

Android Programming Manual

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1. ScanService/USS Communication

All USI cross application communications are done by broadcast intent between USI and user applications.

ScanServer V1.95 and above (as integrated in OS Built 3230 and above)

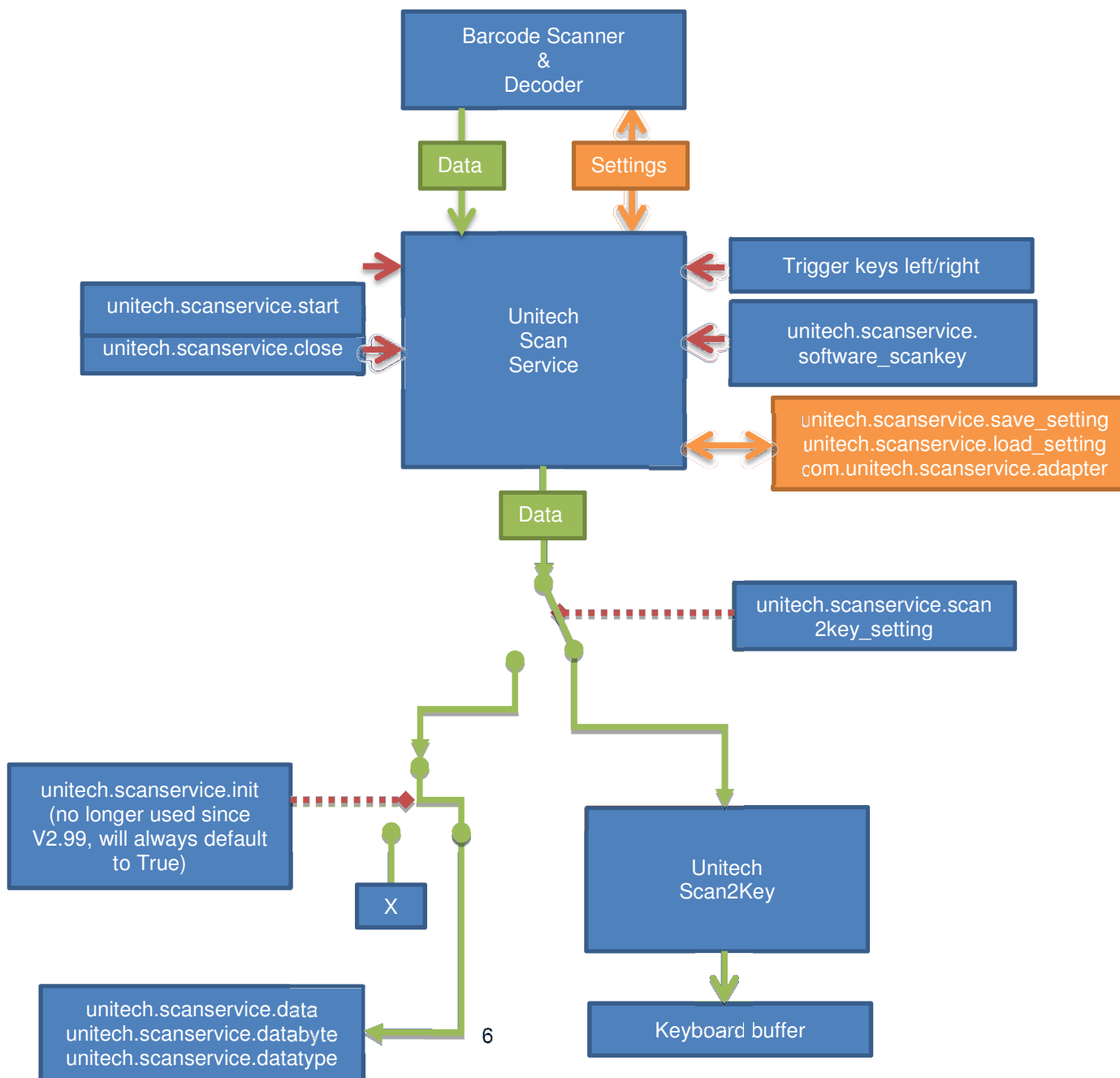
The intent action of the internal unitech scan service is "unitech.scanservice.xxx", and the intent action of the external unitech scanservice is "unitech.scanservice.external.xxx".

For example, if you want to start the unitech scan service :

The start intent action of internal USS : unitech.scanservice.start

The start intent action of external USS : unitech.scanservice.external.start

The below schematic sketches the scanner integration.



1.1. Enable/disable Scan2Key

Description: Enable/Disable the Scan2Key which supports keyboard emulation features.

Action: "unitech.scanservice.scan2key_setting"

Extended data: Name: "scan2key"
Type: Boolean (true=ON, false= OFF)

1.2. Scan2Key output method

Description: Choosing output method when using Scan2Key.

Action: "unitech.scanservice.outputmethod"

Extended data: Name: "outputmethod"
Type: int

Note: Method

0	Key emulation
1	Copy/Paste

1.3. Trigger software scan

Description: Start or stop scanning

Action: "unitech.scanservice.software_scankey"

Extended data: Name: "scan"
Type: Boolean (true=start scanning, false=stop scanning)

Note: Sample code

http://a2401.s3.amazonaws.com/cs/app/USS/Software_Scankey_sanple_code.zip

1.4. Initialize data receiving procedure

Description: Initialize data receiving procedure.

Action: "unitech.scanservice.init"

Extended data: Name: "enable"
Type: Boolean (true=ON, false= OFF)

Note: Data receiving flow:

Scan2Key	Init	Scan Trigger	Output
ON	ON	Working	Keyboardbuffer
ON	OFF	Working	Keyboardbuffer
OFF	ON	Working	Intent
OFF	OFF	Not Working	Intent(with other way to start engine)

PS. From V2.99 trigger will always work on HW trigger OS, so this intent will have no effect.

1.5. Receive scanned data

Description: Receive the data from scanner via intent.

Action: "unitech.scanservice.data"

Extended data: Name: "text"
Type: String

Note: Customer can change the Intent Action and Extended data Name. Please refer to chapter [錯誤! 找不到參照來源](#)。 [錯誤! 找不到參照來源](#)。

Action: "unitech.scanservice.datalength"

Extended data: Name: "text"
Type: int

Action: "unitech.scanservice.databyte"

Extended data: Name: "text"
Type: byte[]

Action: "unitech.scanservice.databytelength"

Extended data: Name: "text"
Type: int

Note: Must set scan2key to false in order for data to send through intent. Otherwise data will sent to keyboard buffer.

"databyte" will return unmodified raw data from the engine, which might be different from the String "data". Thus need to use databytelength to get the correct length.

USS send intent by below sequences

[unitech.scanservice.data](#) (barcode data)

[unitech.scanservice.databytelength](#) (barcode length)

[unitech.scanservice.datatype](#) (symbolologies code type)

1.6. Receive symbology data

Description: Receive the type of scanned barcode symbology.

Also refer to chapter 2.1

Action: "unitech.scanservice.datatype"

Extended data: Name: "text"
Type: Integer

Note: Must set scan2key to false in order for symbology data to send through intent.

1.7. Save scanner settings

Description: Save the scanner's setting.

Action: "unitech.scanservice.save_setting"

Extended data: Name: "Path"
Type: String

Note: File name is fixed: USISETTING.CFG

And default "Path" is /sdcard/ if "Path" is left empty. Make sure path exist.

1.8. Load scanner settings

Description: Load the scanner's setting.

Action: "unitech.scanservice.load_setting"

Extended data: Name: "Path"
Type: String

Note: File name is fixed: USISETTING.CFG.

And default "Path" is /sdcard/ if "Path" is left empty. Make sure path exist.

1.9. Close scan service

Description: Close the scan service.

Action: "unitech.scanservice.close"

Extended data: Name: "close"
Type: Boolean

1.10. Enable Scan Service

Description: Start the scan service

Action: "unitech.scanservice.start"

1.11. Set Preamble

ScanServer V2.05 or above

Description: set preamble to the output data

Action: "unitech.scanservice.preamble"

Extended data: Name: "preamble"
Type: String

1.12. Set Postamble

ScanServer V2.05 or above

Description: set postamble to the output data

Action: "unitech.scanservice.postamble"

Extended data: Name: "postamble"
Type: String

1.13. Set Terminator

ScanServer V2.05 or above

Description: set terminator to the output data

Action: "unitech.scanservice.terminator"

Extended data: Name: "terminator"
Type: String

1.14. Set Vibration

ScanServer V2.05 or above

Description: set vibration on/off on good read

Action: "unitech.scanservice.vibration"

Extended data: Name: "vibration"
Type: Boolean (true=ON, false= OFF)

1.15. Set Sound

ScanServer V2.05 or above

Description: set sound on/off on good read

Action: "unitech.scanservice.sound"

Extended data: Name: "sound"

Type: Boolean (true=ON, false= OFF)

1.16. Set Sound Frequency

Description: set sound frequency on good read

Action: "unitech.scanservice.frequency"

Extended data: Name: "frequency"

Type: String

0: Bass

1: Normal

2: Sharp

Note: PA760 Support only

1.17. Set Sound Duration:

Description: set sound frequency on good read

Action: "unitech.scanservice.duration"

Extended data: Name: "duration"

Type: String

0: Short

1: Medium

2: Long

Note: PA760 Support only

1.18. Set EAN128 Field Separator

ScanServer V2.05 or above

Description: set EAN128 Field Separator

Action: "unitech.scanservice.fieldseparator"

Extended data: Name: "fieldseparator"
Type: String

1.19. Set Intercharacter Delay

ScanServer V2.05 or above

Description: set intercharacter delay (ms)

Action: "unitech.scanservice.interchar_delay"

Extended data: Name: "intercharDelay"
Type: Integer

1.20. Set Keep Scan Timeout

ScanServer V2.07 or above

Will not work on PA700 with Android 4.1 starts 3800 or Android 4.3 starts 1019

Description: set the timeout duration in second(s) which is how long the engine will stay on after the trigger has been released.

Action: "unitech.scanservice.keepsan"

Extended data: Name: "keepsan"
Type: Integer

Note: Set it to 0 if you want the engine to turn off right after you release the trigger. And maximum should be less than 10.

1.21. Intercharacter Delay

ScanServer V2.25 or above

Description: set intercharacter delay in ms.

Action: "unitech.scanservice.interchar_delay"

Extended data: Name: "intercharDelay"
Type: Integer

Note: No extended data required.

1.22. Set Shake Scan

ScanServer V2.38 or above

Only support 1D engine

Description: enable/disable Shake Scan. Shake Scan allows user to shake the device to trigger the scan light.

Action: "unitech.scanservice.shakescan"

Extended data: Name: "enable"
Type: Boolean (true=ON, false= OFF)

1.23. Enable All Symbologies

ScanServer V2.52or above

Description: Enable all symbologies. Except Trioptic Code 39, Composite CC-C, Composite CC-A/B, and Composite TLC-39.

Action: "unitech.scanservice.enable_all"

1.24. Disable All Symbologies

ScanServer V2.28 or above

Description: Disable all symbologies.

Action: "unitech.scanservice.disable_all"

1.25. Enable/Disable NFC Read

ScanServer V2.49 or above

Description: enable/disable NFC read

Action: "unitech.scanservice.nfcenable"

Extended data: Name: "nfcenable"
Type: Boolean (true=ON, false=OFF)

1.26. Change NFC Output Order

ScanServer V2.49 or above

Description: Change the order which NFC data is send out.

Action: "unitech.scanservice.nfcorder"

Extended data: Name: "nfcorder"
Type: Boolean (true=Normal, false=Reverse)

1.27. Set NFC Ignore Rate

ScanServer V2.49 or above

Description: set the time(ms) between each NFC read output.

Action: "unitech.scanservice.nfcignorerate"

Extended data: Name: "nfcignorerate"
Type: Integer

1.28. Send param command

ScanServer V2.28 or above

Description: Send parameter command to engine.

Action: "unitech.scanservice.setting "

Extended data: Name: "INDEX"
Type: Integer
Name: "EXTEND"
Type: Boolean

Name: "EXT"
 Type: Byte
 Name: "NUM"
 Type: Byte
 Name: "VALUE"
 Type: Byte

Note: PA700 1D engine INDEX = 1; 2D engine INDEX = 2.
 For more information on device support parameter number and default value, please refer to chapter 9.4.
 If parameter number is bigger than 0xEF, set EXTEND to true; else set EXTEND to false.
 If EXTEND is true, set EXT to extended parameter code. And NUM to param_num offset.
 If EXTEND is false, set NUM to param_num.

Parameter numbers F0h (+256), F1h (+512), F2h (+768) access parameters whose numbers are 256 and higher. For example, to access the first parameter in the 256-511 range, use F0h and 00h.

Table A-14. Param Data Format

Parameter Number	Data Format
0 through EFh	<param_num> <value>
F0h, F1h, F2h	<extended parameter code> <param_num offset> <value>

And for each parameter, please check out the following JSON data.

For more details please reference Appendix A instead.

PA720 2D engine uses parameter for value, if parameter is bigger then 256, first set EXTEND to true, and then set increase EXT by 1 for every 256, starting from 0. (ex ISSN EAN has parameter of 617, EXT will equal 0x2, and value will equal 0x69).
 For other devices, please check out following example.

"Parameter" is human readable name of the parameter.
 "Hex" is the <param_num> or <extended parameter code><param_num offset>.
 To get the <value>, please check the "Type".

If Type is 1,
 that means this parameter only has enable(1)/disable(0) or true(1)/false(0) option.
 If Type is 2,
 that means this parameter has multiple options, and the values are listed in "Tag".
 If Type is 3,
 that means this parameter has a range of options, and the range values are between "Min"
 and "Max".

Example

```
// Enable/disable UPC-A
public static final String SETTING = "unitech.scanservice.setting";

Bundle bundle = new Bundle();
bundle.putInt("INDEX", 1); // 1 = 1D engine, 2 = 2D engine
bundle.putBoolean("EXTEND", false); // false if NUM <= 0xEF, otherwise true
bundle.putByte("NUM", (byte) 0x01); // <param_num> or <param_num offset>, from
"Hex" value
bundle.putByte("VALUE", (byte) 1); // 1 = Enable, 0 = Disable

Intent mIntent = new Intent().setAction(SETTING).putExtras(bundle);
sendBroadcast(mIntent);
```

Overview of Parameters;

```
<string-array name="UPC_EAN">
  <item>{
    "Parameter":"UPC-A",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x01
  }</item>
  <item>{
    "Parameter":"UPC-E",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x02
  }</item>
  <item>{
    "Parameter":"UPC-E1",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x0C
  }</item>
  <item>{
    "Parameter":"EAN-8",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x04
  }</item>
  <item>{
    "Parameter":"EAN-13",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x03
  }</item>
  <item>{
    "Parameter":"'Bookland EAN'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x53
  }</item>
  <item>{
    "Parameter":"'Bookland ISBN Format'",
    "Type":2,
    "Min":0,
    "Max":1,
    "Hex":0xF140,
    "Tag":{
      "'0'":"'Bookland ISBN-10'",
      "'1'":"'Bookland ISBN-13'"
    }
  }
}
```

```

}</item>
<item>{
  "Parameter": "'Decode UPC/EAN Supplementals'",
  "Type": 2,
  "Min": 0,
  "Max": 8,
  "Hex": 0x10,
  "Tag": {
    "'0'": "'Ignore UPC/EAN With Supplementals'",
    "'1'": "'Decode UPC/EAN With Supplementals'",
    "'2'": "'Autodiscriminate UPC/EAN Supplementals'",
    "'3'": "'Enable Smart Supplemental Mode'",
    "'4'": "'Enable 378/379 Supplemental Mode'",
    "'5'": "'Enable 978/979 Supplemental Mode'",
    "'6'": "'Enable 414/419/434/439 Supplemental Mode'",
    "'7'": "'Enable 977 Supplemental Mode'",
    "'8'": "'Enable 491 Supplemental Mode'"
  }
}</item>
<item>{
  "Parameter": "'Decocde UPC/EAN Supplemental Reddundacy'",
  "Type": 3,
  "Min": 2,
  "Max": 20,
  "Hex": 0x50
}</item>
<item>{
  "Parameter": "'UPC/EAN/JAN Supplemental AIM ID Format'",
  "Type": 2,
  "Min": 0,
  "Max": 1,
  "Hex": 0xF1A0,
  "Tag": {
    "'0'": "'Separate'",
    "'1'": "'Combined'"
  }
}</item>
<item>{
  "Parameter": "'Transmit UPC-A Check Digit'",
  "Type": 1,
  "Min": 0,
  "Max": 1,
  "Hex": 0x28
}</item>
<item>{
  "Parameter": "'Transmit UPC-E Check Digit'",
  "Type": 1,
  "Min": 0,
  "Max": 1,
  "Hex": 0x29
}</item>
<item>{
  "Parameter": "'Transmit UPC-E1 Check Digit'",
  "Type": 1,
  "Min": 0,

```

```

        "Max":1,
        "Hex":0x2A
    }</item>
    <item>{
        "Parameter":"'UPC-A Preamble'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0x22,
        "Tag":{
            "'0'":"'No Preamble'",
            "'1'":"'System Character'",
            "'2'":"'System Character and Country Code'"
        }
    }</item>
    <item>{
        "Parameter":"'UPC-E Preamble'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0x23,
        "Tag":{
            "'0'":"'No Preamble'",
            "'1'":"'System Character'",
            "'2'":"'System Character and Country Code'"
        }
    }</item>
    <item>{
        "Parameter":"'UPC-E1 Preamble'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0x24,
        "Tag":{
            "'0'":"'No Preamble'",
            "'1'":"'System Character'",
            "'2'":"'System Character and Country Code'"
        }
    }</item>
    <item>{
        "Parameter":"'Convert UPC-E to A'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x25
    }</item>
    <item>{
        "Parameter":"'Convert UPC-E1 to A'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x26
    }</item>
    <item>{
        "Parameter":"'EAN-8 Zero Extend'",

```



```

        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x27
    }</item>
    <item>{
        "Parameter":"'UPC/EAN Security Level'",
        "Type":2,
        "Min":0,
        "Max":3,
        "Hex":0x4D,
        "Tag":{
            "'0'":"'UPC/EAN Security Level 0'",
            "'1'":"'UPC/EAN Security Level 1'",
            "'2'":"'UPC/EAN Security Level 2'",
            "'3'":"'UPC/EAN Security Level 3'"
        }
    }</item>
    <item>{
        "Parameter":"'UCC Coupon Extended Code'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x55
    }</item>
    <item>{
        "Parameter":"'Coupon Report'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0xF1DA,
        "Tag":{
            "'0'":"'Old Coupon Symbols'",
            "'1'":"'New Coupon Symbols'",
            "'2'":"'Both Coupon Format'"
        }
    }</item>
    <item>{
        "Parameter":"'ISSN EAN'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF169
    }</item>
</string-array>

<string-array name="Code_128">
    <item>{
        "Parameter":"'Code 128'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x08
    }</item>
    <item>{

```

```

        "Parameter":"'Length L1'",
        "Type":3,
        "Min":1,
        "Max":55,
        "Hex":0xD1
    }</item>
    <item>{
        "Parameter":"'Length L2'",
        "Type":3,
        "Min":1,
        "Max":55,
        "Hex":0xD2
    }</item>
    <item>{
        "Parameter":"'GS1-128'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x0E
    }</item>
    <item>{
        "Parameter":"'ISBT 128'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x54
    }</item>
    <item>{
        "Parameter":"'ISBT Concatenation'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0xF141,
        "Tag":{
            "'0'":"'Disable ISBT Concatenation'",
            "'1'":"'Enable ISBT Concatenation'",
            "'2'":"'Autodiscriminate ISBT Concatenation'"
        }
    }</item>
    <item>{
        "Parameter":"'Check ISBT Table'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF142
    }</item>
    <item>{
        "Parameter":"'ISBT Concatenation Redundancy'",
        "Type":3,
        "Min":2,
        "Max":20,
        "Hex":0xDF
    }</item>
</string-array>

```

```

<string-array name="Code_39">
  <item>{
    "Parameter":"'Code 39'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x00
  }</item>
  <item>{
    "Parameter":"'Trioptic Code 39'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x0D
  }</item>
  <item>{
    "Parameter":"'Convert Code 39 to Code 32'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x56
  }</item>
  <item>{
    "Parameter":"'Code 32 Prefix'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0xE7
  }</item>
  <item>{
    "Parameter":"'Length L1'",
    "Type":3,
    "Min":0,
    "Max":48,
    "Hex":0x12
  }</item>
  <item>{
    "Parameter":"'Length L2'",
    "Type":3,
    "Min":0,
    "Max":48,
    "Hex":0x13
  }</item>
  <item>{
    "Parameter":"'Check Digit Verification'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x30
  }</item>
  <item>{
    "Parameter":"'Transmit Code 39 Check Digit'",
    "Type":1,
    "Min":0,
    "Max":1,
  }

```

```

        "Hex":0x2B
    }</item>
    <item>{
        "Parameter":"'Code 39 Full ASCII'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x11
    }</item>
</string-array>

<string-array name="Code_93">
    <item>{
        "Parameter":"'Code 93'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x09
    }</item>
    <item>{
        "Parameter":"'Length L1'",
        "Type":3,
        "Min":1,
        "Max":48,
        "Hex":0x1A
    }</item>
    <item>{
        "Parameter":"'Length L2'",
        "Type":3,
        "Min":1,
        "Max":48,
        "Hex":0x1B
    }</item>
</string-array>

<string-array name="Code_11">
    <item>{
        "Parameter":"'Code 11'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x0A
    }</item>
    <item>{
        "Parameter":"'Length L1'",
        "Type":3,
        "Min":1,
        "Max":48,
        "Hex":0x1C
    }</item>
    <item>{
        "Parameter":"'Length L2'",
        "Type":3,
        "Min":1,
        "Max":48,
    }</item>

```

```

        "Hex":0x1D
    }</item>
    <item>{
        "Parameter":"'Check Digit Verification'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0x34,
        "Tag":{
            "'0'":"'Disable'",
            "'1'":"'One Check Digit'",
            "'2'":"'Two Check Digit'"
        }
    }</item>
    <item>{
        "Parameter":"'Transmit Code 11 Check Digits'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x2F
    }</item>
</string-array>

<string-array name="I2of5">
    <item>{
        "Parameter":"'Interleaved 2 of 5'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x06
    }</item>
    <item>{
        "Parameter":"'Length L1'",
        "Type":3,
        "Min":2,
        "Max":55,
        "Hex":0x16
    }</item>
    <item>{
        "Parameter":"'Length L2'",
        "Type":3,
        "Min":2,
        "Max":55,
        "Hex":0x17
    }</item>
    <item>{
        "Parameter":"'Check Digit Verification'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0x31,
        "Tag":{
            "'0'":"'Disable'",
            "'1'":"'USS Check Digit'",
            "'2'":"'OPCC Check Digit'"
        }
    }

```

```

    }
  }</item>
  <item>{
    "Parameter":"'Transmit I 2 of 5 Check Digits'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x2C
  }</item>
  <item>{
    "Parameter":"'Convert I 2 of 5 to EAN-13'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x52
  }</item>
</string-array>

<string-array name="D2of5">
  <item>{
    "Parameter":"'Discrete 2 of 5'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0x05
  }</item>
  <item>{
    "Parameter":"'Length L1'",
    "Type":3,
    "Min":1,
    "Max":48,
    "Hex":0x14
  }</item>
  <item>{
    "Parameter":"'Length L2'",
    "Type":3,
    "Min":1,
    "Max":48,
    "Hex":0x15
  }</item>
</string-array>

<string-array name="C2of5">
  <item>{
    "Parameter":"'Chinese 2 of 5'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0xF098
  }</item>
</string-array>

<string-array name="M2of5">
  <item>{
    "Parameter":"'Matrix 2 of 5'",

```

```

        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF16A
    }</item>
    <item>{
        "Parameter":"'Length L1'",
        "Type":3,
        "Min":1,
        "Max":48,
        "Hex":0xF16B
    }</item>
    <item>{
        "Parameter":"'Length L2'",
        "Type":3,
        "Min":1,
        "Max":48,
        "Hex":0xF16C
    }</item>
    <item>{
        "Parameter":"'Matrix 2 of 5 Redundancy'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF16D
    }</item>
    <item>{
        "Parameter":"'Matrix 2 of 5 Check Digit'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF16E
    }</item>
    <item>{
        "Parameter":"'Transmit Matrix 2 of 5 Check Digit'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF16F
    }</item>
</string-array>

<string-array name="Codabar">
    <item>{
        "Parameter":"'Codabar'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x07
    }</item>
    <item>{
        "Parameter":"'Length L1'",
        "Type":3,
        "Min":3,
        "Max":48,

```

```

        "Hex":0x18
    }</item>
    <item>{
        "Parameter":"'Length L2'",
        "Type":3,
        "Min":3,
        "Max":48,
        "Hex":0x19
    }</item>
    <item>{
        "Parameter":"'CLSI Editing'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x36
    }</item>
    <item>{
        "Parameter":"'NOTIS Editing'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x37
    }</item>
</string-array>

<string-array name="MSI">
    <item>{
        "Parameter":"'MSI'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x0B
    }</item>
    <item>{
        "Parameter":"'Length L1'",
        "Type":3,
        "Min":1,
        "Max":16,
        "Hex":0x1E
    }</item>
    <item>{
        "Parameter":"'Length L2'",
        "Type":3,
        "Min":1,
        "Max":16,
        "Hex":0x1F
    }</item>
    <item>{
        "Parameter":"'MSI Check Digit'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x32
    }</item>
    <item>{

```



```

        "Parameter":"'Transmit MSI Check Digit'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x2E
    }</item>
    <item>{
        "Parameter":"'MSI Check Digit Algorithm'",
        "Type":2,
        "Min":0,
        "Max":1,
        "Hex":0x33,
        "Tag":{
            "'0'":"'MOD 10/MOD 11'",
            "'1'":"'MOD 10/MOD 10'"
        }
    }</item>
</string-array>

<string-array name="GS1_DataBar">
    <item>{
        "Parameter":"'GS1 DataBar Omnidirectional'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF052
    }</item>
    <item>{
        "Parameter":"'GS1 DataBar Limited'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF053
    }</item>
    <item>{
        "Parameter":"'GS1 DataBar Expanded'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF054
    }</item>
    <item>{
        "Parameter":"'Convert GS1 DataBar to UPC/EAN'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF08D
    }</item>
</string-array>

<string-array name="Postal_Codes">
    <item>{
        "Parameter":"'US Postnet'",
        "Type":1,
        "Min":0,

```

```

        "Max":1,
        "Hex":0x59
    }</item>
    <item>{
        "Parameter":"'US Planet'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x5A
    }</item>
    <item>{
        "Parameter":"'Transmit US Postal Check Digit'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x5F
    }</item>
    <item>{
        "Parameter":"'UK Postal'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x5B
    }</item>
    <item>{
        "Parameter":"'Transmit UK Postal Check Digit'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x60
    }</item>
    <item>{
        "Parameter":"'Japan Postal'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF022
    }</item>
    <item>{
        "Parameter":"'Australian Postal'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF023
    }</item>
    <item>{
        "Parameter":"'Netherlands KIX Code'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF046
    }</item>
    <item>{
        "Parameter":"'USPS 4CB/One Code/intelligent mail'",
        "Type":1,

```

```

        "Min":0,
        "Max":1,
        "Hex":0xF150
    }</item>
<item>{
    "Parameter":"'UPU FICS Postal'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0xF163
}</item>
</string-array>

<string-array name="Composite">
    <item>{
        "Parameter":"'Composite CC-C'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF055
    }</item>
    <item>{
        "Parameter":"'Composite CC-A/B'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF056
    }</item>
    <item>{
        "Parameter":"'Composite TLC-39'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF073
    }</item>
    <item>{
        "Parameter":"'UPC Compoiste Mode'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0xF058,
        "Tag":{
            "'0'":"'UPC Never Linked'",
            "'1'":"'UPC Always Linked'",
            "'2'":"'Autodiscriminate UPC Composites'"
        }
    }</item>
    <item>{
        "Parameter":"'Compoiste Beep Mode'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0xF08E,
        "Tag":{
            "'0'":"'Single Beep after both are decoded'",

```

```

        "'1'":"'Beep as each code type is decoded'",
        "'2'":"'Double Beep after both are decoded'"
    }
}
</item>
<item>{
    "Parameter":"'GS1-128 Emulation Mode for UCC/EAN Composite Codes'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0xF0AB
}
</item>
</string-array>

<string-array name="Symbologies_2D">
    <item>{
        "Parameter":"'PDF417'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x0F
    }
</item>
    <item>{
        "Parameter":"'MicroPDF417'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xE3
    }
</item>
    <item>{
        "Parameter":"'Code 128 Emulation'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x7B
    }
</item>
    <item>{
        "Parameter":"'Data Matrix'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF024
    }
</item>
    <item>{
        "Parameter":"'Data Matrix Inverse'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0xF14C,
        "Tag":{
            "'0'":"'Regular'",
            "'1'":"'Inverse Only'",
            "'2'":"'Inverse Autodetect'"
        }
    }
}
</item>
<item>{

```

```

        "Parameter":"'Decode Mirror Images (Data Matrix Only)'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0xF119,
        "Tag":{
            "'0'":"'Never'",
            "'1'":"'Always'",
            "'2'":"'Auto'"
        }
    }</item>
<item>{
    "Parameter":"'Maxicode'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0xF026
}</item>
<item>{
    "Parameter":"'QR Code'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0xF025
}</item>
<item>{
    "Parameter":"'Maxicode'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0xF026
}</item>
<item>{
    "Parameter":"'QR Inverse'",
    "Type":2,
    "Min":0,
    "Max":2,
    "Hex":0xF14B,
    "Tag":{
        "'0'":"'Regular'",
        "'1'":"'Inverse Only'",
        "'2'":"'Inverse Autodetect'"
    }
}</item>
<item>{
    "Parameter":"'MicroQR'",
    "Type":1,
    "Min":0,
    "Max":1,
    "Hex":0xF13D
}</item>
<item>{
    "Parameter":"'Aztec'",
    "Type":1,
    "Min":0,

```

```

        "Max":1,
        "Hex":0xF13E
    }</item>
    <item>{
        "Parameter":"'Aztec Inverse'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0xF14D,
        "Tag":{
            "'0'":"'Regular'",
            "'1'":"'Inverse Only'",
            "'2'":"'Inverse Autodetect'"
        }
    }</item>
    <item>{
        "Parameter":"'Mobile Phone/Display Mode'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0xF1CC
    }</item>
</string-array>

<string-array name="Data_Options">
    <item>{
        "Parameter":"'Transmit Code ID Character'",
        "Type":2,
        "Min":0,
        "Max":2,
        "Hex":0x2D,
        "Tag":{
            "'0'":"'None'",
            "'1'":"'Aim Code ID Character'",
            "'2'":"'Symbol Code ID Character'"
        }
    }</item>
</string-array>

<string-array name="Serial_Parameters">
    <item>{
        "Parameter":"'Baud Rate'",
        "Type":2,
        "Min":6,
        "Max":6,
        "Hex":0x9C,
        "Tag":{
            "'6'":"'9600'"
        }
    }</item>
</string-array>

<string-array name="Scanner_Options">
    <item>{
        "Parameter":"'Power Mode'",

```

```

        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x80
    }</item>
    <item>{
        "Parameter":"'Trigger Modes'",
        "Type":2,
        "Min":0,
        "Max":10,
        "Hex":0x8A
    "Tag":{
        "0":"'Level'",
        "1":"'--'",
        "2":"'--'",
        "3":"'--'",
        "4":"'--'",
        "5":"'--'",
        "6":"'--'",
        "7":"'Presentation Mode'",
        "8":"'Host'",
        "9":"'Auto Aim'",
        "'10":"'Auto Aim with Illumination'"
    }</item>
    <item>{
        "Parameter":"'Scan Duration'",
        "Type":3,
        "Min":0,
        "Max":99,
        "Hex":0x88
    }
    }</item>
    <item>{
        "Parameter":"'Transmit No Read Message'",
        "Type":1,
        "Min":0,
        "Max":1,
        "Hex":0x5E
    }</item>
    <item>{
        "Parameter":"'Linear Code Type Security Level'",
        "Type":2,
        "Min":1,
        "Max":4,
        "Hex":0x4E,
        "Tag":{
            "'1":"'Linear Security Level 1'",
            "'2":"'Linear Security Level 2'",
            "'3":"'Linear Security Level 3'",
            "'4":"'Linear Security Level 4'"
        }
    }</item>
    <item>{
        "Parameter":"'Inverse 1D'",
        "Type":2,

```

```

    "Min":0,
    "Max":2,
    "Hex":0xF14A,
    "Tag":{
      "'0'":"'Regular'",
      "'1'":"'Inverse Only'",
      "'2'":"'Inverse Autodetect'"
    }
  }</item>
</string-array>

```

1.29. Set Device Options

Description: set preamble:

Action: "unitech.scanservice.preamble"

Extended data: Name: "preamble"
Type: String

Description: set postamble:

Action: "unitech.scanservice.postamble"

Extended data: Name: "postamble"
Type: String

Description: set terminator:

Action: "unitech.scanservice.terminator"

Extended data: Name: "terminator"
Type: String

Description: set terminator:

Action: "unitech.scanservice.sound"

Extended data: Name: "sound"
Type: Boolean

Description: set sound frequency:

Action: "unitech.scanservice.frequency"

Extended data: Name: "frequency"
Type: String

Note: PA760 Support only

Description: set sound duration:

Action: "unitech.scanservice.duration_time"

Extended data: Name: "duration"
Type: String

Note: PA760 Support only

Description: set vibration:

Action: "unitech.scanservice.vibration"

Extended data: Name: "vibration"
Type: Boolean

Description: set intent action for the receive data:

Action: "unitech.scanservice.intent_action"

Extended data: Name: "intentaction"
Type: String

Note: PA760 Support only.

Description: set intent extra for the receive data:

Action: "unitech.scanservice.intent_extra"

Extended data: Name: "intentextra"
Type: String

Note: PA760 Support only.

Description: set encoding:

Action: "unitech.scanservice.encoding"

Extended data: Name: "encoding"
Type: Integer

Description: set field separator:

Action: "unitech.scanservice.fieldseparator"

Extended data: Name: "fieldseparator"
Type: String

Description: set interchar delay time:

Action: "unitech.scanservice.interchar_delay"

Extended data: Name: "intercharDelay"
Type: Integer

Description: set NFC enable/disable:

Action: "unitech.scanservice.nfcenable"

Extended data: Name: "nfcenable"
Type: Boolean

Description: set NFC order:

Action: "unitech.scanservice.nfcorder"

Extended data: Name: "nfcorder"
Type: Boolean

Description: set NFC output as decimal:

Action: "unitech.scanservice.nfcasdec"

Extended data: Name: "nfcasdec"
Type: Boolean

Description: set NFC ignorate rate:

Action: "unitech.scanservice.nfcignorerate"

Extended data: Name: "nfcignorerate"
Type: Integer

Description: set GS1-128 AI:

Action: "unitech.scanservice.aienable"

Extended data: Name: "aienable"
Type: Boolean

Description: set GS1-128 AI before:

Action: "unitech.scanservice.preai"

Extended data: Name: "preai"
Type: String

Description: set GS1-128 AI after:

Action: "unitech.scanservice.postai"

Extended data: Name: "postai"
Type: String

Description: set HIBC LIC:
Action: "unitech.scanservice.hibclicensable"
Extended data: Name: "hibclicensable"
Type: Boolean

Description: set HIBC LIC header:
Action: "unitech.scanservice.hibcllicheader"
Extended data: Name: "hibcllicheader"
Type: Boolean

Description: set HIBC LIC group separator:
Action: "unitech.scanservice.preai"
Extended data: Name: "hibcllicgs"
Type: String

Description: set HIBC LIC record separator:
Action: "unitech.scanservice.preai"
Extended data: Name: "hibcllicrs"
Type: String

Description: set HIBC LIC end of transmission:
Action: "unitech.scanservice.preai"
Extended data: Name: "hibcllicet"
Type: String

1.30. Enable/Disable keyboard output

```
Intent intent = new Intent();
intent.setAction("unitech.scanservice.scan2key_setting");
intent.putExtra("scan2key", true);
sendBroadcast(intent);
```

1.31. Receive scanned data and datatype

```
public void onReceive(Context context, Intent intent) {

if("unitech.scanservice.data" .equals(intent.getAction()))
    {
        Bundle bundle = intent.getExtras();
        if(bundle != null )
        {
            String text = bundle.getString("text");
            inst.setViewText(text);
        }
    }

if("unitech.scanservice.datatype" .equals(intent.getAction()))
    {
        Bundle bundle = intent.getExtras();
        if(bundle != null )
        {
// code error                int type = bundle.getString("text");
                int type = bundle.getInt("text");
                String text = "";
                if(type == 0x01)
                    text = "This is Code 39.";
                else if(type == 0x02)
                    text = "This is Code 39.";
                inst.setViewText(text);
        }
    }
}
```

PS. Must set scan2key to false in order for data to send through intent. Otherwise data will sent to keyboard buffer

1.32. Programming example

Programming Source-code example is available as "keypad-test" at [https://portal.unitech.eu/Files/Technical/PA700Scanner\(key\)Test_1.0.zip](https://portal.unitech.eu/Files/Technical/PA700Scanner(key)Test_1.0.zip)
For ScanServer V1.99 and above
https://portal.unitech.eu/Files/Technical/PA-Series-Scannertest-Src_1.0.zip

2. Tips using Scan2Key

2.1. Want to know the barcode symbology ?

Open the ScanService

Select the tab "Settings"

Select "Data Options"

Select "Transmit Code ID character" and select "AIM Code ID character"

The Barcode symbology will be transmitted as in

<http://mdn.morovia.com/kb/AIM-Symbology-Identifiers-SI-10639.html>

so a Code128 label with data 097050214112 the barcode will have display **]C0**097050214112
About the barcode symbology AIM Code ID, please refer to chapter 5.

2.2. The received data is longer the barcode data

Open the ScanService, press the third h/w key

Select "Device Option"

Select "Terminator" and remove the text <LF>

Select OK

2.3. Enable/Disable barcode scanning through HTML5

Prerequisites

ScanOff [DisableScan2Key.apk](#)

(<https://12manage.unitech.eu/RDM/tools/DisableScan2Key.apk>)

ScanOn [EnableScan2Key.apk](#)

(<https://12manage.unitech.eu/RDM/tools/EnableScan2Key.apk>)

For example and code visit <http://portal.unitech.eu/tools/android.aspx#>

3. Simple Data editing

ScanService V2.30 or above

3.1. Enable data editings

To enable data editing, first generate a text file called rule.txt at /sdcard/ folder. ScanService will read this file when it starts, and apply rules in the file to the final output of the data when using Scan2Key feature. The rule will not apply when data is sent out via intent.

If you want to stop using the data editing feature, just remove rule.txt from /sdcard/ folder.

3.2. rule.txt

Currently, ScanService will supports max of 10 sets of rules.

It goes from 0 to 9, and if it matches qualifier for rule 0, then it will stop at rule 0.

Otherwise it will keep going unit rule 9. If all rules are failed, then empty string will be outputted.

Each rule requires at least one qualifier. You can have multiple qualifiers in the same set. Only when all qualifiers are passed, then it will proceed to the modifier. If there is no modifier, then the original data will be outputted.

Each line rule consists of at least 4 sections. And each section is separate by comma.

The first section indicate if this line of rule is a **(q)**qualifier or **(m)**modifier.

The second section indicate this line of rule belong to which set of rules. It should be from **0** to **9**.

The third section will have different options depends on if this line of rule is qualifier or modifier.

1 In the case of qualifier:

(t) target symbology (v2.30 or higher):

This will be followed by how many symbologies will be in this qualifier, and then the symbologies which you want to use as qualifier.

In the example, we have 3 symbologies we want to check, and they are 1 (code 39 0x01), 19 (code 39 full ASCII 0x13), and 28 (QR code 0x1C). You can find the number for each symbology in Table A-8. Currently the rule can only take decimal number, so please convert the hex number in Table A-8 to decimal first.

To select all symbologies, have the number of symbologies set to 0.

(s) size of barcode (v2.30 or higher):

This will be followed by the condition, 0 means equal, 1 means less then, 2 means greater then. And then followed by the size you want to compare to.

(e) regular expression (v2.30 or higher):

This will be followed by java regular expression.

2 In the case of modifier:

(s) selection (v2.30 or higher):

This will be followed by start position, and then by length of the selection.

You can put 0 for the length to mean all remaining characters.

(r) replace (v2.52 or higher):

This will be followed by a java regular expression, and then replacing string.

This modifier will replace the matched regular expression with the string.

If you look at the example below, on rule 4, it will replace all barcode contain "4" with "x" on the "4".

(i) insertion (v3.00.06 or higher):

This will be followed by insertion start position, and then the inserting string.

Start position equal to 0 means the beginning of the barcode. When it is set to -1, this will insert the string to the end of the barcode.
(c) lower/upper case:
This will be followed by 1(lower case) or 2(upper case).

rule.txt example:

```
q,1,t,3,1,19,28
q,1,e,^i.*
m,1,s,1,0
q,2,s,2,10
q,3,t,0
m,3,s,0,0
q,4,e,1
m,4,r,4,x
q,5,t,10
m,i,-1,xyz
```

Example which will

- 1.insert abc to the end of EAN-13 barcode.
- 2.And insert xyz after the third position of EAN-8 barcode.

```
q,1,t,1,11
m,1,i,-1,abc
q,2,t,1,10
m,2,i,3,xyz
q,3,t,0,0
m,3,s,0,0
```

Table A-8. Code Types by SSI ID
Symbology SSI ID Code ID AIM ID
Letter
AIM ID Modifier

Code 39 0x01
Codabar 0x02
Code 128 0x03
D25 0x04
IATA 0x05
ITF 0x06
Code 93 0x07
UPCA 0x08
UPCE 3 0x09
EAN-8 0x0A
EAN-13 0x0B
Code 11 0x0C
MSI 0x0E
EAN-128 0x0F
UPCE1 0x10
PDF-417 0x11
Code 39 Full ASCII 0x13
Trioptic 0x15
Bookland 0x16
Coupon Code 0x17
ISBT-128 0x19
Micro PDF 0x1A
Data Matrix 0x1B
QR Code 0x1C
Postnet (US) 0x1E
Planet (US) 0x1F
Code 32 0x20
ISBT-128 Concat. 0x21
Postal (Japan) 0x22
Postal (Australia) 0x23
Postal (Dutch) 0x24
Maxicode 0x25
Postbar (CA) 0x26
Postal (UK) 0x27
Macro PDF-417 0x28
RSS-14 0x30
RSS Limited 0x31
RSS Expanded 0x32
Parameter (FNC3) 0x33
Scanlet Webcode 0x37
Cue CAT Code 0x38
UPCA + 2 0x48
UPCE + 2 0x49
EAN-8 + 2 0x4A
EAN-13 + 2 0x4B
UPCE1 + 2 0x50
Composite(CC-A + EAN-128) 0x51
Composite(CC-A + EAN-13) 0x52
Composite(CC-A + EAN-8) 0x53
Composite (CC-A +RSS Expanded) 0x54
Composite (CC-A +RSS Limited) 0x55
Composite(CC-A + RSS-14) 0x56
Composite(CC-A + UPC-A) 0x57
Composite(CC-A + UPC-E) 0x58
Composite(CC-C + EAN-128) 0x59
TLC-39 0x5A
Composite(CC-B + EAN-128) 0x61
Composite(CC-B + EAN-13) 0x62e Developer's Guide
Composite(CC-B + EAN-8) 0x63
Composite (CC-B +RSS Expanded) 0x64
Composite (CC-B +RSS Limited) 0x65
Composite(CC-B + RSS-14) 0x66
Composite(CC-B + UPC-A) 0x67
Composite(CC-B + UPC-E) 0x68
UPCA + 5 0x88
UPCE + 5 0x89
EAN-8 + 5 0x8A
EAN-13 + 5 0x8B
UPCE1 + 5 0x90
Multipacket Format 0x99
Macro Micro PDF 0x9A

4. SOTI APIs

4.1. Disable Factory Reset

Description:

This function is used to block “Factory data reset” from “Settings” menu and block key combination in the recovery menu to prevent factory reset and wipe cache. The API operation is based on intent action: ***android.intent.action.soti.ENABLE_FACTORY_RESET***, and permission ***android.permission.MASTER_CLEAR*** is required..

Sample:

```
void EnableFactoryReset(int state){
    Intent intent = new Intent();
    if(state != 0){
        intent.putExtra("state", "");
    }
    else{
        intent.putExtra("state", "disable");
    }
    intent.setAction("android.intent.action.soti.ENABLE_FACTORY_RESET");
    sendBroadcast(intent);
}
```

4.2. Disable USB Media Player

Description:

This function is used to disable USB host/client when thumb drive connected or connected to PC/Laptop, and charging will be unaffected. The API operation is based on intent action:

android.intent.action.soti.ENABLE_USB.

Sample:

```
void EnableUsb(int state){
    Intent intent = new Intent();
    if(state != 0){
        intent.putExtra("state", "");
    }
    else{
        intent.putExtra("state", "disable");
    }
    intent.setAction("android.intent.action.soti.ENABLE_USB");
    sendBroadcast(intent);
}
```

4.3. Block OS upgrade

Description:

This function is used to block “System updates” from “About phone” and block carrier push/OTA push(update notice from telecom carrier). The API operation is based on intent action: ***intent.genericupdate.switch***.

Sample:

```
String packageName = "com.innocomm.genericupdate";
String className = "com.innocomm.genericupdate.ControllReceiver";
void EnableOsUpgrade(int state){
    Intent intent = new Intent();
    if(state != 0){
        intent.putExtra("enable ", "true");
    }
    else{
        intent.putExtra("enable ", "false");
    }
    intent.setAction("intent.genericupdate.switch");
    intent.setClassName(packageName, className);
    sendBroadcast(intent);
}
```



```
}
```

4.4. Disable all 4 Keys

Description:

This function is used to block all 4 physical keys (return, home, menu and search) when these keys pressed. The API operation is based on system property: **persist.soti.key.status**.

Sample:

```
void EnableKey(int state){
    if(state != 0){
        SystemProperties.set("persist.soti.key.status", "");
    }
    else{
        SystemProperties.set("persist.soti.key.status", "disable");
    }
}
```

4.5. Prevent Uninstall Apps

Description:

This function is used to block “Apps” from “Settings”menu. The API operation is based on system property: **persist.soti.apps.status**.

Sample:

```
void EnableApps (int state){
    if(state != 0){
        SystemProperties.set("persist.soti.apps.status ", "");
    }
    else{
        SystemProperties.set("persist.soti.apps.status ", "disable");
    }
}
```

4.6. Disable Account Addition

Description:

This function is used to block “Add account” from “Settings”menu. The API operation is based on system property: **persist.soti.account.status**.

Sample:

```
void EnableAddAccount (int state){
    if(state != 0){
        SystemProperties.set("persist.soti.account.status ", "");
    }
    else{
        SystemProperties.set("persist.soti.account.status ", "disable");
    }
}
```

4.7. Disable Incoming SMS

Description:

This function is used to disable receiving SMS. The API operation is based on Settings.System: **sms_mt_off**, and permission **android.permission.WRITE_SETTINGS** is required.

Sample:

```
void EnableIncomingSms (int state){
    if(state != 0){
        Settings.System.putInt(getContentResolver(), "sms_mt_off" , 0);
    }
    else{
        Settings.System.putInt(getContentResolver(), "sms_mt_off", 1);
    }
}
```

4.8. Disable Outgoing SMS

Description:

This function is used to disable sending SMS. The API operation is based on Settings.System: **sms_mo_off**, and permission **android.permission.WRITE_SETTINGS** is required.

Sample:

```
void EnableOutgoingSms (int state){
    if(state != 0){
        Settings.System.putInt(getContentResolver(), "sms_mo_off" , 0);
    }
    else{
        Settings.System.putInt(getContentResolver(), "sms_mo_off", 1);
    }
}
```

4.9. Disable Incoming MMS

Description:

This function is used to disable receiving MMS. The API operation is based on Settings.System: **mms_mt_off**, and permission **android.permission.WRITE_SETTINGS** is required.

Sample:

```
void EnableIncomingMms (int state){
    if(state != 0){
        Settings.System.putInt(getContentResolver(), "mms_mt_off", 0);
    }
    else{
        Settings.System.putInt(getContentResolver(), "mms_mt_off", 1);
    }
}
```

4.10. Disable Outgoing MMS

Description:

This function is used to disable receiving SMS. The API operation is based on Settings.System:**mms_mo_off**, and permission **android.permission.WRITE_SETTINGS** is required.

Sample:

```
void EnableOutgoingMms (int state){
    if(state != 0){
        Settings.System.putInt(getContentResolver(), "mms_mo_off", 0);
    }
    else{
        Settings.System.putInt(getContentResolver(), "mms_mo_off", 1);
    }
}
```

5. Device Manager Interface(DMI)

This JAR provide hardware and software relative API for user to get information about internal component and also can control some of them. API functions are provided through JAR to assist programmer to write application.

Note : *Not all device support these functions.*

Sample code http://w3.tw.ute.com/pub/cs/manual/Android_Programming_Manual/SWDMI.zip

5.1. Memory, Storage and CPU Related Functions

5.1.1. Get Total Built-In Internal Memory Size

Function Description:

This function is used to get the total size of internal memory.

Function call:

String GetBuiltinTotalMemorySize()

Return

String: total memory size (GB)

5.1.2. Get Available Built-In Internal Memory Size

Function Description:

This function is used to get the available size of internal memory.

Function call:

String GetBuiltinAvailableMemorySize()

Return

String: available memory size (GB)

5.1.3. Get Total Extension Memory Size

Function Description:

This function is used to get the total size of extension memory.

Function call:

String GetExtensionTotalMemorySize()

Return

String: total memory size (GB) or "No SDCard"

5.1.4. Get Available Extension Memory Size

Function Description:

This function is used to get the available size of extension memory.

Function call:

String GetExtensionAvailableMemorySize()

Return

String: available memory size (GB) or "No SDCard"

5.1.5. Get Total Storage Size

Function Description:

This function is used to get the total size of flash storage.

Function call:

String GetTotalStorageSize()

Return

String: total storage size (GB)

5.1.6. Get Available Storage Size

Function Description:

This function is used to get the available size of flash storage.

Function call:

String GetAvailableStorageSize()

Return

String: available memory size (GB)

5.1.7. Get CPU load

Function Description:

This function is used to CPU load.

Function call:

String GetCPULoad()

Return

String: CPU load (%)

5.2. Battery Related Functions

5.2.1. Get Battery Level

Function Description:

This function is used to get battery level.

Function call:

String GetBatteryLevel()

Return

String: battery level (%)

5.2.2. Get Battery Charged

Function Description:

This function is used to get battery charging status.

Function call:

String GetBatteryCharged()

Return

String: charging status (Charging/Discharging)

5.2.3. Get Battery Temperature

Function Description: This function is used to get the battery temperature.

Function call:

String GetBatteryTemperature()

Return

String: battery temperature (Degrees Celsius)

5.3. Display and Touch Related Functions

5.3.1. Get Display Pixels

Function Description:

This function is used get total display pixels.

Function call:

String GetDisplayPixels()

Return

String: total display pixels (X * Y)

5.3.2. Get Display Orientation

Function Description:

This function is used to get display orientation.

Function call:

String GetDisplayOrientation()

Return

String: display orientation (Degree Rotation)

5.4. Camera Related Functions

5.4.1. Get Camera Present

Function Description:

This function is used to get camera present.

Function call:

String GetCameraPresent()

Return

String: camera present (Present/Not Present)

5.5. GPS Related Functions

5.5.1. 1.6.1 Get GPS Opened

Function Description:

This function is used to get if GPS opened.

Function call:

String IsGPSOpened()

Parameter

nEnabled: int: 0: Disable

1: Enable

Return

String: GPS status (Opened/Closed)

“Not Support” if the device do not have GPS provider

5.5.2. 1.6.2 Get GPS Position

Function Description:

This function is used to get GPS position.

Function call:

String GetGPSPosition()

Return

String: GPS or Network position data

“Not Support” if the device do not have GPS provider and Network provider

5.6. Bluetooth Related Functions

1.7.1 Get Support Bluetooth Profile

Function Description:

This function is used to get support Bluetooth profile.

Function call:

String GetSupportBluetoothProfile()

Return

String: bluetooth Profiles (Write directly)

1.7.2 Get Bluetooth Connection

Function Description:

This function is used to get bluetooth connection.

Function call:

String GetBluetoothConnection()

Return

String: bluetooth connection (Connected/Disconnected)

1.7.3 Get Bluetooth Version

Function Description:

This function is used to get bluetooth version.

Function call:

String GetBluetoothVersion()

Return

String: bluetooth version (Write directly)

5.7. WLAN Related Functions

5.7.1. Get Associated AP

Function Description:

This function is used to get associated AP.

Function call:

String GetAssociatedAP()

Return

String: associated AP or "NONE"

5.7.2. Get WLAN Connection

Function Description: This function is used to get WLAN connection.

Function call:

String GetWLANConnection()

Return

String: WLAN connection (Connected /Disconnected)

5.7.3. Get WLAN Signal

Function Description:

This function is used to get WLAN signal.

Function call:

String GetWLANSignalStrength()

Return

String: WLAN signal (%) or "No Signal"

5.8. WWAN Related Functions

5.8.1. Get Active Network Bearers

Function Description:

This function is used to get active network bearers.

Function call:

String GetActiveNetworkBearers()

Return

String: active network bearers "Not Support" if WiFi-only device

5.8.2. Get Support Network Bearers

Function Description:

This function is used to get support network bearers.

Function call:

String GetSupportNetworkBearers()

Return

String: support network bearers (Write directly)

"Not Support" if WiFi-only device

5.8.3. Get WWAN Signal

Function Description:

This function is used to get WWAN signal.

Function call:

String GetWWANSignal ()

Return

String: WWAN signal (%)

"Not Support" if WiFi-only device

5.9. Hardware Information Related Functions

5.9.1. Get Hardware Vendor

Function Description:

This function is used to get hardware vendor.

Function call: String GetHWVendor()

Return

String: hardware vendor

5.9.2. Get Hardware Model

Function Description:

This function is used to get hardware model.

Function call:

String GetHWModel()

Return

String: hardware model

5.9.3. Get Serial Number

Function Description:

This function is used to get serial number.

Function call:

String GetSerialNumber()

Return

String: serial number

5.10. OS Information Related Functions

5.10.1. Get OS Name

Function Description:

This function is used to get OS name.

Function call:

String GetOSName()

Return

String: OS name (Write directly)

5.10.2. Get OS Version

Function Description:

This function is used to get OS version.

Function call:

String GetOSVersion()

Return

String: OS version

5.10.3. Get Boot Loader Version

Function Description:

This function is used to get boot loader version.

Function call:

String GetBootloaderVersion()

Return

String: boot loader version

5.11. IP Address Related Functions

5.11.1. Get WLAN IP Address

Function Description:

This function is used to get WLAN IP address.

Function call:

String GetWLANIPAddress()

Return

String: WLAN IP address

5.11.2. Get WWAN IP Address

Function Description:

This function is used to get WWAN IP address.

Function call:

String GetWWANIPAddress()

Return

String: WWAN IP address

“Not Support” if WiFi-only device

5.12. Trigger Event Related Functions

5.12.1. Trigger Rule Structure

Structure Description:

This structure is used to set trigger event of built in available memory size.

```
public class TRIGGER_RULE {  
    public int nOperation;  
    public float nValue;  
}
```

Member

nOperation: int: Operation of trigger rule

nValue []: float Value of trigger rule operation

5.12.2. Trigger Built In Available Memory Size Event

Function Description:

This function is used to set trigger event of built in available memory size.

Function call:

```
void SetTriggerBuiltinAvailableMemorySize(  
    int nNumberOfTriggerRules,  
    TRIGGER_RULE pTriggerRuleAry[])
```

Parameter

nNumberOfTriggerRules: [in] int: Number of trigger rules

pTriggerRuleAry[]: [in] Trigger rules to set

5.12.3. Trigger Extension Available Memory Size Event

Function Description:

This function is used to set trigger event of extension available memory size.

Function call:

```
void SetTriggerExtensionAvailableMemorySize(  
    int nNumberOfTriggerRules,  
    TRIGGER_RULE pTriggerRuleAry[])
```

Parameter

nNumberOfTriggerRules: [in] int: Number of trigger rules
pTriggerRuleAry[]: [in] Trigger rules to set

5.12.4. Trigger Available Storage Size Event

Function Description:

This function is used to set trigger event of available storage memory size.

Function call:

```
void SetTriggerAvailableStorageSize (  
int nNumberOfTriggerRules,  
TRIGGER_RULE pTriggerRuleAry[])
```

Parameter

nNumberOfTriggerRules: [in] int: Number of trigger rules
pTriggerRuleAry[]: [in] Trigger rules to set

5.12.5. Trigger CPU Load Event

Function Description:

This function is used to set trigger event of CPU load.

Function call:

```
void SetTriggerCPULoad (  
int nNumberOfTriggerRules,  
TRIGGER_RULE pTriggerRuleAry[])
```

Parameter

nNumberOfTriggerRules: [in] int: Number of trigger rules
pTriggerRuleAry[]: [in] Trigger rules to set

5.12.6. Trigger Battery Temperature Event

Function Description:

This function is used to set trigger event of battery temperature.

Function call:

```
void SetTriggerBatteryTemperature (  
int nNumberOfTriggerRules,  
TRIGGER_RULE pTriggerRuleAry[])
```

Parameter

nNumberOfTriggerRules: [in] int: Number of trigger rules
pTriggerRuleAry[]: [in] Trigger rules to set

5.12.7. Trigger Battery Level Event

Function Description:

This function is used to set trigger event of battery level.

Function call:

```
void SetTriggerBatteryLevel (  
int nNumberOfTriggerRules,  
TRIGGER_RULE pTriggerRuleAry[])
```

Parameter

nNumberOfTriggerRules: [in] int: Number of trigger rules
pTriggerRuleAry[]: [in] Trigger rules to set

5.12.8. Register Replace Service

Function Description:

This function is used to register replace service.

Function call:

```
int RegisterReplaceService (String packageName, String className)
```

Parameter

packageName: [in] int: Input package name
className: [in] int: Input service class name

Return

Int: 0: Failed
1: Success

5.12.9. De-Register Replace Service

Function Description:

This function is used to deregister replace service.

Function call:

void DeregisterReplaceService ()

5.13. Ethernet Related Functions

5.13.1. Get Ethernet IP Address

Function Description:

This function is used to get Ethernet IP address.

Function call:

String GetEthernetIPAddress()

Return

String: Ethernet IP address

5.13.2. Get Ethernet Mask

Function Description:

This function is used to get Ethernet mask.

Function call:

String GetEthernetMask()

Return

String: Ethernet mask

5.13.3. Get Ethernet Gateway IP Address

Function Description:

This function is used to get Ethernet gateway IP address.

Function call:

String GetEthernetGatewayIPAddress()

Return

String: Ethernet gateway IP address

5.13.4. Get Ethernet DNS Server

Function Description:

This function is used to get Ethernet DNS server.

Function call:

String GetEthernetDNSServer()

Return

String: Ethernet DNS server

5.13.5. Get Ethernet MAC Address

Function Description:

This function is used to get Ethernet MAC address.

Function call:

String GetEthernetMACAddress()

Return

String: Ethernet MAC address

6. Unitech API

6.2. Enable/Disable Bluetooth

Description:

This is the way to Enable/Disable Bluetooth.

Bundle:

Key: 001, Value: "Bluetooth", Type: String

Key: enable, Value: true/false, Type: Boolean

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.3. Is Root

Description:

This is the way to check the the authority.

Bundle:

Key: 001, Value: "isRooted", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.4. Install

Description:

This is the way to install apk.

Bundle:

Key: 001, Value: "install [APK Full Path]", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.App

6.5. Update

Description:

This is the way to update apk.

Bundle:

Key: 001, Value: "install -r [APK Full Path]", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.App

6.6. Uninstall

Description:

This is the way to uninstall apk.

Bundle:

Key: 001, Value: "uninstall [full package name]", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.App

6.7. Wireless Connect

Description:

This is the way to connect wireless.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: PreSharedKey, Value: [Password], Type: String

Key: 001, Value: "setPreSharedKey", Type: String

Key: 002, Value: "addNetwork", Type: String

Key: 003, Value: "enableNetwork", Type: String

Intent:

PackageName: com.ute.eu.unitechapi
ClassName: com.ute.eu.unitechapi.Wifi

6.8. Wireless Disconnect

Description:

This is the way to disconnect with wireless.

Bundle:

Key: SSID, Value: "[SSID]", Type: String
Key: 001, Value: "removeNetwork", Type: String

Intent:

PackageName: com.ute.eu.unitechapi
ClassName: com.ute.eu.unitechapi.Wifi

6.9. Get Wireless IP Address

Description:

This is the way to get current IP address.

Bundle:

Key: 001, Value: "getCurrentIP", Type: String

Intent:

PackageName: com.ute.eu.unitechapi
ClassName: com.ute.eu.unitechapi.Wifi

6.10. Get Wireless SSID

Description:

This is the way to get current connected SSID.

Bundle:

Key: 001, Value: "getCurrentSSID", Type: String

Intent:

PackageName: com.ute.eu.unitechapi
ClassName: com.ute.eu.unitechapi.Wifi

6.11. Get Security Level

Description:

This is the way to get wireless security level.

Bundle:

Key: SSID, Value: "[SSID]", Type: String
Key: 001, Value: "getLinkSecurityLevel", Type: String

Intent:

PackageName: com.ute.eu.unitechapi
ClassName: com.ute.eu.unitechapi.Wifi

6.12. Get Pre-Shared Key

Description:

This is the way to get pre-shared key.

Bundle:

Key: SSID, Value: "[SSID]", Type: String
Key: 001, Value: "getPreSharedKey", Type: String

Intent:

PackageName: com.ute.eu.unitechapi
ClassName: com.ute.eu.unitechapi.Wifi

6.13. Clear Application Data

Description:

This is the way to clear application data.

Bundle:

Key: Package, Value: "[PackageName]", Type: String
Key: 001, Value: "clearApplicationData", Type: String

Intent:

PackageName: com.ute.eu.unitechapi
ClassName: com.ute.eu.unitechapi.Util

6.14. Enable/Disable Non-Market Application Install

Description:

This is the way to Enable/Disable non-market application install.

Bundle:

Key: 001, Value: "installNonMarketApps", Type: String

Key: enable, Value: true/false, Type: Boolean

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.15. Enable/Disable OTA OS Update

Description:

This is the way to Enable/Disable OTA OS update.

Bundle:

Key: enable, Value: true/false, Type: Boolean

Intent:

Action: intent.genericupdate.switch

PackageName: com.innocomm.genericupdate

ClassName: com.innocomm.genericupdate.ControllReceiver

6.16. OTA OS Update Auto Start

Description:

This is the way to auto start OTA OS update.

Bundle:

Key: auto, Value: true/false, Type: Boolean

Key: specificPath, Value: "[File Path]", Type: Boolean

Intent:

Action: Intent.ACTION_VIEW

Flag: Intent.FLAG_ACTIVITY_NEW_TASK

PackageName: com.innocomm.genericupdate

ClassName: com.innocomm.genericupdate.UpdateActivity

6.17. Enable/Disable Applications

Description:

This is the way to Enable/Disable applications.

Bundle:

Key: Package, Value: "[Array of Package Name]", Type: StringArray

Key: enable, Value: true/false, Type: Boolean

Key: 001, Value: "enableApplications", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.18. Enable/Disable NFC

Description:

This is the way to Enable/Disable NFC.

Bundle:

Key: 001, Value: "enableNFC", Type: String

Key: enable, Value: true/false, Type: Boolean

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.19. Enable/Disable USB Debugging

Description:

This is the way to Enable/Disable USB debugging.

Bundle:

Key: 001, Value: "USBdebugging", Type: String

Key: enable, Value: true/false, Type: Boolean

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.20. Install OS Package

Description:

This is the way to install OS package.

Bundle:

Key: 001, Value: "installOSpackage", Type: String

Key: Package, Value: [File Path], Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.21. Reboot

Description:

This is the way to reboot device.

Bundle:

Key: 001, Value: "reboot", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.22. Enable/Disable GPS

Description:

This is the way to Enable/Disable GPS.

Bundle:

Key: 001, Value: "enableGPS", Type: String

Key: enable, Value: true/false, Type: Boolean

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.23. Factory Reset

Description:

This is the way to factory reset.

Bundle:

Key: 001, Value: "factoryReset", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.24. Enable/Disable WiFi

Description:

This is the way to Enable/Disable WiFi.

Bundle:

Key: 001, Value: "enableWiFi", Type: String

Key: enable, Value: true/false, Type: Boolean

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.25. Enable/Disable Airplane Mode

Description:

This is the way to Enable/Disable airplane mode.

Bundle:

Key: 001, Value: "airplaneMode", Type: String

Key: enable, Value: true/false, Type: Boolean

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.26. Set System Time

Description:

This is the way to set system time.

Bundle:

Key: 001, Value: "setTime", Type: String

Key: datetimestring, Value: "setTime", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.27. Install Certificate

Description:

This is the way to install certificate.

Bundle:

Key: 001, Value: "installCertificate", Type: String

Key: file, Value: "[File Path]", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Util

6.28. Get Password

Description:

This is the way to get password.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: 001, Value: "getPassword", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.29. Set Password

Description:

This is the way to set password.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: Password, Value: "[Password]", Type: String

Key: 001, Value: "setPassword", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.30. Get Identity

Description:

This is the way to get identity.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: 001, Value: "getIdentity", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.31. Set Identity

Description:

This is the way to Set identity.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: Identity, Value: "[Identity]", Type: String

Key: 002, Value: "setIdentity", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.32. Get Anonymous Identity

Description:

This is the way to get anonymous identity.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: 001, Value: "getAnonymousIdentity", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.33. Set Anonymous Identity

Description:

This is the way to set anonymous identity.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: anonymousIdentity, Value: "[Identity]", Type: String

Key: 001, Value: "setAnonymousIdentity", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.34. Get Phase 2 Method

Description:

This is the way to get phase 2 method.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: 001, Value: "getPhase2Method", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.35. Set Phase 2 Method

Description:

This is the way to set phase 2 method.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: Phase2Method, Value: "[Phase 2 Method]", Type: String

Key: 001, Value: "getPhase2Method", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.36. Get Client Certificate

Description:

This is the way to get client certificate.

Bundle:

Key: 001, Value: "getClientCertificate", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.37. Set Client Certificate

Description:

This is the way to set client certificate.

Bundle:

Key: 001, Value: "setClientCertificate", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.38. Get CA Certificate

Description:

This is the way to get CA certificate.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: 001, Value: "getCaCertificate", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.39. Set CA Certificate

Description:

This is the way to set CA certificate.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: CaCertificateFile, Value: "[Certificate File]", Type: String

Key: 001, Value: "setCaCertificate", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.40. Get EAP Method

Description:

This is the way to get EAP method.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: 001, Value: "getEapMethod", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.41. Set EAP Method

Description:

This is the way to set EAP method.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: EapMethod, Value: "[EAP Method]", Type: String

Key: 001, Value: "setEapMethod", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.42. Get Subject Match

Description:

This is the way to get subject match.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: 001, Value: "getSubjectMatch", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.43. Set Subject Match

Description:

This is the way to set subject match.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: subjectMatch, Value: "[Subject Match]", Type: String

Key: 001, Value: "setSubjectMatch", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.44. Set Allowed Key Management

Description:

This is the way to set allowed key management.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: KeyManagement, Value: "[Key Management]", Type: String

Key: 001, Value: "setAllowedKeyManagement", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.45. Set Allowed Protocols

Description:

This is the way to set allowed protocols.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: Protocol, Value: "[Protocol]", Type: String

Key: 001, Value: "setAllowedProtocols", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.46. Set Allowed Pairwise Ciphers

Description:

This is the way to set allowed pairwise ciphers.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: PairwiseCipher, Value: "[Pairwise Cipher]", Type: String

Key: 001, Value: "setAllowedPairwiseCiphers", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.47. Set Allowed Group Ciphers

Description:

This is the way to set allowed group ciphers.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: GroupCipher, Value: "[Group Cipher]", Type: String

Key: 001, Value: "setAllowedGroupCiphers", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.48. Get WEP Tx Key Index

Description:

This is the way to get WEP Tx key index.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: 001, Value: "getWepTxKeyIndex", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.49. Set WEP Tx Key Index

Description:

This is the way to set WEP Tx key index.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: wepTxKeyIndex, Value: "[Key Index]", Type: Int

Key: 001, Value: "setWepTxKeyIndex", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.50. Get WEP Key

Description:

This is the way to get WEP key.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: wepKeyIndex, Value: "[Key Index]", Type: Int

Key: 001, Value: "getWepKey", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

6.51. Set WEP Key

Description:

This is the way to set WEP key.

Bundle:

Key: SSID, Value: "[SSID]", Type: String

Key: wepKeyIndex, Value: "[Key Index]", Type: Int

Key: 001, Value: "setWepKey", Type: String

Intent:

PackageName: com.ute.eu.unitechapi

ClassName: com.ute.eu.unitechapi.Wifi

7. Unitech Battery API

This section described all the extra battery information which can be retrieved from the extra values in the ***Intent.ACTION_BATTERY_CHANGED*** intent. Developer will need to register a BroadcastReceiver to wait for the ***Intent.ACTION_BATTERY_CHANGED*** intent and get the information when the intent occurred.

7.2. State of Health

Description:

This information shows the current battery's state-of-health (SOH) information in percentage of design capacity. It can be retrieved from the ***"state_of_health"*** extra value in received ***Intent.ACTION_BATTERY_CHANGED*** Intent.

Value Format:

String, From "0" to "100"

Sample:

```
private BroadcastReceiver mBroadcastReceiver = new BroadcastReceiver() {
    @Override
    public void onReceive(Context context, Intent intent) {
        String action = intent.getAction();
        if (action.equals(Intent.ACTION_BATTERY_CHANGED)) {
            String state_of_health = intent.getStringExtra("state_of_health");
        }
    }
};
```

7.3. Cycle Count

Description:

This information shows the number of discharge cycles the battery has experienced. It can be retrieved from the ***"cycle"*** extra value in received ***Intent.ACTION_BATTERY_CHANGED*** Intent.

Value Format:

String, From "0" to "65535"

Sample:

```
private BroadcastReceiver mBroadcastReceiver = new BroadcastReceiver() {
    @Override
    public void onReceive(Context context, Intent intent) {
        String action = intent.getAction();
        if (action.equals(Intent.ACTION_BATTERY_CHANGED)) {
            String cycle_count = intent.getStringExtra("cycle");
        }
    }
};
```

7.4. Serial Number

Description:

This information shows the serial number of current using battery. It can be retrieved from the ***"serial_number"*** extra value in received ***Intent.ACTION_BATTERY_CHANGED*** Intent

Value Format:

String, From "00000" to "65535"

Sample:

```
private BroadcastReceiver mBroadcastReceiver = new BroadcastReceiver() {
    @Override
    public void onReceive(Context context, Intent intent) {
        String action = intent.getAction();
        if (action.equals(Intent.ACTION_BATTERY_CHANGED)) {
```

```
        String serial_number = intent.getStringExtra("serial_number");
    }
}
};
```

7.5. Manufacture Date

Description:

This information shows the manufacturer date of current using battery. It can be retrieved from the "**manufacture_date**" extra value in received **Intent.ACTION_BATTERY_CHANGED** Intent

Value Format:

String of date in "YYYY-MM-DD" format

Sample:

```
private BroadcastReceiver mBroadcastReceiver = new BroadcastReceiver() {
    @Override
    public void onReceive(Context context, Intent intent) {
        String action = intent.getAction();
        if (action.equals(Intent.ACTION_BATTERY_CHANGED)) {
            String manufacture_date = intent.getStringExtra("manufacture_date");
        }
    }
};
```

8. Others API

8.2. Serial Number

Description:

This is the way to get device's serial number for PA726 only.

Exapmle:

```
Class<?> c = Class.forName("android.os.SystemProperties");  
Method get = c.getMethod("get", String.class, String.class );  
String value = (String)(get.invoke(c, "persist.sys.unitech.ro.serialno", "unknown" ));
```

9. Appendix of Scanservice

9.2. Code ID Table

If device is PA700, PA726, PA760 1D , please refer Zebra Code ID.

If device is PA760 2D , please refer Honeywell Code ID.

Symbology Name	Zebra Code ID	Honeywell Code ID	EX25 Code ID
Code 39	0x01	0x62	0x0D
UPC-A	0x08	0x63	0x03
UPC-E	0x09	0x45	0x04
EAN-13/JAN-13	0x0B	0x64	0x01
EAN-8/JAN-8	0x0A	0x44	0x02
Discrete 2 of 5	0x04		
Interleaved 2 of 5	0x06	0x65	0x0F
Codabar	0x02	0x61	0x13
Code 128	0x03	0x6A	0x17
Code 93	0x07	0x69	0x19
Code 11	0x0C	0x68	0x1A
MSI	0x0E	0x67	0x15
UPC-E1	0x10	0x45	
Trioptic Code 39	0x15	0x3D	0x47
GS1-128 (formerly UCC/EAN-128)	0x0F	0x49	0x22
PDF417	0x11	0x72	0x21
Code 39 Full ASCII Conversion	0x13		
Bookland EAN	0x16		0x3C
ISBT 128	0x19		0x23
UCC Coupon Extended Code		0x3B	
Convert Code 39 to Code 32	0x20	0x3C	0x1D
US Postnet	0x1E	0x50	0x3D
US Planet	0x1F	0x4C	0x3E
UK Postal	0x27		
MicroPDF417	0x1A	0x52	0x24
Japan Postal	0x22	0x4A	0x42
Australia Post	0x23	0x41	0x41
Data Matrix	0x1B	0x77	0x28
QR Code	0x1C	0x73	0x29
Maxicode	0x25	0x78	0x2A
Netherlands KIX Code(Dutch Postal)	0x24	0x4B	0x43
GS1 DataBar-14	0x30	0x79	0x25
GS1 DataBar Limited	0x31	0x7B	0x26

GS1 DataBar Expanded	0x32	0x7D	0x27
Chinese 2 of 5	0x72		
MicroQR	0x2C	0x73	
Aztec	0x2D	0x7A	0x4A
Korean 3 of 5	0x73	0x3F	0x45
USPS 4CB/One Code/Intelligent Mail	0x34	0x4D	
UPU FICS Postal	0x35	0x4E	
ISSN EAN	0x36		0x49
Matrix 2 of 5	0x39	0x6D	0x11
Han Xin	0xB7	0x48	0x50
Dot Code		0x2E	
OCR		0x4F	
IATA	0x05		
Code 49	0x0D		
Code 16K	0x12		
UPC-D	0x14		
Coupon Code	0x17		
NW-7	0x18		
Micro PDF CCA	0x1D		
ISBT-128 Con	0x21		
Canadian Postal	0x26		
Macro PDF	0x28		
Macro QR	0x29		
Aztec Rune	0x2E		
Scanlet	0x37		
CueCode	0x38		
UPC-A + 2 Supplemental	0x48		
UPC-E0 + 2 Supplemental	0x49		
EAN-8 + 2 Supplemental	0x4A		
EAN-13 + 2 Supplemental	0x4B		
UPC-E1 + 2 Supplemental	0x50		
CCA EAN-128	0x51		0x2E
CCA EAN-13	0x52		0x2F
CCA EAN-8	0x53		0x30
CCA GS1 DataBar Expanded	0x54		0x2D
CCA GS1 DataBar Limited	0x55		0x2C
CCA GS1 DataBar-14	0x56		0x2B
CCA UPC-A	0x57		0x31
CCA UPC-E	0x58		0x32
CCC EAN-128	0x59		0x3B
TLC-39	0x5A	0x54	0x46
CCB EAN-128	0x61		0x36

CCB EAN-13	0x62		0x37
CCB EAN-8	0x63		0x38
CCB GS1 DataBar Expanded	0x64		0x35
CCB GS1 DataBar Limited	0x65		0x34
CCB GS1 DataBar-14	0x66		0x33
CCB UPC-A	0x67		0x39
CCB UPC-E	0x68		0x3A
Signature Capture	0x69		
UPC-A + 5 supplemental	0x88		
UPC-E0 + 5 supplemental	0x89		
EAN-8 + 5 supplemental	0x8A		
EAN-13 + 5 supplemental	0x8B		
UPC-E1 + 5 Supplemental	0x90		
Macro Micro PDF	0x9A		
GS1 Databar Coupon	0xB4		

9.3. AIM ID Table

Please refer to **Zebra** or **Honeywell** website.

9.4. Command Table

Command Name	PA726 1D	PA760 1D	PA726 2D	PA760 2D	Show
UPC-A 2 Digit Addenda				0	V
UPC-A 5 Digit Addenda				0	V
UPC-A Addenda Required				0	V
UPC-A Addenda Separator				0	V
UPC-E0 2 Digit Addenda				0	V
UPC-E0 5 Digit Addenda				0	V
UPC-E0 Addenda Required				0	V
UPC-E0 Addenda Separator				0	V
EAN-8 2 Digit Addenda				0	V
EAN-8 5 Digit Addenda				0	V
EAN-8 Addenda Required				0	V
EAN-8 Addenda Separator				0	V
EAN-13 2 Digit Addenda				0	V
EAN-13 5 Digit Addenda				0	V
EAN-13 Addenda Required				0	V
EAN-13 Addenda Separator				0	V
EAN-8 Transmit Check Digit				1	V
EAN-13 Transmit Check Digit				1	V
Dot Code				1	V
OCR Enable				0	V
OCR Mode				3	V
OCR Template				2	V

Parameter Number	Command Name	PA726 1D	PA760 1D	PA726 2D	PA760 2D	PA760 EX25
0	Enable/Disable Code 39	1	1	1	1	1
1	Enable/Disable UPC-A	1	1	1	1	1
2	Enable/Disable UPC-E	1	1	1	1	1
3	Enable/Disable EAN-13/JAN-13	1	1	1	1	1
4	Enable/Disable EAN-8/JAN-8	1	1	1	1	1
5	Enable/Disable Discrete 2 of 5	0	0	0		
6	Enable/Disable Interleaved 2 of 5	1	1	1	1	1
7	Enable/Disable Codabar	0	0	0	1	1

8	Enable/Disable Code 128	1	1	1	1	1
9	Enable/Disable Code 93	0	0	0	0	0
10	Code 11	0	0	0	0	0
11	Enable/Disable MSI	0	0	0	0	0
12	Enable/Disable UPC-E1	0	0	0	0	0
13	Enable/Disable Trioptic Code 39	0	0	0	0	
14	Enable/Disable GS1-128 (formerly UCC/EAN-128)	1	1	1	1	1
15	Enable/Disable PDF417			1	1	1
16	Decode UPC/EAN/JAN Supplementals	0	0	0		
17	Code 39 Full ASCII Conversion	0	0	0	0	0
18	Set Lengths for Code 39 Length1 Parameter	2	2	2	0	0
19	Set Lengths for Code 39 Length2 Parameter	55	55	55	80	48
20	Set Lengths for Discrete 2 of 5 Length1 Parameter	12	12	12		
21	Set Lengths for Discrete 2 of 5 Length2 Parameter	0	0	0		
22	Set Lengths for Interleaved 2 of 5 Length1 Parameter	14	14	14	4	4
23	Set Lengths for Interleaved 2 of 5 Length2 Parameter	0	0	0	80	80
24	Set Lengths for Codabar Length1 Parameter	5	5	5	4	4
25	Set Lengths for Codabar Length2 Parameter	55	55	55	60	60
26	Set Lengths for Code 93 Length1 Parameter	4	4	4	0	0
27	Set Lengths for Code 93 Length2 Parameter	55	55	55	80	80
28	Set Lengths for Code 11 Length1 Parameter	4	4	4	4	4
29	Set Lengths for Code 11 Length2 Parameter	55	55	55	80	80
30	Set Lengths for MSI Length1 Parameter	6	6	4	4	4
31	Set Lengths for MSI Length2 Parameter	55	55	55	48	48
34	UPC-A Preamble	1	1	1	1	1
35	UPC-E Preamble	1	1	1	1	1
36	UPC-E1 Preamble	1	1	1		
37	Convert UPC-E to UPC-A	0	0	0	0	0
38	Convert UPC-E1 to UPC-A	0	0	0		

39	EAN-8/JAN-8 Extend	0	0	0		
40	Transmit UPC-A Check Digit	1	1	1	1	1
41	Transmit UPC-E Check Digit	1	1	1	1	1
42	Transmit UPC-E1 Check Digit	1	1	1		
43	Transmit Code 39 Check Digit	0	0	0		0
44	Transmit I 2 of 5 Check Digit	0	0	0		0
45	Transmit Code ID Character	0	0	0		
46	Transmit MSI Check Digit(s)	0	0	0		0
47	Transmit Code 11 Check Digits	0	0	0		0
48	Code 39 Check Digit Verification	0	0	0	0	0
49	I 2 of 5 Check Digit Verification	0	0	0	0	0
50	MSI Check Digits	0	0	0		
51	MSI Check Digit Algorithm	1	1	1	0	1
52	Code 11 Check Digit Verification	0	0	0	2	1
54	CLSI Editing	0	0	0		0
55	NOTIS Editing	0	0	0	1	
82	Convert I 2 of 5 to EAN-13	0	0	0		
83	Enable/Disable Bookland EAN	0	0	0		
84	Enable/Disable ISBT 128	1	1	1	1	1
85	UCC Coupon Extended Code	0	0	0	0	
86	Convert Code 39 to Code 32	0	0	0	0	*(1)
89	US Postnet			1	0	0
90	US Planet			1	0	
91	UK Postal			1		
94	Transmit "No Read" Message			0		
95	Transmit US Postal Check Digit			1		
96	Transmit UK Postal Check Digit			1		
123	Code 128 Emulation			0		
136	Decode Session Timeout	30	30	99		
137	Timeout Between Decodes, Same Symbol			6		
138	Trigger Mode	0	0	0		
209	Set Lengths for Code 128 Length1 Parameter	1	1	0	0	0
210	Set Lengths for Code 128 Length2 Parameter	55	55	0	80	80
227	Enable/Disable MicroPDF417			0	0	0
231	Code 32 Prefix	0	0	0		
290	Japan Postal			1	0	0
291	Australia Post			1	0	0
292	Data Matrix			1	1	1
293	QR Code			1	1	1
294	Maxicode			1	1	1

326	Netherlands KIX Code			1	0	0
338	GS1 DataBar-14	1	1	1	1	1
339	GS1 DataBar Limited	1	1	0	1	1
340	GS1 DataBar Expanded	1	1	0	1	1
341	Composite CC-C			0	0	0
342	Composite CC-A/B			0		
371	Composite TLC-39			0	0	0
397	Convert GS1 DataBar to UPC/EAN	0	0	0		
	Picklist Mode			0		
408	Enable/Disable Chinese 2 of 5	0	0	0		
573	MicroQR			1		
574	Aztec			1	1	1
576	Bookland ISBN Format	0		0		
586	Inverse 1D	0		0		
588	Data Matrix Inverse			0		
589	Aztec Inverse			0		
592	USPS 4CB/One Code/Intelligent Mail			0	0	
611	UPU FICS Postal			0	0	
617	ISSN EAN	0	0	0		
618	Enable/Disable Matrix 2 of 5	0	0	0	0	0
619	Set Lengths for Matrix 2 of 5 Length1 Parameter	14	14	14	4	4
620	Set Lengths for Matrix 2 of 5 Length2 Parameter	0	0	0	80	80
622	Matrix 2 of 5 Check Digit	0	0	0		
623	Transmit Matrix 2 of 5 Check Digit	0	0	0		
680	OCR-A			0		
681	OCR-B			0		
682	MICR E13B			0		
683	US Currency			0		
685	OCR-B Variant			0		
687	OCR Orientation			4		
716	Mobile Phone/Display Mode			0		
764	Illumination Power Level			10		
856	Inverse OCR			0		
900	Multi Decode Mode			0		
901	Full Read Mode			1		
902	Bar Codes to Read			1		
1167	Han Xin			0	0	0
1168	Han Xin Inverse			0		
3001	UPC-A 2 Digit Addenda				0	0
3002	UPC-A 5 Digit Addenda				0	0

3003	UPC-A Addenda Required				0	0
3004	UPC-A Addenda Separator				0	
3005	UPC-E0 2 Digit Addenda				0	0
3006	UPC-E0 5 Digit Addenda				0	0
3007	UPC-E0 Addenda Required				0	0
3008	UPC-E0 Addenda Separator				0	
3009	EAN-8 2 Digit Addenda				0	0
3010	EAN-8 5 Digit Addenda				0	0
3011	EAN-8 Addenda Required				0	0
3012	EAN-8 Addenda Separator				0	
3013	EAN-13 2 Digit Addenda				0	0
3014	EAN-13 5 Digit Addenda				0	0
3015	EAN-13 Addenda Required				0	0
3016	EAN-13 Addenda Separator				0	
3017	EAN-8 Transmit Check Digit				1	1
3018	EAN-13 Transmit Check Digit				1	1
3019	Dot Code				1	
3020	OCR Enable				0	
3021	OCR Mode				3	
3022	OCR Template				2	

Noted:

*(1) : This function is include in command 48 option 3 "Italian CIP(Code32)"

9.5. Command information

UPC/EAN

Enable/Disable UPC-A

SSI # 01h

Parameter # 1

To enable or disable UPC-A.

*Enable UPC-A

(01h)

Disable UPC-A

(00h)

Enable/Disable UPC-E

SSI # 02h

Parameter # 2

To enable or disable UPC-E.

*Enable UPC-E

(01h)

Disable UPC-E

(00h)

Enable/Disable UPC-E1

SSI # 0Ch

Parameter # 12

UPC-E1 is disabled by default.

To enable or disable UPC-E1.

Enable UPC-E1

(01h)

*Disable UPC-E1

(00h)

Enable/Disable EAN-8/JAN-8

SSI # 04h

Parameter # 4

To enable or disable EAN-8/JAN-8.

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

*Enable EAN-8/JAN-8

(01h)

Disable EAN-8/JAN-8

(00h)

Enable/Disable EAN-13/JAN-13

SSI # 03h

Parameter # 3

To enable or disable EAN-13/JAN-13.

*Enable EAN-13/JAN-13

(01h)

Disable EAN-13/JAN-13

(00h)

Enable/Disable Bookland EAN

SSI # 53h

Parameter # 83

To enable or disable Bookland EAN. **Enable Bookland EAN**

(01h)

*Disable Bookland EAN

(00h)

Bookland ISBN Format

SSI # F1h 40h

Parameter # 576

If Bookland EAN is enabled, select one of the following formats for Bookland data:

- **Bookland ISBN-10** - The decoder reports Bookland data starting with 978 in traditional 10-digit format with the special Bookland check digit for backward-compatibility. Data starting with 979 is not considered Bookland in this mode.
- **Bookland ISBN-13** - The decoder reports Bookland data (starting with either 978 or 979) as EAN-13 in 13-digit format to meet

the 2007 ISBN-13 protocol.

***Bookland ISBN-10**

(00h)

Bookland ISBN-13

(01h)

Decode UPC/EAN/JAN Supplementals

SSI # 16

Parameter # 10h

Decode UPC/EAN/JAN Only With Supplementals

(01h)

***Ignore Supplementals**

(00h)

Autodiscriminate UPC/EAN/JAN Supplementals

(02h)

Enable 378/379 Supplemental Mode

(04h)

Enable 978/979 Supplemental Mode

(05h)

Enable 977 Supplemental Mode

(07h)

Enable 414/419/434/439 Supplemental Mode

(06h)

Enable 491 Supplemental Mode

(08h)

Enable Smart Supplemental Mode

(03h)

Transmit UPC-A Check Digit

SSI # 28h

Parameter # 40

The check digit is the last character of the symbol used to verify the integrity of the data. It is always verified to guarantee the integrity of the data.

***Transmit UPC-A Check Digit**

(01h)

Do Not Transmit UPC-A Check Digit

(00h)

Transmit UPC-E Check Digit

SSI # 29h

Parameter # 41

The check digit is the last character of the symbol used to verify the integrity of the data. It is always verified to guarantee the integrity of the data.

***Transmit UPC-E Check Digit**

(01h)

Do Not Transmit UPC-E Check Digit

(00h)

Transmit UPC-E1 Check Digit

SSI # 2Ah

Parameter # 42

The check digit is the last character of the symbol used to verify the integrity of the data. It is always verified to guarantee the integrity of the data.

***Transmit UPC-E1 Check Digit**

(01h)

Do Not Transmit UPC-E1 Check Digit

(00h)

UPC-A Preamble

SSI # 22h

Parameter # 34

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.

No Preamble (<DATA>)

(00h)

***System Character (<SYSTEM CHARACTER> <DATA>)**

(01h)

System Character & Country Code

(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(02h)

UPC-E Preamble

SSI # 23h

Parameter # 35

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.

No Preamble (<DATA>)
(00h)

***System Character (<SYSTEM CHARACTER> <DATA>)**
(01h)

System Character & Country Code

(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(02h)

UPC-E1 Preamble

SSI # 24h

Parameter # 36

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.

No Preamble (<DATA>)
(00h)

***System Character (<SYSTEM CHARACTER> <DATA>)**
(01h)

System Character & Country Code

(< COUNTRY CODE> <SYSTEM CHARACTER> <DATA>)
(02h)

Convert UPC-E to UPC-A

SSI # 25h

Parameter # 37

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).

Disable this to transmit UPC-E decoded data as UPC-E data, without conversion.

Convert UPC-E to UPC-A (Enable)
(01h)

***Do Not Convert UPC-E to UPC-A (Disable)**
(00h)

Convert UPC-E1 to UPC-A

SSI # 26h

Parameter # 38

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).

Disable this to transmit UPC-E1 decoded data as UPC-E1 data, without conversion.

Convert UPC-E1 to UPC-A (Enable)
(01h)

***Do Not Convert UPC-E1 to UPC-A (Disable)**
(00h)

EAN-8/JAN-8 Extend

SSI # 27h

Parameter # 39

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.

Enable EAN/JAN Zero Extend
(01h)

***Disable EAN/JAN Zero Extend**
(00h)

UCC Coupon Extended Code

SSI # 55h

Parameter # 85

Enable this parameter to decode UPC-A bar codes starting with digit '5', EAN-13 bar codes starting with digit '99', and UPC-A/GS1-128 Coupon Codes. UPCA, EAN-13, and GS1-128 must be enabled to scan all types of Coupon Codes.

Enable UCC Coupon Extended Code
(01h)

***Disable UCC Coupon Extended Code**
(00h)

Coupon Report

SSI # F1h DAh

Parameter # 730

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.

- **Old Coupon Symbols** - Scanning an old coupon symbol reports both UPC and Code 128, scanning an interim coupon symbol reports UPC, and scanning a new coupon symbol reports nothing (no decode).

- **New Coupon Symbols** - Scanning an old coupon symbol reports either UPC or Code 128, and scanning an interim coupon symbol or a new coupon symbol reports Databar Expanded.

- **Both Coupon Formats** - Scanning an old coupon symbol reports both UPC and Code 128, and scanning an interim coupon symbol or a new coupon symbol reports Databar Expanded.

NOTE The behavior described above applies when **UCC Coupon Extended Code** (parameter # 55) is enabled. If disabled (default) then new coupons (GS1 Databar Expanded starting with 8110) decodes as a normal GS1 Expanded (RSS) bar code.

Old Coupon Symbols

(00h)

***New Coupon Symbols**

(01h)

Both Coupon Formats

(02h)

ISSN EAN

SSI # F1h 69h

Parameter # 617

To enable or disable ISSN EAN.

Enable ISSN EAN

(01h)

***Disable ISSN EAN**

(00h)

Code 128

Enable/Disable Code 128

SSI # 08h

Parameter # 8

To enable or disable Code 128.

***Enable Code 128**

(01h)

Disable Code 128

(00h)

Set Lengths for Code 128

SSI #L1 = D1h, L2 = D2h

Parameter # 209, 210

GS1-128 (formerly UCC/EAN-128)

SSI # 0Eh

Parameter # 14

To enable or disable GS1-128.

***Enable GS1-128**

(01h)

Disable GS1-128

(00h)

ISBT 128

SSI # 54h

Parameter # 84

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

***Enable ISBT 128**

(01h)
Disable ISBT 128
(00h)

ISBT Concatenation

SSI # F1h 41h
Parameter # 577

Select an option for concatenating pairs of ISBT code types:

- If you select **Disable ISBT Concatenation**, the decoder does not concatenate pairs of ISBT codest encounters.
- If you select **Enable ISBT Concatenation**, there must be two ISBT codes in order for the decoder to decode and perform concatenation. The decoder does not decode single ISBT symbols.
- If you select **Autodiscriminate ISBT Concatenation**, the decoder decodes and concatenates pairs of ISBT codes immediately. If only a single ISBT symbol is present, the decoder 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.

*Disable ISBT Concatenation

(00h)
Enable ISBT Concatenation
(01h)
Autodiscriminate ISBT Concatenation
(02h)

Check ISBT Table

SSI # F1h 42h
Parameter # 578

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

*Enable Check ISBT Table

(01h)
Disable Check ISBT Table
(00h)

Code 39

Enable/Disable Code 39

SSI # 00h
Parameter # 0

To enable or disable Code 39.

*Enable Code 39

(01h)
Disable Code 39
(00h)

Enable/Disable Trioptic Code 39

SSI # 0Dh
Parameter # 13

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. To enable or disable Trioptic Code 39.

Enable Trioptic Code 39

(01h)
*Disable Trioptic Code 39

(00h)
NOTE You cannot enable Trioptic Code 39 and Code 39 Full ASCII simultaneously.

Convert Code 39 to Code 32

SSI # 56h
Parameter # 86

Code 32 is a variant of Code 39 used by the Italian pharmaceutical industry.

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

Enable Convert Code 39 to Code 32

(01h)
*Disable Convert Code 39 to Code 32

(00h)
Code 32 Prefix

SSI # E7h
Parameter # 231

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

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

Enable Code 32 Prefix
(01h)

***Disable Code 32 Prefix**
(00h)

Set Lengths for Code 39

SSI # L1 = 12h, L2 = 13h

Parameter # 18, 19

Code 39 Check Digit Verification

SSI # 30h

Parameter # 48

Enable this feature 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.

Enable Code 39 Check Digit
(01h)

***Disable Code 39 Check Digit**
(00h)

Transmit Code 39 Check Digit

SSI # 2Bh

Parameter # 43

Transmit Code 39 data with or without the check digit.

Transmit Code 39 Check Digit (Enable)
(01h)

***Do Not Transmit Code 39 Check Digit (Disable)**
(00h)

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

Code 39 Full ASCII Conversion

SSI # 11h

Parameter # 17

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

Enable Code 39 Full ASCII
(01h)

***Disable Code 39 Full ASCII**
(00h)

NOTE You cannot enable Trioptic Code 39 and Code 39 Full ASCII simultaneously.

Code 93

Enable/Disable Code 93

SSI # 09h

Parameter # 9

To enable or disable Code 93.

Enable Code 93
(01h)

***Disable Code 93**
(00h)

Set Lengths for Code 93

SSI # L1 = 1Ah, L2 = 1Bh

Parameter # 26, 27

Code 11

Code 11

SSI # 0Ah

Parameter # 10

To enable or disable Code 11.

Enable Code 11
(01h)

***Disable Code 11**
(00h)

Set Lengths for Code 11

SSI # L1 = 1Ch, L2 = 1Dh

Parameter # 28, 29

Code 11 Check Digit Verification

SSI # 34h

Parameter # 52

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. The options are to check for one check digit, check for two check digits, or disable the feature.

*Disable

(00h)

One Check Digit

(01h)

Two Check Digits

(02h)

Transmit Code 11 Check Digits

SSI # 2Fh

Parameter # 47

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

Transmit Code 11 Check Digit(s) (Enable)

(01h)

*Do Not Transmit Code 11 Check Digit(s) (Disable)

(00h)

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

Interleaved 2 of 5 (ITF)

Enable/Disable Interleaved 2 of 5

SSI # 06h

Parameter # 6

To enable or disable Interleaved 2 of 5.

Enable Interleaved 2 of 5

(01h)

*Disable Interleaved 2 of 5

(00h)

Set Lengths for Interleaved 2 of 5

SSI # L1 = 16h, L2 = 17h

Parameter # 22, 23

I 2 of 5 Check Digit Verification

SSI # 31h

Parameter #

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.

*Disable

(00h)

USS Check Digit

(01h)

OPCC Check Digit

(02h)

Transmit I 2 of 5 Check Digit

SSI # 2Ch

Parameter #

Transmit I 2 of 5 data with or without the check digit.

Transmit I 2 of 5 Check Digit (Enable)

(01h)

*Do Not Transmit I 2 of 5 Check Digit (Disable)

(00h)

Convert I 2 of 5 to EAN-13

SSI # 52h

Parameter #

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.

Convert I 2 of 5 to EAN-13 (Enable)

(01h)

*Do Not Convert I 2 of 5 to EAN-13 (Disable)

(00h)

I 2 of 5 Security Level

SSI # 461h

Parameter

Interleaved 2 of 5 bar codes are vulnerable to misdecodes by the nature of the symbol, especially when **Any Length** is set for Interleaved 2 of 5 bar codes. The decoder offers four levels of decode security for Interleaved 2 of 5 bar codes. There is an inverse relationship between security and decoder aggressiveness. Increasing the level of security may result in reduced aggressiveness in scanning, so select only the level of security necessary.

- **I 2 of 5 Security Level 0:** This setting allows the decoder to operate in its most aggressive state, while providing sufficient security in decoding the most in-spec bar codes.
- **I 2 of 5 Security Level 1:** A bar code must be successfully read twice, and satisfy certain safety requirements before being decoded. This default setting eliminates most misdecodes.
- **I 2 of 5 Security Level 2:** Select this option with higher safety requirements to the bar codes if **Security Level 1** fails to eliminate misdecodes.
- **I 2 of 5 Security Level 3:** If you selected **Security Level 2**, and misdecodes still occur, select this security level. The highest safety requirements are applied. A bar code must be successfully read three times before being decoded.
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 decoder. If this level of security is required, it is recommended that you try to improve the quality of the bar codes.

I 2 of 5 Security Level 0

(00h)

*I 2 of 5 Security Level 1

(01h)

I 2 of 5 Security Level 2

(02h)

I 2 of 5 Security Level 3

(03h)

Discrete 2 of 5 (DTF)

Enable/Disable Discrete 2 of 5

SSI # 05h

Parameter # 5

To enable or disable Discrete 2 of 5.

Enable Discrete 2 of 5

(01h)

*Disable Discrete 2 of 5

(00h)

Set Lengths for Discrete 2 of 5

SSI # L1 = 14h, L2 = 15h

Parameter # L1 = 20, L2 = 21

Codabar (NW - 7)

Enable/Disable Codabar

SSI # 07h

Parameter # 7

To enable or disable Codabar.

Enable Codabar

(01h)

*Disable Codabar

(00h)

Set Lengths for Codabar

SSI # L1 = 18h, L2 = 19h

Parameter # L1 = 24, L2 = 25

CLSI Editing

SSI # 36h

Parameter # 54

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 feature if the host system requires this data format.

Enable CLSI Editing

(01h)

*Disable CLSI Editing

(00h)

NOTIS Editing

SSI # 37h

Parameter # 55

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

NOTE Symbol length does not include start and stop characters.

Enable NOTIS Editing

(01h)

*Disable NOTIS Editing

(00h)

Codabar Upper or Lower Case Start/Stop Characters Detection

SSI # F2h 57h

Parameter # 855

Select whether to detect upper case or lower case Codabar start/stop characters.

Lower Case

(01h)

*Upper Case

(00h)

MSI

Enable/Disable MSI

SSI # 0Bh

Parameter # 11

To enable or disable MSI.

Enable MSI

(01h)

*Disable MSI

(00h)

Set Lengths for MSI

SSI # L1 = 1Eh, L2 = 1Fh

Parameter # L1 = 30, L2 = 31

MSI Check Digits

SSI # 32h

Parameter # 50

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, scan the **Two MSI Check Digits** bar code to enable verification of the second check digit.

*One MSI Check Digit

(00h)

Two MSI Check Digits

(01h)

Transmit MSI Check Digit(s)

SSI # 2Eh

Parameter # 46

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

Transmit MSI Check Digit(s) (Enable)

(01h)

*Do Not Transmit MSI Check Digit(s) (Disable)

(00h)

MSI Check Digit Algorithm

SSI # 33h

Parameter # 51

Two algorithms are possible for the verification of the second MSI check digit.

MOD 10/MOD 11

(00h)

*MOD 10/MOD 10

(01h)

Chinese 2 of 5

Enable/Disable Chinese 2 of 5

SSI # F0h 98h

Parameter # 408

To enable or disable Chinese 2 of 5.

Enable Chinese 2 of 5

(01h)

***Disable Chinese 2 of 5**
(00h)

Matrix 2 of 5

Enable/Disable Matrix 2 of 5

SSI # F1h 6Ah

Parameter # 618

To enable or disable Matrix 2 of 5.

Enable Matrix 2 of 5

(01h)

***Disable Matrix 2 of 5**

(00h)

Set Lengths for Matrix 2 of 5

SSI # L1 = F1h 6Bh, L2 = F1h 6Ch

Parameter # L1 = 619, L2 = 620

Matrix 2 of 5 Check Digit

SSI # F1h 6Eh

Parameter # 622

The check digit is the last character of the symbol used to verify the integrity of the data.

Enable Matrix 2 of 5 Check Digit

(01h)

***Disable Matrix 2 of 5 Check Digit**

(00h)

Transmit Matrix 2 of 5 Check Digit

SSI # F1h 6Fh

Parameter # 623

Transmit Matrix 2 of 5 data with or without the check digit.

Transmit Matrix 2 of 5 Check Digit

(01h)

***Do Not Transmit Matrix 2 of 5 Check Digit**

(00h)

Korean 3 of 5

Enable/Disable Korean 3 of 5

SSI # F1h 45h

Parameter # 581

To enable or disable Korean 3 of 5.

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

Enable Korean 3 of 5

(01h)

***Disable Korean 3 of 5**

(00h)

Inverse 1D

SSI # F1h 4Ah

Parameter # 586

This parameter sets the 1D inverse decoder setting. Options are:

- **Regular Only** - the decoder decodes regular 1D bar codes only.
- **Inverse Only** - the decoder decodes inverse 1D bar codes only.
- **Inverse Autodetect** - the decoder decodes both regular and inverse 1D bar codes.

***Regular**

(00h)

Inverse Only

(01h)

Inverse Autodetect

(02h)

Postal Codes

US Postnet

SSI # 59h

Parameter # 89

To enable or disable US Postnet.

Enable US Postnet

(01h)

***Disable US Postnet**

(00h)

US Planet

SSI # 5Ah

Parameter # 90

To enable or disable US Planet.

Enable US Planet

(01h)

***Disable US Planet**

(00h)

Transmit US Postal Check Digit

SSI # 5Fh

Parameter # 95

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

***Transmit US Postal Check Digit**

(01h)

Do Not Transmit US Postal Check Digit

(00h)

UK Postal

SSI # 5Bh

Parameter # 91

To enable or disable UK Postal. **Enable UK Postal**

(01h)

***Disable UK Postal**

(00h)

Transmit UK Postal Check Digit

SSI # 60h

Parameter # 96

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

***Transmit UK Postal**

Check Digit

(01h)

Do Not Transmit UK Postal Check Digit

(00h)

Japan Postal

SSI # F0h, 22h

Parameter # 290

To enable or disable Japan Postal.

Enable Japan Postal

(01h)

***Disable Japan Postal**

(00h)

Australia Post

SSI # F0h, 23h

Parameter # 291

To enable or disable Australia Post.

Enable Australia Post

(01h)

***Disable Australia Post**

(00h)

Australia Post Format

SSI # F1h, CEh

Parameter # 718

To select one of the following formats for Australia Post.

- **Autodiscriminate** (or Smart mode) - Attempt to decode the Customer Information Field using the N and C Encoding Tables.
- **Raw Format** - Output raw bar patterns as a series of numbers 0 through 3.
- **Alphanumeric Encoding** - Decode the Customer Information Field using the C Encoding Table.
- **Numeric Encoding** - Decode the Customer Information Field using the N Encoding Table.

NOTE This option increases the risk of misdecodes because the encoded data format does not specify the Encoding Table used for encoding.

***Autodiscriminate**

(00h)

Raw Format

(01h)

Alphanumeric Encoding

(02h)

Numeric Encoding

(03h)

Netherlands KIX Code

SSI # F0h, 46h

Parameter # 326

To enable or disable Netherlands KIX Code.

Enable USPS 4CB/One Code/Intelligent Mail

(01h)

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

(00h)

USPS 4CB/One Code/Intelligent Mail

SSI # F1h 50h

Parameter # 592

To enable or disable USPS 4CB/One Code/Intelligent Mail.

Enable Netherlands KIX Code

(01h)

***Disable Netherlands KIX Code**

(00h)

UPU FICS Postal

SSI # F1h 63h

Parameter # 611

To enable or disable UPU FICS Postal.

Enable UPU FICS Postal

(01h)

***Disable UPU FICS Postal**

(00h)

GS1 DataBar

SSI # F0h 52h

Parameter # 338

Enable or disable the following code types:

- GS1 DataBar Omnidirectional
- GS1 DataBar Truncated
- GS1 DataBar Stacked
- GS1 DataBar Stacked Omnidirectional,

***Enable GS1 DataBar**

(01h)

Disable GS1 DataBar

(00h)

GS1 DataBar Limited

SSI # F0h 53h

Parameter # 339

Enable GS1 DataBar Limited

(01h)

***Disable GS1 DataBar Limited**

(00h)

GS1 DataBar Expanded

SSI # F0h 54h

Parameter # 340

Scan the appropriate bar code below to enable or disable the following code types:

- GS1 DataBar Expanded
- GS1 DataBar Expanded Stacked.

***Enable GS1 DataBar Expanded**

(01h)

Disable GS1 DataBar Expanded

(00h)

Convert GS1 DataBar to UPC/EAN

SSI # F0h, 8Dh

Parameter # 397

This parameter only applies to GS1 DataBar and GS1 DataBar Limited symbols not decoded as part of a Composite symbol. Enable this to strip the leading '010' from DataBar and 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.

Enable Convert GS1 DataBar to UPC/EAN

(01h)

***Disable Convert GS1 DataBar to UPC/EAN**

(00h)

Composite

Composite CC-C

SSI # F0h 55h

Parameter # 341

Enable or disable Composite bar codes of type CC-C.

Enable CC-C

(01h)

***Disable CC-C**

(00h)

Composite CC-A/B

SSI # F0h 56h

Parameter # 342

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

NOTE If you enable this code type, also see *UPC Composite Mode*.

Enable CC-A/B

(01h)

***Disable CC-A/B**

(00h)

Composite TLC-39

SSI # F0h 73h

Parameter # 371

Enable or disable Composite bar codes of type TLC-39.

Enable TLC39

(01h)

***Disable TLC39**

(00h)

UPC Composite Mode

SSI # F0h 58h

Parameter # 344

If you enable *Composite CC-A/B*, select an option for linking UPC symbols with a 2D symbol during transmission as if they were one symbol:

- Select **UPC Never Linked** to transmit UPC bar codes regardless of whether a 2D symbol is detected.
- Select **UPC Always Linked** to transmit UPC bar codes and the 2D portion.
If 2D is not present, the UPC bar code does not transmit.
- If you select **Autodiscriminate UPC Composites**, the decoder determines if there is a 2D portion, then transmits the UPC, as well as the 2D portion if present.

UPC Never Linked

(00h)

***UPC Always Linked**

(01h)

Autodiscriminate UPC Composites

(02h)

Composite Beep Mode

SSI # F0h, 8Eh

Parameter # 398

To select the number of decode beeps when a composite bar code is decoded.

Single Beep After Both are Decoded

(00h)

***Beep as Each Code Type is Decoded**

(01h)

Double Beep After Both are Decoded

(02h)

GS1-128 Emulation Mode for UCC/EAN Composite Codes

SSI # F0h, ABh

Parameter # 427

Select whether to enable or disable this mode.

Enable GS1-128 Emulation Mode for

UCC/EAN Composite Codes

(01h)

***Disable GS1-128 Emulation Mode for**

UCC/EAN Composite Codes

(00h)

2D Symbologies

Enable/Disable PDF417

SSI # 0Fh

Parameter # 15

To enable or disable PDF417.

***Enable PDF417**

(01h)

Disable PDF417

(00h)

Enable/Disable MicroPDF417

SSI # E3h

Parameter # 227

To enable or disable MicroPDF417.

Enable MicroPDF417

(01h)

***Disable MicroPDF417**

(00h)

Code 128 Emulation

SSI # 7Bh

Parameter # 123

Enable this parameter to transmit data from certain MicroPDF417 symbols as Code 128. *AIM Code ID Character (01h)* must be enabled for this parameter to work.

Enable Code 128 Emulation to transmit these MicroPDF417 symbols with one of the following prefixes:

JC1 if the first codeword is 903-905

JC2 if the first codeword is 908 or 909

JC0 if the first codeword is 910 or 911

Disable Code 128 Emulation to transmit these MicroPDF417 symbols with one of the following prefixes:

JL3 if the first codeword is 903-905

JL4 if the first codeword is 908 or 909

JL5 if the first codeword is 910 or 911

Scan a bar code below to enable or disable Code 128 Emulation.

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

Enable Code 128 Emulation

(01h)

***Disable Code 128 Emulation**

(00h)

Data Matrix

SSI # F0h, 24h

Parameter # 292

To enable or disable Data Matrix.

***Enable Data Matrix**

(01h)

Disable Data Matrix

(00h)

Data Matrix Inverse

SSI # F1h 4Ch

Parameter # 588

This parameter sets the Data Matrix inverse decoder setting. Options are:

- **Regular Only** - the decoder decodes regular Data Matrix bar codes only.
- **Inverse Only** - the decoder decodes inverse Data Matrix bar codes only.
- **Inverse Autodetect** - the decoder decodes both regular and inverse Data Matrix bar codes.

*Regular

(00h)

Inverse Only

(01h)

Inverse Autodetect

(02h)

Decode Mirror Images (Data Matrix Only)

SSI # F1h 19h

Parameter # 537

Select an option for decoding mirror image Data Matrix bar codes:

- **Always** - decode only Data Matrix bar codes that are mirror images
- **Never** - do not decode Data Matrix bar codes that are mirror images
- **Auto** - decode both mirrored and unmirrored Data Matrix bar codes.

Never

(00h)

Always

(01h)

* Auto

(02h)

Maxicode

SSI # F0h 26h

Parameter # 294

To enable or disable Maxicode.

Enable Maxicode

(01h)

*Disable Maxicode

(00h)

QR Code

SSI # F0h 25h

Parameter # 293

To enable or disable QR Code.

*Enable QR Code

(01h)

Disable QR Code

(00h)

QR Inverse

SSI # F1h 4Bh

Parameter # 587

This parameter sets the QR inverse decoder setting. Options are:

- **Regular Only** - the decoder decodes regular QR bar codes only.
- **Inverse Only** - the decoder decodes inverse QR bar codes only.
- **Inverse Autodetect** - the decoder decodes both regular and inverse QR bar codes.

*Regular

(00h)

Inverse Only

(01h)

Inverse Autodetect

(02h)

MicroQR

SSI # F1h 3Dh

Parameter # 573

To enable or disable MicroQR.

*Enable MicroQR

(01h)

Disable MicroQR

(00h)

Aztec

SSI # F1h 3Eh

Parameter # 574

To enable or disable Aztec.

*Enable Aztec

(01h)

Disable Aztec

(00h)

Aztec Inverse

SSI # F1h 4Dh

Parameter # 589

This parameter sets the Aztec inverse decoder setting. Options are:

- **Regular Only** - the decoder decodes regular Aztec bar codes only.
- **Inverse Only** - the decoder decodes inverse Aztec bar codes only.
- **Inverse Autodetect** - the decoder decodes both regular and inverse Aztec bar codes.

Regular

(00h)

Inverse Only

(01h)

*Inverse Autodetect

(02h)

Han Xin

SSI # F8h 04h 8Fh

Parameter # 1167

To enable or disable Han Xin.

Enable Han Xin

(01h)

*Disable Han Xin

(00h)

Han Xin Inverse

SSI # F8h 04h 90h

Parameter # 1168

Select a Han Xin inverse decoder setting:

- **Regular Only** - the decoder decodes Han Xin bar codes with normal reflectance only.
- **Inverse Only** - the decoder decodes Han Xin bar codes with inverse reflectance only.
- **Inverse Autodetect** - the decoder decodes both regular and inverse Han Xin bar codes.

*Regular

(00h)

Inverse Only

(01h)

Inverse Autodetect

(02h)

Aim Brightness (SE4500/SE3300/SE4750)

SSI # F1h 9Ch

Parameter # 668

This feature sets the brightness of the aim pattern. The default is 0, which indicates that the aim pattern is always on in between camera exposures. For values above 0, each increment of the brightness value increments the aim duration 0.5 ms.

Settings range from 0 to 255. The maximum aim duration is limited by the frame time, so the recommended range is 0 to 30 when the frame rate is set to 60 fps.

Illumination Brightness

SSI # F1h 9Dh

Parameter # 669

This feature sets the brightness of the illumination by altering LED power. The default is 10, which is maximum LED brightness. For values from 1 to 10, LED brightness varies from lowest to highest level of brightness.

For example, to set Illumination Brightness to 6, scan the bar code below followed by the 0 and 6 bar codes.

LED Illumination

SSI # F0h ADh

Parameter # 429

Select the type of LED illumination to use:

- **Internal Illumination** - use the engine's illumination.
- **External Illumination** - assert the ILLUM_EN_OUT signal continuously during a decode session, and do not use the engine's illumination.

- **Internal and External Illumination** - use the engine's illumination and assert the ILLUM_EN_OUT signal continuously during a decode session.
 - **Internal Illumination Matches Engine (SE4500/SE4750 Only)** - use the engine's illumination and pulse the ILLUM_EN_OUT signal to match the engine's illumination duration for each frame. Note that the SE3300 and SE4710 do not support this option.
 - **Alternating Internal and External Illumination (SE4500/SE4750 Only)** - use the engine's illumination and ILLUM_EN_OUT signal on alternating frames. Note that the SE3300 and SE4710 do not support this option.
- This parameter only applies for decoding if *Decoding Illumination* is enabled. Disabling Decoding Illumination turns off all illumination for that mode, regardless of this LED Illumination setting.

***Internal Illumination**

(00h)

External Illumination

(01h)

Internal and External Illumination

(02h)

Internal Illumination Matches Engine

(SE4500/SE4750 Only)

(04h)

Alternating Internal and External Illumination

(SE4500/SE4750 Only)

(05h)

Decoding Illumination

SSI # F0h 2Ah

Parameter # 298

Selecting **Enable Decoding Illumination** causes the decoder to turn on illumination every image capture to aid decoding. Select **Disable Decoding Illumination** to prevent the decoder from using decoding illumination. Enabling illumination usually results in superior images. The effectiveness of illumination decreases as the distance to the target increases.

NOTE Changing this parameter while using **Presentation Mode**, with or without **Motion Enhancement**, is not recommended.

***Enable Decoding Illumination**

(01h)

Disable Decoding Illumination

(00h)

Decode Aiming Pattern

SSI # F0h 32h

Parameter # 306

Select **Enable Decode Aiming Pattern** to project the aiming pattern during bar code capture, or **Disable Decode Aiming Pattern** to turn the aiming pattern off.

*** Enable Decode Aiming Pattern**

(02h)

Disable Decode Aiming Pattern

(00h)

Trigger Modes

SSI # 8Ah

Parameter # 138

• **Level** - A trigger event activates decode processing, which continues until the trigger event ends, a valid decode, or the *Decode Session Timeout* occurs.

• **Presentation Mode** - When the decoder detects an object in its field of view, it triggers and attempt to decode. The range of object detection does not vary under normal lighting conditions. This applies to decode mode only. In this mode the unit does not enter Low Power mode.

• **Host** - A host command issues the triggering signal. The decoder interprets an actual trigger pull as a Level triggering option.

• **Auto Aim** - This trigger mode turns on the aiming pattern when the decoder senses motion. A trigger pull activates decode processing. After 2 seconds of inactivity the aiming pattern automatically shuts off.

• **Auto Aim with Illumination** - This trigger mode turns on the aiming pattern and internal illumination LEDs when the decoder senses motion. A trigger pull activates decode processing. After 2 seconds of inactivity the aiming pattern and internal illumination LEDs automatically shut off.

***Level**

(00h)

Presentation Mode

(07h)

Host

(08h)

Auto Aim

(09h)

Auto Aim with Illumination

(0Ah)

Picklist Mode

SSI # F0h 92h

Parameter # 402

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

- **Disabled Always** - Picklist mode is always disabled.
- **Enabled Always** - Picklist mode is always enabled.

NOTE With Picklist Mode enabled, the decode aiming pattern turns on even when the *Decode Aiming Pattern* is disabled.

*Disabled Always

(00h)

Enabled Always

(02h)

Decode Session Timeout

SSI # 88h

Parameter # 136

This parameter sets the maximum time decode processing continues during a scan attempt. It is programmable in 0.1 second increments from 0.5 to 9.9 seconds. The default timeout is 9.9 seconds.

Continuous Bar Code Read

Parameter # F1h 89h

Parameter # 649

Select **Enable** to allow decode processing to continue until the trigger event ends. User indications occur upon decoding each bar code. Select **Disable** to end decode processing upon a valid decode as well. This mode does not apply to **Presentation Mode**.

NOTE strongly recommends enabling *Picklist Mode* with this feature. Disabling Picklist Mode can cause accidental decodes when more than one bar code is in the decoder's field of view.

*Disable Continuous Bar Code Read

(00h)

Enable Continuous Bar Code Read

(01h)

Low Light Motion Detection Assist

SSI # F2h 2Ah

Parameter # 810

In **Presentation Mode**, this feature allows motion detection in dim to dark illumination environments by using the aiming dot or dim illumination to assist in the detection of motion by providing a low light source.

NOTE If this parameter is enabled and *Decoding Illumination* is disabled, this parameter takes precedence.

If the decoder is connected to the SE4500 or an SE4750 with a laser aimer, it does not support **Aiming Dot for Low Light Motion Detection**.

*Disable Low Light Motion Detection Assist

(00h)

Enable Aiming Dot for
Low Light Motion Detection Assist

(01h)

Enable Dim Illumination for
Low Light Motion Detection Assist

(02h)

Presentation Mode Field of View

SSI # F1h 61h

Parameter # 609

In **Presentation Mode**, the decoder searches for a bar code in the region around the aiming pattern's center.

To search for a bar code in a smaller region around the aiming pattern in order to speed search time, select

Small Field of View, or to search a larger area, select **Full Field of View**.

Small Field of View

(00h)

*Medium Field of View

(01h)

Full Field of View

(02h)

Fuzzy 1D Processing

SSI # F1h 02h

Parameter # 514

This option is enabled by default to optimize decode performance on 1D bar codes, including damaged and poor quality symbols. Disable this only if you experience time delays when decoding 2D bar codes, or in detecting a no decode.

***Enable Fuzzy 1D Processing**

(01h)

Disable Fuzzy 1D Processing

(00h)

Mirrored Image

SSI # F1h 70h

Parameter # 624

Enable this to scan images in reverse, or mirrored, as if seen through a mirror. This mode is useful in applications requiring scanning through a mirror and using symbologies that do not decode in reverse.

Enabling this mode when using snapshot, video, or video viewfinder mode transmits images as mirrored images.

***Disable Mirrored Image**

(00h)

Enable Mirrored Image

(01h)

Mobile Phone/Display Mode

SSI # F1h CCh

Parameter # 716

This mode improves bar code reading performance with target bar codes displayed on mobile phones and electronic displays.

***Disable Mobile Phone/Display Mode**

(00h)

Enable Mobile Phone/Display Mode

(03h)

Transmit Code ID Character

SSI # 2Dh

Parameter # 45

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.

Symbol Code ID Character

(02h)

AIM Code ID Character

(01h)

***None**

(00h)

UPC-A 2 Digit Addenda

SSI # FA B9h

Parameter # 3001

To enable or disable UPC-A 2 digit addenda.

Enable UPC-A 2 digit Addenda

(01h)

***Disable UPC-A 2 digit Addenda**

(00h)

UPC-A 5 Digit Addenda

SSI # FA BAh

Parameter # 3002

To enable or disable UPC-A 5 digit addenda.

Enable UPC-A 5 digit Addenda

(01h)

***Disable UPC-A 5 digit Addenda**

(00h)

UPC-A Addenda Required

SSI # FA BBh

Parameter # 3003

To enable or disable UPC-A addenda required.

Enable UPC-A Addenda Required

(01h)

***Disable UPC-A Addenda Required**

(00h)

UPC-A Addenda Separator

SSI # FA BCh

Parameter # 3004

To enable or disable UPC-A addenda separator.

Enable UPC-A Addenda Separator

(01h)

***Disable UPC-A Addenda Separator**

(00h)

UPC-E0 2 Digit Addenda

SSI # FA BDh

Parameter # 3005

To enable or disable UPC-E0 2 digit addenda.

Enable UPC-E0 2 digit Addenda

(01h)

***Disable UPC-E0 2 digit Addenda**

(00h)

UPC-E0 5 Digit Addenda

SSI # FA BEh

Parameter # 3006

To enable or disable UPC-E0 5 digit addenda.

Enable UPC-E0 5 digit Addenda

(01h)

***Disable UPC-E0 5 digit Addenda**

(00h)

UPC-E0 Addenda Required

SSI # FA BFh

Parameter # 3007

To enable or disable UPC-E0 addenda required.

Enable UPC-E0 Addenda Required

(01h)

***Disable UPC-E0 Addenda Required**

(00h)

UPC-E0 Addenda Separator

SSI # FA C0h

Parameter # 3008

To enable or disable UPC-E0 addenda separator.

Enable UPC-E0 Addenda Separator

(01h)

***Disable UPC-E0 Addenda Separator**

(00h)

EAN-8 2 Digit Addenda

SSI # FA C1h

Parameter # 3009

To enable or disable EAN-8 2 digit addenda.

Enable EAN-8 2 digit Addenda

(01h)

***Disable EAN-8 2 digit Addenda**

(00h)

EAN-8 5 Digit Addenda

SSI # FA C2h

Parameter # 3010

To enable or disable EAN-8 5 digit addenda.

Enable EAN-8 5 digit Addenda

(01h)

***Disable EAN-8 5 digit Addenda**

(00h)

EAN-8 Addenda Required

SSI # FA C3h

Parameter # 3011

To enable or disable EAN-8 addenda required.

Enable EAN-8 Addenda Required

(01h)

***Disable EAN-8 Addenda Required**

(00h)

EAN-8 Addenda Separator

SSI # FA C4h

Parameter # 3012

To enable or disable EAN-8 addenda separator.

Enable EAN-8 Addenda Separator

(01h)

***Disable EAN-8 Addenda Separator**

(00h)

EAN-13 2 Digit Addenda

SSI # FA C5h

Parameter # 3013

To enable or disable EAN-13 2 digit addenda.

Enable EAN-13 2 digit Addenda

(01h)

***Disable EAN-13 2 digit Addenda**

(00h)

EAN-13 5 Digit Addenda

SSI # FA C6h

Parameter # 3014

To enable or disable EAN-13 5 digit addenda.

Enable EAN-13 5 digit Addenda

(01h)

***Disable EAN-13 5 digit Addenda**

(00h)

EAN-13 Addenda Required

SSI # FA C7h

Parameter # 3015

To enable or disable EAN-13 addenda required.

Enable EAN-13 Addenda Required

(01h)

***Disable EAN-13 Addenda Required**

(00h)

EAN-13 Addenda Separator

SSI # FA C8h

Parameter # 3016

To enable or disable EAN-13 addenda separator.

Enable EAN-13 Addenda Separator

(01h)

***Disable EAN-13 Addenda Separator**

(00h)

EAN-8 Transmit Check Digit

SSI # FA C9h

Parameter # 3017

To enable or disable EAN-8 transmit Check Digit.

***Enable EAN-8 Transmit Check Digit**

(01h)

Disable EAN-8 Transmit Check Digit

(00h)

EAN-13 Transmit Check Digit

SSI # FA CAh

Parameter # 3018

To enable or disable EAN-13 transmit Check Digit.

***Enable EAN-13 Transmit Check Digit**

(01h)

Disable EAN-13 Transmit Check Digit

(00h)

Dot Code

SSI # FA CBh

Parameter # 3019

To enable or disable Dot Code.

***Enable Dot Code**

(01h)

Disable Dot Code

(00h)

OCR

SSI # FA CCh

Parameter # 3020

To enable or disable OCR.

Enable OCR

(01h)

***Disable OCR**

(00h)

OCR Mode

SSI # FA CDh

Parameter # 3021

To select OCR mode.

Enable Dot Code

(01h)

***Disable Dot Code**

(00h)

OCR Template

SSI # FA CEh

Parameter # 3022

To select OCR template.

Enable Dot Code

(01h)

***Disable Dot Code**

(00h)

Update History	
Version	Update list
V2.6.3	Add Shake Scan API.
V2.6.4	Added Disable All Symbologies API. Added Enable/Disable NFC API. Added NFC Output Order API. Added NFC Ignore Rate API. Update send settings API.
V2.6.8	Update diagram in section 1. Update how trigger work in HW trigger OS. Added note on which OS the API will work on. Update Intercharacter delay API. Added example of how to receive scanned data. Added insertion rule to data editing API and an example.
V2.6.9	Update example of how to receive scanned data.
V2.7.0	Added Appendix A to list all parameter and settings.
V2.7.1	Added information about receiving data as byte in section 1.3.
V2.7.2	Fixed the error of saying EXTENT instead EXT for PA720 2D engine in section 1.24.
V2.7.3	Added Scan2Key output method API.
V2.7.5	Added databytelength for updated databyte output.
V2.7.6	Added Sound Frequency API Added Sound Duration API Added set intent action for the receive data API Added set intent extra for the receive data APU Added Code ID Table Added AIM ID Table Added Command Table Added command for PA760 in Command information
V2.7.7	Added description for external USS Updated Code ID Table and Command Table
V2.7.8	Fixed the error of description in section 3.1
V2.8	Add USS for PA760
V2.8.1	1.9 No need extra parameter 1.30 sample code error (see red color in 1.30)
V2.8.2	Add "Trigger software scan" on 1.3