MSI**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 30 | Length within Range:  6 - 55 | Length1 |
| 31 | Length2 |

The length of a code refers to the number of characters (i.e., human readable characters) the code contains, and includes check digits. Lengths for MSI can be set for any length, one or two discrete lengths, or lengths within a specific range.

**MSI Check Digits**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 50 | \*0 | One MSI Check Digit |
|  | 1 | Two MSI Check Digits |

These check digits at the end of the bar code verify the integrity of the data. At least one check digit is always required. Check digits are not automatically transmitted with the data. If two check digits are selected, also select an MSI Check Digit Algorithm

**Transmit MSI Check Digit**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 46 | \*0 | Do Not Transmit MSI Check Digit(s) (Disable) |
|  | 1 | Transmit MSI Check Digit(s) (Enable) |

**MSI Check Digit Algorithm**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 51 | \*1 | MOD 10/MOD 10 |
|  | 0 | MOD 10/MOD 11 |

Two algorithms are possible for the verification of the second MSI check digit. Select the bar code below corresponding to the algorithm used to encode the check digit.

**Transmit Code ID Character**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 45 | \*0 | None |
|  | 1 | AIM Code ID Character |
|  | 2 | Symbol Code ID Character |

A code ID character identifies the code type of a scanned bar code. This can be useful when decoding more than one code type. The code ID character is inserted between the prefix character (if selected) and the decoded symbol.

Select no code ID character, a Symbol Code ID character, or an AIM Code ID character. For Symbol and AIM code ID characters

## 2D Symbology Parameter

In this section, \* indicates the default option.

**UPC-A**

Enable or disable UPC-A

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 1 | \*1 | Enable UPC-A |
|  | 0 | Disable UPC-A |

**UPC-E**

Enable or disable UPC-E

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 2 | \*1 | Enable UPC-E |
|  | 0 | Disable UPC-E |

**UPC-E1**

Enable or disable UPC-E1. UPC-E1 is disabled by default

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 12 | \*0 | Enable UPC-E1 |
|  | 1 | Disable UPC-E1 |

NOTE UPC-E1 is not a UCC (Uniform Code Council) approved symbology.

**EAN-8/JAN 8**

Enable or disable EAN-8/JAN-8

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 4 | \*1 | Enable EAN-8/JAN-8 |
|  | 0 | Disable EAN-8/JAN-8 |

**EAN-13/JAN 13**

Enable or disable EAN-13/JAN-13

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 3 | \*1 | Enable EAN-13/JAN-13 |
|  | 0 | Disable EAN-13/JAN-13 |

**Bookland EAN**

Enable or disable Bookland EAN:

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 83 | \*0 | Disable Bookland EAN |
|  | 1 | Enable Bookland EAN |

**NOTE** If you enable Bookland EAN, select a Bookland ISBN Format. Also select either Decode UPC/EAN Supplementals, Autodiscriminate UPC/EAN Supplementals, or Enable 978/979 Supplemental Mode in Decode UPC/EAN/JAN Supplementals.

**Decode UPC/EAN/JAN Supplementals**

Supplementals are bar codes appended according to specific format conventions (e.g., UPC A+2, UPC E+2, EAN 13+2). Select one of the following options

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 16 | \*0 | Ignore UPC/EAN with Supplementals |
|  | 1 | Decode UPC/EAN with Supplementals |
|  | 2 | Autodiscriminate UPC/EAN Supplementals |
|  | 4 | Enable 378/379 Supplemental Mode |
|  | 5 | Enable 978/979 Supplemental Mode |
|  | 7 | Enable 977 Supplemental Mode |
|  | 6 | Enable 414/419/434/439 Supplemental Mode |
|  | 8 | Enable 491 Supplemental Mode |
|  | 3 | Enable Smart Supplemental Mode |
|  | 9 | Supplemental User-Programmable Type 1 |
|  | 10 | Supplemental User-Programmable Type 1 and 2 |
|  | 11 | Smart Supplemental Plus User-Programmable 1 |
|  | 12 | Smart Supplemental Plus User-Programmable 1 and 2 |

**User-Programmable Supplementals**

If you selected a Supplemental User-Programmable option from Decode UPC/EAN/JAN Supplementals, select User-Programmable Supplemental 1 to set the 3-digit prefix. Select User-Programmable Supplemental 2 to set a second 3-digit prefix.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 579 |  | Supplemental 1 |
| 580 |  | Supplemental 2 |

**UPC/EAN/JAN Supplemental Redundancy**

With Autodiscriminate UPC/EAN/JAN Supplementals selected, this option adjusts the number of times a symbol without supplementals is decoded before transmission. The range is from two to 30 times. Five or above is recommended when decoding a mix of UPC/EAN/JAN symbols with and without supplementals, and the autodiscriminate option is selected. The default is set at 10.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 80 | \*10 |  |
|  |  |  |

**UPC/EAN/JAN Supplemental AIM ID Format**

Select an output format when reporting UPC/EAN/JAN bar codes with Supplementals with Transmit Code ID Character set to AIM Code ID Character

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 672 | \*1 | Combined |
|  | **0** | Separate |
|  | **2** | Separate |

**UPC Reduced Quiet Zone**

Enable or disable decoding UPC bar codes with reduced quiet zones. If you select Enable, select a 1D Quiet Zone Level.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 1289 | \*0 | Disable UPC Reduced Quiet Zone |
|  | 1 | Enable UPC Reduced Quiet Zone |

**Transmit UPC-A Check Digit**

The check digit is the last character of the symbol used to verify the integrity of the data. Select whether to transmit the bar code data with or without the UPC-A check digit. It is always verified to guarantee the integrity of the data.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 40 | \*1 | Transmit UPC-A Check Digit |
|  | 0 | Do Not Transmit UPC-A Check Digit |

**Transmit UPC-E Check Digit**

The check digit is the last character of the symbol used to verify the integrity of the data. Select whether to transmit the bar code data with or without the UPC-E check digit. It is always verified to guarantee the integrity of the data.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 41 | \*1 | Transmit UPC-E Check Digit |
|  | 0 | Do Not Transmit UPC-E Check Digit |

**Transmit UPC-E1 Check Digit**

The check digit is the last character of the symbol used to verify the integrity of the data. Select whether to transmit the bar code data with or without the UPC-E1 check digit. It is always verified to guarantee the integrity of the data.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 42 | \*1 | Transmit UPC-E1 Check Digit |
|  | 0 | Do Not Transmit UPC-E1 Check Digit |

**UPC-A Preamble**

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-A preamble to the host device. Select the appropriate option to match the host system

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 34 | \*1 | Transmit System Character Only |
|  | 2 | Transmit System Character and Country Code |
|  | 0 | Transmit no preamble |

**UPC-E Preamble**

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-E preamble to the host device. Select the appropriate option to match the host system

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 35 | \*1 | Transmit System Character Only |
|  | 2 | Transmit System Character and Country Code |
|  | 0 | Transmit no preamble |

**UPC-E1 Preamble**

Preamble characters are part of the UPC symbol, and include Country Code and System Character. There are three options for transmitting a UPC-E1 preamble to the host device. Select the appropriate option to match the host system.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 36 | \*1 | Transmit System Character Only |
|  | 2 | Transmit System Character and Country Code |
|  | 0 | Transmit no preamble |

**Convert UPC-E to UPC-A**

Enable this 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). When disabled, UPC-E decoded data is transmitted as UPC-E data, without conversion.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 37 | \*0 | Do Not Convert UPC-E to UPC-A (Disable) |
|  | 1 | Convert UPC-E to UPC-A (Enable) |

**Convert UPC-E1 to UPC-A**

Enable this 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). When disabled, UPC-E1 decoded data is transmitted as UPC-E1 data, without conversion.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 38 | \*0 | Do Not Convert UPC-E to UPC-A (Disable) |
|  | 1 | Convert UPC-E to UPC-A (Enable) |

**EAN-8/JAN-8 Extend**

Enable this parameter to add five leading zeros to decoded EAN-8 symbols to make them compatible in format to EAN-13 symbols. Disable this to transmit EAN-8 symbols as is.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 39 | \*0 | Disable EAN/JAN Zero Extend |
|  | 1 | Enable EAN/JAN Zero Extend |

**Bookland ISBN Format**

If you enabled Bookland EAN using Enable/Disable Bookland EAN, select one of the following formats for Bookland data

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 576 | \*0 | Bookland ISBN-10 |
|  | 1 | Bookland ISBN-13 |

NOTE For Bookland EAN to function properly, first enable Bookland EAN using Enable/Disable Bookland EAN, then select either Decode UPC/EAN Supplementals, Autodiscriminate UPC/EAN Supplementals, or Enable 978/979 Supplemental Mode in Decode UPC/EAN/JAN Supplementals.

**UCC Coupon Extended Code**

Enable this parameter to decode UPC-A bar codes starting with digit ‘5’, EAN-13 bar codes starting with digit ‘99’, and UPC-A/EAN-128 Coupon Codes. UPCA, EAN-13, and EAN-128 must be enabled to scan all types of Coupon Codes.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 85 | \*0 | Disable UCC Coupon Extended Code |
|  | 1 | Enable UCC Coupon Extended Code |

NOTE Use the Decode UPC/EAN Supplemental Redundancy parameter to control autodiscrimination of the EAN128 (right half) of a coupon code.

**Coupon Report**

Traditional coupon symbols (old coupon symbols) are composed of two bar codes: UPC/EAN and Code128. A new coupon symbol is composed of a single Databar Expanded bar code. The new coupon format offers more options for purchase values (up to $999.99) and supports complex discount offers such as a second purchase requirement.

An interim coupon symbol also exists that contains both types of bar codes: UPC/EAN and Databar Expanded. This format accommodates both retailers that do not recognize or use the additional information included in the new coupon symbol, as well as those who can process new coupon symbols.

Select one of the following options for decoding coupon symbols

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 730 | \*1 | New Coupon Symbols |
|  | **0** | Old Coupon Symbols |
|  | **2** | Both Coupon Formats |

**ISSN EAN**

Enable or disable ISSN EAN.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 617 | \*0 | Disable ISSN EAN |
|  | 1 | Enable ISSN EAN |

**Code 128**

Enable or disable Code 128

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 8 | \*0 | Enable Code 128 |
|  | 1 | Disable Code 128 |

**Set Lengths for Code 128**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Assign lengths for Code 128 to decode either one or two discrete lengths, or a length within a specific range.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 209 | Any Length | Length1 [Range: 0..55] |
| 210 | Length2 [Range: 0..55] |

**One Discrete Length** - To limit the decoding of Code 128 to one specific length, assign this length to the Length1 parameter and 0 to the Length2 parameter. For example, for fixed length 14, set Length1 = 14, Length2 = 0.

**Two Discrete Lengths** - To limit the decoding of Code 128 to either of two specific lengths, assign the greater length to the Length1 parameter and the lesser to Length2. For example, to decode Code 128 codes of either 2 or 14 characters only, set Length1 = 14, Length2 = 2.

**Length Within Range** - To decode only Code 128 codes that fall within a specific length range, assign the lesser length to the Length1 parameter and the greater to the Length2 parameter. For example, to decode Code 128 codes of length 4 through 12 characters, set Length1 = 4, Length2 = 12.

**GS1-128 (formerly UCC/EAN-128)**

Enable or disable GS1-128

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 14 | \*1 | Enable GS1-128 |
|  | 0 | Disable GS1-128 |

**ISBT 128**

ISBT 128 is a variant of Code 128 used in the blood bank industry. Enable or disable ISBT 128. If necessary, the host must perform concatenation of the ISBT data.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 84 | \*1 | Enable ISBT 128 |
|  | 0 | Disable ISBT 128 |

**ISBT Concatenation**

Select an option for concatenating pairs of ISBT code types

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 577 | \*0 - Disable ISBT Concatenation | The device does not concatenate pairs of ISBT codes it encounters. |
|  | 1 - Enable ISBT Concatenation | There must be two ISBT codes in order for the device to decode and perform concatenation. The device does not decode single ISBT symbols. |
|  | 2 - Autodiscriminate ISBT Concatenation | The device decodes and concatenates pairs of ISBT codes immediately. If only a single ISBT symbol is present, the device must decode the symbol the number of times set via ISBT Concatenation Redundancy before transmitting its data to confirm that there is no additional ISBT symbol. |

**Check ISBT Table**

The ISBT specification includes a table that lists several types of ISBT bar codes that are commonly used in pairs. If you enable ISBT Concatenation, enable Check ISBT Table to concatenate only those pairs found in this table. Other types of ISBT codes are not concatenated.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 578 | \*1 | Enable Check ISBT Table |
|  | 0 | Disable Check ISBT Table |

**ISBT Concatenation Redundancy**

With ISBT Concatenation set to Autodiscriminate, this option sets the number of times the device must decode an ISBT symbol before determining that there is no additional symbol. The range is from two to 20 times. The default is 10.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 223 | \*10 |  |

**Code 128 Reduced Quiet Zone**

Enable or disable decoding Code 128 bar codes with reduced quiet zones. If you select Enable, select a 1D Quiet Zone Level.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 1208 | \*0 | Disable Code 128 Reduced Quiet Zone |
|  | 1 | Enable Code 128 Reduced Quiet Zone |

**Ignore Code 128<FNC4>**

This feature applies to Code 128 bar codes with an embedded <FNC4> character.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 1254 | \*0 - Disable Ignore Code 128<FNC4> | The <FNC4> character is not transmitted but the following character has 128 added to it. |
|  | 1 - Enable Ignore Code 128<FNC4> | This strips the <FNC4> character from the decode data. The remaining characters do not change. |

**Code 39**

Enable or disable Code 39

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 0 | \*1 | Enable Code 39 |
|  | 0 | Disable Code 39 |

**Trioptic Code 39**

Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. Trioptic Code 39 symbols always contain six characters. Enable or disable Trioptic Code 39.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 13 | \*0 | Disable Code 39 |
|  | 1 | Enable Code 39 |

NOTE Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously

**Convert Code 39 to Code 32**

Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry. Enable or disable converting Code 39 to Code 32.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 86 | \*0 | Disable Convert Code 39 to Code 32 |
|  | 1 | Enable Convert Code 39 to Code 32 |

NOTE Code 39 must be enabled for this parameter to function.

**Code 32 Prefix**

Enable or disable adding the prefix character “A” to all Code 32 bar codes.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 231 | \*0 | Disable Code 32 Prefix |
|  | 1 | Enable Code 32 Prefix |

NOTE Convert Code 39 to Code 32 must be enabled for this parameter to function.

**Set Lengths for Code 39**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Assign lengths for Code 39 to decode either one or two discrete lengths, or a length within a specific range.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 18 | \*2 | Length1 [Range: 0..55] |
| 19 | \*55 | Length2 [Range: 0..55] |

**One Discrete Length** - To limit the decoding of Code 39 to one specific length, assign this length to the Length1 parameter and 0 to the Length2 parameter. For example, for fixed length 14, set Length1 = 14, Length2 = 0.

**Two Discrete Lengths** - To limit the decoding of Code 39 to either of two specific lengths, assign the greater length to the Length1 parameter and the lesser to Length2. For example, to decode Code 39 codes of either 2 or 14 characters only, set Length1 = 14, Length2 = 2.

**Length Within Range** - To decode only Code 39 codes that fall within a specific length range, assign the lesser length to the Length1 parameter and the greater to the Length2 parameter. For example, to decode Code 39 codes of length 4 through 12 characters, set Length1 = 4, Length2 = 12.

**Code 39 Check Digit Verification**

Enable this 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.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 48 | \*0 | Disable Code 39 Check Digit Verification |
|  | 1 | Enable Code 39 Check Digit Verification |

**Transmit Code 39 Check Digit**

Select whether to transmit Code 39 data with or without the check digit.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 43 | \*0 | Do Not Transmit Code 39 Check Digit (Disable) |
|  | 1 | Transmit Code 39 Check Digit (Enable) |

NOTE Code 39 Check Digit Verification must be enabled for this parameter to function.

**Code 39 Full ASCII Conversion**

Code 39 Full ASCII is a variant of Code 39 which pairs characters to encode the full ASCII character set. Enable or disable Code 39 Full ASCII

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 17 | \*0 | Disable Code 39 Full ASCII |
|  | 1 | Enable Code 39 Full ASCII |

NOTE Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously. Code 39 Full ASCII to Full ASCII Correlation is host-dependent.

**Code 39 Reduced Quiet Zone**

Enable or disable decoding Code 39 bar codes with reduced quiet zones. If you select Enable, select a 1D Quiet Zone Level.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 1209 | \*0 | Disable Code 39 Reduced Quiet Zone |
|  | 1 | Enable Code 39 Reduced Quiet Zone |

**Code 93**

Enable or disable Code 93

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 9 | \*0 | Disable Code 93 |
|  | 1 | Enable Code 93 |

**Set Lengths for Code 93**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Assign lengths for Code 93 to decode either one or two discrete lengths, or a length within a specific range.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 26 | \*4 | Length1 [Range: 0..55] |
| 27 | \*55 | Length2 [Range: 0..55] |

**One Discrete Length** - To limit the decoding of Code 93 to one specific length, assign this length to the Length1 parameter and 0 to the Length2 parameter. For example, for fixed length 14, set Length1 = 14, Length2 = 0.

**Two Discrete Lengths** - To limit the decoding of Code 93 to either of two specific lengths, assign the greater length to the Length1 parameter and the lesser to Length2. For example, to decode Code 93 codes of either 2 or 14 characters only, set Length1 = 14, Length2 = 2.

**Length Within Range** - To decode only Code 93 codes that fall within a specific length range, assign the lesser length to the Length1 parameter and the greater to the Length2 parameter. For example, to decode Code 93 codes of length 4 through 12 characters, set Length1 = 4, Length2 = 12.

**Code 11**

Enable or disable Code 11

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 10 | \*0 | Disable Code 11 |
|  | 1 | Enable Code 11 |

**Set Lengths for Code 11**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Assign lengths for Code 11 to decode either one or two discrete lengths, or a length within a specific range.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 28 | \*4 | Length1 [Range: 0..55] |
| 29 | \*55 | Length2 [Range: 0..55] |

**One Discrete Length** - To limit the decoding of Code 11 to one specific length, assign this length to the Length1 parameter and 0 to the Length2 parameter. For example, for fixed length 14, set Length1 = 14, Length2 = 0.

**Two Discrete Lengths** - To limit the decoding of Code 11 to either of two specific lengths, assign the greater length to the Length1 parameter and the lesser to Length2. For example, to decode Code 11 codes of either 2 or 14 characters only, set Length1 = 14, Length2 = 2.

**Length Within Range** - To decode only Code 11 codes that fall within a specific length range, assign the lesser length to the Length1 parameter and the greater to the Length2 parameter. For example, to decode Code 11 codes of length 4 through 12 characters, set Length1 = 4, Length2 = 12.

**Code 11 Check Digit Verification**

This feature allows the decoder to check the integrity of all Code 11 symbols to verify that the data complies with the specified check digit algorithm. This selects the check digit mechanism for the decoded Code 11 bar code. To enable this feature, set the number of check digits encoded in the Code 11 symbols

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 52 | \*0 | Disable Code 11 Check Digit Verification |
|  | 1 - 1 | Check Digit |
|  | 2 - 2 | Check Digits |

**Transmit Code 11 Check Digits**

Select whether or not to transmit the Code 11 check digit(s).

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 47 | \*0 | Do Not Transmit Code 11 Check Digit(s) (Disable) |
|  | 1 | Transmit Code 11 Check Digit(s) (Enable) |

NOTE Code 11 Check Digit Verification must be enabled for this parameter to function.

**Interleaved 2 of 5**

Enable or disable Interleaved 2 of 5

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 6 | \*1 | Enable Interleaved 2 of 5 |
|  | 0 | Disable Interleaved 2 of 5 |

**Set Lengths for Interleaved 2 of 5**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Assign lengths for I 2 of 5 to decode either one or two discrete lengths, or a length within a specific range.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 22 | \*14 | Length1 [Range: 0..55] |
| 23 | **\*0** | Length2 [Range: 0..55] |

**One Discrete Length** - To limit the decoding of I 2 of 5 to one specific length, assign this length to the Length1 parameter and 0 to the Length2 parameter. For example, for fixed length 14, set Length1 = 14, Length2 = 0.

**Two Discrete Lengths** - To limit the decoding of I 2 of 5 to either of two specific lengths, assign the greater length to the Length1 parameter and the lesser to Length2. For example, to decode I 2 of 5 codes of either 2 or 14 characters only, set Length1 = 14, Length2 = 2.

**Length Within Range** - To decode only I 2 of 5 codes that fall within a specific length range, assign the lesser length to the Length1 parameter and the greater to the Length2 parameter. For example, to decode I 2 of 5 codes of length 4 through 12 characters, set Length1 = 4, Length2 = 12.

**Any Length** - To decode I 2 of 5 codes of any length, set the values of Length1 and Length2 parameters to 0.

NOTE Due to the construction of the I 2 of 5 symbology, it is possible for a scan line covering only a portion of the code to be interpreted as a complete scan, yielding less data than is encoded in the bar code. To prevent this, select specific lengths (one or two discrete lengths) for I 2 of 5 applications.

**I 2 of 5 Check Digit Verification**

Enable this feature to check the integrity of all I 2 of 5 symbols to verify the data complies with either the specified Uniform Symbology Specification (USS), or the Optical Product Code Council (OPCC) check digit algorithm.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 49 | \*0 | Disable |
|  | 1 | USS Check Digit |
|  | 2 | OPCC Check Digits |

**Transmit I 2 of 5 Check Digit**

Select whether to transmit I 2 of 5 data with or without the check digit

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 44 | \*0 | Do Not Transmit I 2 of 5 Check Digit (Disable) |
|  | 1 | Transmit I 2 of 5 Check Digit (Enable) |

**Convert I 2 of 5 to EAN-13**

Enable this parameter to convert 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.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 82 | \*0 | Do Not Convert I 2 of 5 to EAN-13 (Disable) |
|  | 1 | Convert I 2 of 5 to EAN-13 (Enable) |

**I 2 of 5 Security Level**

Interleaved 2 of 5 bar codes are vulnerable to misdecodes, particularly when I 2 of 5 Lengths is set to Any Length. The scanner offers four levels of decode security for Interleaved 2 of 5 bar codes. There is an inverse relationship between security and scanner aggressiveness. Increasing the level of security can reduce scanning aggressiveness, so select only the level of security necessary

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 1121 | \*1 | I 2 of 5 Security Level 1 |
|  | **0** | I 2 of 5 Security Level 0 |
|  | **2** | I 2 of 5 Security Level 2 |
|  | **3** | I 2 of 5 Security Level 3 |

NOTE Selecting this option is an extreme measure against mis-decoding severely out-of-spec bar codes. Selecting this level of security significantly impairs the decoding ability of the scanner. If this level of security is required, try to improve the quality of the bar codes.

**I 2 of 5 Reduced Quiet Zone**

Enable or disable decoding I 2 of 5 bar codes with reduced quiet zones. If you select Enable, select a 1D Quiet Zone Level.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 82 | \*0 | Disable I 2 of 5 Reduced Quiet Zone |
|  | 1 | Enable I 2 of 5 Reduced Quiet Zone |

**Discrete 2 of 5**

Enable or disable Discrete 2 of 5

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 5 | \*0 | Disable Discrete 2 of 5 |
|  | 1 | Enable Discrete 2 of 5 |

**Set Lengths for Discrete 2 of 5**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Assign lengths for D 2 of 5 to decode either one or two discrete lengths, or a length within a specific range.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 20 | \*12 | Length1 [Range: 0..55] |
| 21 | \*0 | Length2 [Range: 0..55] |

**One Discrete Length** - To limit the decoding of D 2 of 5 to one specific length, assign this length to the Length1 parameter and 0 to the Length2 parameter. For example, for fixed length 14, set Length1 = 14, Length2 = 0.

**Two Discrete Lengths** - To limit the decoding of D 2 of 5 to either of two specific lengths, assign the greater length to the Length1 parameter and the lesser to Length2. For example, to decode D 2 of 5 codes of either 2 or 14 characters only, set Length1 = 14, Length2 = 2.

**Length Within Range** - To decode only D 2 of 5 codes that fall within a specific length range, assign the lesser length to the Length1 parameter and the greater to the Length2 parameter. For example, to decode D 2 of 5 codes of length 4 through 12 characters, set Length1 = 4, Length2 = 12

NOTE Due to the construction of the D 2 of 5 symbology, it is possible for a scan line covering only a portion of the code to be interpreted as a complete scan, yielding less data than is encoded in the bar code. To prevent this, select specific lengths (one or two discrete lengths) for D 2 of 5 applications.

**Codaba**r

Enable or disable Codabar

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 7 | \*0 | Disable Codabar |
|  | 1 | Enable Codabar |

**Set Lengths for Codabar**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Assign lengths for Codabar to decode either one or two discrete lengths, or a length within a specific range.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 24 | \*5 | Length1 [Range: 0..55] |
| 25 | \*55 | Length2 [Range: 0..55] |

**One Discrete Length** - To limit the decoding of Codabar to one specific length, assign this length to the Length1 parameter and 0 to the Length2 parameter. For example, for fixed length 14, set Length1 = 14, Length2 = 0.

**Two Discrete Lengths** - To limit the decoding of Codabar to either of two specific lengths, assign the greater length to the Length1 parameter and the lesser to Length2. For example, to decode Codabar codes of either 2 or 14 characters only, set Length1 = 14, Length2 = 2.

**Length Within Range** - To decode only Codabar codes that fall within a specific length range, assign the lesser length to the Length1 parameter and the greater to the Length2 parameter. For example, to decode Codabar codes of length 4 through 12 characters, set Length1 = 4, Length2 = 12.

**CLSI Editing**

Enable this parameter to strip the start and stop characters and insert a space after the first, fifth, and tenth characters of a 14-character Codabar symbol. Enable this if the host system requires this data format.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 54 | \*0 | Disable CLSI Editing |
|  | 1 | Enable CLSI Editing |

NOTE Symbol length does not include start and stop characters.

NOTIS Editing

Enable this parameter to strip the start and stop characters from a decoded Codabar symbol. Enable this if the host system requires this data format.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 55 | \*0 | Disable NOTIS Editing |
|  | 1 | Enable NOTIS Editing |

**MSI**

Enable or disable MSI.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 11 | \*0 | Disable MSI |
|  | 1 | Enable MSI |

**Set Lengths for MSI**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Assign lengths for MSI to decode either one or two discrete lengths, or a length within a specific range.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 30 | \*4 | Length1 [Range: 0..55] |
| 31 | \*55 | Length2 [Range: 0..55] |

**One Discrete Length** - To limit the decoding of MSI to one specific length, assign this length to the Length1 parameter and 0 to the Length2 parameter. For example, for fixed length 14, set Length1 = 14, Length2 = 0.

**Two Discrete Lengths** - To limit the decoding of MSI to either of two specific lengths, assign the greater length to the Length1 parameter and the lesser to Length2. For example, to decode MSI codes of either 2 or 14 characters only, set Length1 = 14, Length2 = 2.

**Length Within Range** - To decode only MSI codes that fall within a specific length range, assign the lesser length to the Length1 parameter and the greater to the Length2 parameter. For example, to decode MSI codes of length 4 through 12 characters, set Length1 = 4, Length2 = 12.

NOTE Due to the construction of the MSI symbology, it is possible for a scan line covering only a portion of the code to be interpreted as a complete scan, yielding less data than is encoded in the bar code. To prevent this, select specific lengths (one or two discrete lengths) for MSI applications.

**MSI Check Digits**

With MSI symbols, one check digit is mandatory and always verified by the reader. The second check digit is optional. If the MSI codes include two check digits, select Two MSI Check Digits to enable verification of the second check digit

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 50 | \*0 | One MSI Check Digit |
|  | 1 | Two MSI Check Digits |

**Transmit MSI Check Digit(s)**

Select whether to transmit MSI data with or without the check digit.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 46 | \*0 | Do Not Transmit MSI Check Digit(s) (Disable) |
|  | 1 | Transmit MSI Check Digit(s) (Enable) |

**MSI Check Digit Algorithm**

Select one of two algorithms for the verification of the second MSI check digit

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 51 | \*1 | MOD 10/MOD 10 |
|  | 0 | MOD 10/MOD 11 |

**Chinese 2 of 5**

Enable or disable Chinese 2 of 5

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 408 | \*0 | Disable Chinese 2 of 5 |
|  | 1 | Enable Chinese 2 of 5 |

**Korean 3 of 5**

Enable or disable Korean 3 of 5

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 581 | \*0 | Disable Korean 3 of 5 |
|  | 1 | Enable Korean 3 of 5 |

NOTE The length for Korean 3 of 5 is fixed at 6.

**Matrix 2 of 5**

Enable or disable Matrix 2 of 5.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 618 | \*0 | Disable Matrix 2 of 5 |
|  | 1 | Enable Matrix 2 of 5 |

**Set Lengths for Matrix 2 of 5**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s) the code contains. Assign lengths for Matrix 2 of 5 to decode either one or two discrete lengths, or a length within a specific range.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 619 | \*14 | Length1 [Range: 0..55] |
| 620 | \*0 | Length2 [Range: 0..55] |

**One Discrete Length** - To limit the decoding of Matrix 2 of 5 to one specific length, assign this length to the Length1 parameter and 0 to the Length2 parameter. For example, for fixed length 14, set Length1 = 14, Length2 = 0.

**Two Discrete Lengths** - To limit the decoding of Matrix 2 of 5 to either of two specific lengths, assign the greater length to the Length1 parameter and the lesser to Length2. For example, to decode Matrix 2 of 5 codes of either 2 or 14 characters only, set Length1 = 14, Length2 = 2.

**Length Within Range** - To decode only Matrix 2 of 5 codes that fall within a specific length range, assign the lesser length to the Length1 parameter and the greater to the Length2 parameter. For example, to decode Matrix 2 of 5 codes of length 4 through 12 characters, set Length1 = 4, Length2 = 12

**Matrix 2 of 5 Redundancy**

Enable or disable Matrix 2 of 5 redundancy

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 621 | \*0 | Disable Matrix 2 of 5 Redundancy |
|  | 1 | Enable Matrix 2 of 5 Redundancy |

**Matrix 2 of 5 Check Digit**

The check digit is the last character of the symbol used to verify the integrity of the data. Select whether to transmit the bar code data with or without the Matrix 2 of 5 check digit

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 622 | \*0 | Disable Matrix 2 of 5 Check Digit |
|  | 1 | Enable Matrix 2 of 5 Check Digit |

**Transmit Matrix 2 of 5 Check Digit**

Select whether to transmit Matrix 2 of 5 data with or without the check digit.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 623 | \*0 | Do Not Transmit Matrix 2 of 5 Check Digit |
|  | 1 | Transmit Matrix 2 of 5 Check Digit |

**Inverse 1D**

Set the 1D inverse decoder setting

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 586 | \*0 | Regular Only |
|  | 1 | Inverse Only |
|  | 2 | nverse Autodetect |

**US Postnet**

Enable or disable US Postnet

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 89 | \*1 | Enable US Postnet |
|  | 0 | Disable US Postnet |

**US Planet**

Enable or disable US Planet

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 90 | \*1 | Enable US Planet |
|  | 0 | Disable US Planet |

**Transmit US Postal Check Digit**

Select whether to transmit US Postal data, which includes both US Postnet and US Planet, with or without the check digit

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 95 | \*1 | Transmit US Postal Check Digit |
|  | 0 | Do Not Transmit US Postal Check Digit |

**UK Postal**

Enable or disable UK Postal

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 91 | \*1 | Enable UK Postal |
|  | 0 | Disable UK Postal |

**Transmit UK Postal Check Digit**

Select whether to transmit UK Postal data with or without the check digit

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 96 | \*1 | Transmit UK Postal Check Digit |
|  | 0 | Do Not Transmit UK Postal Check Digit |

**Japan Postal**

Enable or disable Japan Postal

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 290 | \*1 | Enable Japan Postal |
|  | 0 | Disable Japan Postal |

**Australia Post**

Enable or disable Australia Post

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 291 | \*1 | Enable Australia Post |
|  | 0 | Disable Australia Post |

**Australia Post Format**

Select one of the following formats for Australia Post

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 718 | \*0 | Autodiscriminate |
|  | 1 | Raw Format |
|  | 2 | Alphanumeric Encoding |
|  | 3 | Numeric Encoding |

**Netherlands KIX Code**

Enable or disable Netherlands KIX Code

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 326 | \*1 | Enable Netherlands KIX Code |
|  | 0 | Disable Netherlands KIX Code |

**USPS 4CB/One Code/Intelligent Mail**

Enable or disable USPS 4CB/One Code/Intelligent Mail

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 592 | \*0 | Disable USPS 4CB/One Code/Intelligent Mail |
|  | 1 | Enable USPS 4CB/One Code/Intelligent Mail |

**UPU FICS Postal**

Enable or disable UPU FICS Postal

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 611 | \*0 | Disable UPU FICS Postal |
|  | 1 | Enable UPU FICS Postal |

**GS1 DataBar-14**

Enable or disable GS1 DataBar-14

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 338 | \*1 | Enable GS1 DataBar-14 |
|  | 0 | Disable GS1 DataBar-14 |

**GS1 DataBar Limited**

Enable or disable GS1 DataBar Limited

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| **339** | \*0 | Disable GS1 DataBar Limited |
|  | 1 | Enable GS1 DataBar Limited |

**GS1 DataBar Limited Security Level**

There are four levels of decode security for GS1 DataBar Limited bar codes. There is an inverse relationship between security and scanner aggressiveness. Increasing the level of security may result in reduced aggressiveness in scanning, so only choose the level of security necessary.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 728 | \*3 | Security level reflects newly proposed GS1 standard that requires a 5X trailing clear margin |
|  | **1** | No clear margin required. This complies with the original GS1 standard, yet might result in erroneous decoding of the DataBar Limited bar codes when scanning some UPC symbols that start with the digits “9” and “7”. |
|  | **2** | Automatic risk detection. This level of security may result in erroneous decoding of DataBar Limited bar codes when scanning some UPC symbols. If a misdecode is detected, the scanner operates in Level 3 or Level 1. |
|  | **4** | Security level extends beyond the standard required by GS1. This level of security requires a 5X leading and trailing clear margin. |

**GS1 DataBar Expanded**

Enable or disable GS1 DataBar Expanded

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 340 | \*0 | Disable GS1 DataBar Expanded |
|  | 1 | Enable GS1 DataBar Expanded |

**Convert GS1 DataBar to UPC/EAN**

This parameter only applies to GS1 DataBar-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.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 397 | \*0 | Disable Convert GS1 DataBar to UPC/EAN |
|  | 1 | Enable Convert GS1 DataBar to UPC/EAN |

**Composite CC-C**

Enable or disable Composite bar codes of type CC-C

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 341 | \*0 | Disable CC-C |
|  | 1 | Enable CC-C |

**Composite CC-A/B**

Enable or disable Composite bar codes of type CC-A/B

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 342 | \*0 | Disable CC-A/B |
|  | 1 | Enable CC-A/B |

**Composite TLC-39**

Enable or disable Composite bar codes of type TLC-39

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 371 | \*0 | Disable TLC39 |
|  | 1 | Enable TLC39 |

**UPC Composite Mode**

Select an option for linking UPC symbols with a 2D symbol during transmission as if they were one symbol

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 344 | \*0 | UPC Never Linked |
|  | 1 | UPC Always Linked |
|  | 2 | Autodiscriminate UPC Composites |

**GS1-128 Emulation Mode for UCC/EAN Composite Codes**

Enable or disable this mode

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 371 | \*0 | Disable GS1-128 Emulation Mode for UCC/EAN Composite Codes |
|  | 1 | Enable GS1-128 Emulation Mode for UCC/EAN Composite Codes |

**PDF417**

Enable or disable PDF417

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 15 | \*1 | Enable PDF417 |
|  | 0 | Disable PDF417 |

**MicroPDF417**

Enable or disable MicroPDF417.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 227 | \*0 | Disable MicroPDF417 |
|  | 1 | Enable MicroPDF417 |

**Code 128 Emulation**

Enable this parameter to transmit data from certain MicroPDF417 symbols as if it was encoded in Code 128 symbols. Transmit AIM Symbology Identifiers must be enabled for this parameter to work.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 123 | \*0 | transmits these MicroPDF417 symbols with one of the following prefixes:  ]L3 if the first codeword is 903-905  ]L4 if the first codeword is 908 or 909  ]L5 if the first codeword is 910 or 911 |
|  | 1 | transmits these MicroPDF417 symbols with one of the following prefixes:  ]C1 if the first codeword is 903-905  ]C2 if the first codeword is 908 or 909  ]C0 if the first codeword is 910 or 911 |

NOTE Linked MicroPDF codewords 906, 907, 912, 914, and 915 are not supported. Use GS1 Composites instead.

**Data Matrix**

Enable or disable Data Matrix

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 292 | \*1 | Enable Data Matrix |
|  | 0 | Disable Data Matrix |

**Maxicode**

Enable or disable Maxicode

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 294 | \*1 | Enable Maxicode |
|  | 0 | Disable Maxicode |

**QR Code**

Enable or disable QR Code

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 293 | \*1 | Enable QR Code |
|  | 0 | Disable QR Code |

**MicroQR**

Enable or disable MicroQR

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 573 | \*1 | Enable MicroQR |
|  | 0 | Disable MicroQR |

**Aztec**

Enable or disable Aztec

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 574 | \*1 | Enable Aztec |
|  | 0 | Disable Aztec |

**Han Xin**

Enable or disable Han Xin

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 1167 | \*0 | Disable Han Xin |
|  | 1 | Enable Han Xin |

**IDC Operating Mode**

Select the operating mode of the Intelligent Document Capture firmware

* **Off** - Disables the IDC feature.
* **Anchored** - Requires a bar code decode. The image capture region is based off this bar code.
* **Free-Form** - A printed border or page edge defines the image capture region. A bar code is optional.
* **Linked** - A printed border or page edge defines the image capture region. A bar code is required.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 594 | \*0 | Off |
|  | 1 | Anchored |
|  | 2 | Free-Form |
|  | 3 | Linked |

**IDC Symbology**

Select the bar code type(s) to use when Document Capture mode is not set to Off. To enable more than one symbology at a time, simply add the values together. For example, to enable PDF417, Data Matrix, and Code 39 write a value of 98 (32 + 64 + 2).

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 655 | 1 | Code 128 |
|  | 2 | Code 39 |
|  | 4 | I 2 of 5 |
|  | 8 | D 2 of 5 |
|  | 16 | Codabar |
|  | 32 | PD 417 |
|  | 64 | Data Matrix |
|  | 128 | EAN 128 |
|  | 512 | QR Code |

* Value 512(QR Code) : SM15 OS version 1.1.1 or later

**IDC X Coordinate**

Specify the horizontal offset to the top left corner of the region to capture relative to the center of the bar code. Negative values move toward the left. This parameter only applies when IDC Operating Mode is set to Anchored.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 596 | +/- 1279 | Default : -151 |

**IDC Y Coordinate**

Specify the vertical offset to the top left corner of the region to capture relative to the center of the bar code. Negative values move toward the top. This parameter only applies when IDC Operating Mode is set to Anchored.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 597 | +/- 1023 | Default : -050 |

**IDC Width**

Specify the width of the region to capture. This parameter only applies when IDC Operating Mode is set to Anchored.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 598 | 0010 to 1279 | Default : 0300 |

**IDC Height**

Specify the height of the region to capture. This parameter only applies when IDC Operating Mode is set to Anchored.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 599 | 0010 to 1023 | Default : 0050 |

#### 2D User Preferences

In this section, \* indicates the default option.

**Picklist Mode**

Picklist mode enables the decoder to decode only bar codes aligned under the center of the laser aiming pattern. Select one of the following picklist modes

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 402 | \*0 - Disabled Always | Picklist mode is always disabled. |
|  | 2 - Enabled Always | Picklist mode is always enabled. |

NOTE Picklist mode works via an approximation of the aiming pattern center. In most cases this approximation is fully accurate. However, decodes can occur when the target bar code is near but not directly under the center of the aiming pattern.

**Decode Session Timeout**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 136 | 99 | 9.9 Sec |

Set the maximum time decode processing continues during a scan attempt, available in 0.1 second increments from 0.5 to 9.9 seconds. The default timeout is 9.9 seconds.

For example, to set a decode session timeout of 0.5 seconds, set this parameter to a value of 5. To set a timeout of 2.5 seconds, enter the value 25.

**Transmit Code ID Character**

A Code ID character identifies the code type of a scanned bar code. This is useful when decoding more than one code type. In addition to any single character prefix already selected, the Code ID character is inserted between the prefix and the decoded symbol.

NOTE If you enable Symbol Code ID Character or AIM Code ID Character, and enable Transmit “No Read” Message, the decoder appends the code ID for Code 39 to the NR message.

Select one of the following Code ID options

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 45 | **\***0 | None |
|  | **1** | AIM Code ID Character |
|  | **2** | Symbol Code IDCharacter |

**Mobile Phone/Display Mode**

This mode improves bar code reading performance on mobile phones and electronic displays. Enabling this mode improves accuracy by reducing the probability of no-decodes or mis-decodes, but may increase decode time.

Select one of the following options

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 716 | **\***0 | Disable Mobile Phone/Display Mode |
|  | 1 | Enable Mobile Phone/Display Mode |

**Multi Decode Mode**

This mode enables decoding multiple bar codes within the scanner's field of view. Select one of the following options

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 900 | **\***0 | Disable Multi Decode Mode |
|  | 1 | Enable Multi Decode Mode |

**Bar Codes to Read**

This parameter sets the number of bar codes to read when Multi Decode Mode is enabled. The range is 1 to 10 bar codes. The default is 1.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 902 | **\*1** |  |

**Full Read Mode**

Select when to generate a decode event to the calling application when Multi Decode Mode is enabled

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 901 | **\***1 | when at least the number of bar codes set in Bar Codes to Read are decoded. |
|  | 0 | Generate a decode event after one or more bar codes are decoded. |

#### 2D Imaging Options

In this section, \* indicate the default option.

**Illumination Power Level**

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 764 | 10 |  |

This parameter sets the level of illumination by altering laser/LED power. The default is 10, which is maximum illumination. For values from 0 to 10, illumination varies from lowest to highest level. This parameter affects both decoding and motion illumination.

**Decoding Illumination**

Enable or disable illumination

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 298 | \*1 - Enable Decoding Illumination | the decoder turns on illumination every image capture to aid decoding. |
|  | 0 - Disable Decoding Illumination | the decoder does not use decoding illumination. |

Enabling illumination usually results in superior images. The effectiveness of illumination decreases as the distance to the target increases.

**Decode Aiming Pattern**

This parameter only applies in Decode Mode.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 306 | \*1 - Enable Decode Aiming Pattern | this projects the aiming pattern during bar code capture. |
|  | 0 - Disable Decode Aiming Pattern | this turns off the aiming pattern. |

**Image Capture Illumination**

Enable or disable image capture illumination.

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 361 | \*1 - Enable Image Capture Illumination | the decoder turns on illumination during every image capture. | |
|  | 0 - Disable Image Capture Illumination | prevents the decoder from using image capture illumination. |

Enabling illumination usually results in superior images. The effectiveness of illumination decreases as the distance to the target increases.

**Image Cropping**

Enable or disable the Image Cropping:

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 301 | \*0 - Disable Image Cropping | presents the full 1280 x 960 for the SE4750, 1280 x 800 for the SE4710, | |
|  | 1 - Enable Image Cropping | crops the image to the pixel addresses set |

NOTE The decoder has a cropping resolution of 4 pixels. Setting the cropping area to less than 3 pixels transfers the entire image.

**Crop to Pixel Addresses**

|  |
| --- |
| Parameter Number |
| 315 (Top) |
| 316 (Left) |
| 317 (Bottom) |
| 318 (Right) |

**If you selected Enable Image Cropping, set the pixel addresses to crop to. Specify four values for Top, Left, Bottom, and Right, where Top and Bottom correspond to row pixel addresses, and Left and Right correspond to column pixel addresses.**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | |
| Engine | **Value Range** | **Column Numbering** | **Row Numbering** |
| SE4750 | (0, 0) to (1279, 959) | 0 to1279 | 0 to 959 |
| SE4710 | (0, 0) to (1279, 799) | 0 to 1279 | 0 to 799 |

**For example, for a 4 row x 8 column image in the extreme bottom-right section of the image, set the following values:**

**SE4750: Top = 955, Bottom = 959, Left = 1271, Right = 1279**

**SE4710: Top = 795, Bottom = 799, Left = 1271, Right = 1279**

**Image Resolution**

This option alters image resolution before compression. Rows and columns are removed from the image,

resulting in a smaller image containing the original content with reduced resolution.

Select one of the following values:

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter Number | Value | Description | |
| 302 | \*0 (Full) | 1280 x 960 (SE4750) | 1280 x 800 (SE4710) |
|  | 1 (1/2) | 640 x 480 (SE4750) | 640 x 400 (SE4710) |
|  | 3 (1/4) | 320 x 240 (SE4750) | 320 x 200 (SE4710) |
|  |  |  |  |

Enabling illumination usually results in superior images. The effectiveness of illumination decreases as the distance to the target increases.

**Image Enhancement**

This feature uses a combination of edge sharpening and contrast enhancement to produce an image that is visually pleasing. Select a level of image enhancement:

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 564 | \*0 | Off |
|  | 1 | Low |
|  | 2 | Medium |
|  | 3 | High |

**Exposure Time**

Enable or disable the Image Cropping:

|  |  |  |
| --- | --- | --- |
| Parameter Number | Value | description |
| 567 | 0~960 (The default is 0) |  | |

NOTE The maximum exposure time is based on the configured Frame Rate. For example, for a frame rate of 60 fps, the maximum exposure time allowed is 15ms. Setting exposure time to a larger value than the framerate allows sets the value to the maximum allowed exposure time.

As exposure time lengthens, aim brightness decreases.

Set the Exposure Time to a value from 0 to 960, where 960 represents the highest quality image. The default is 0. Each integer value represents 100 μs worth of exposure.