

PA700 Series Programming Manual

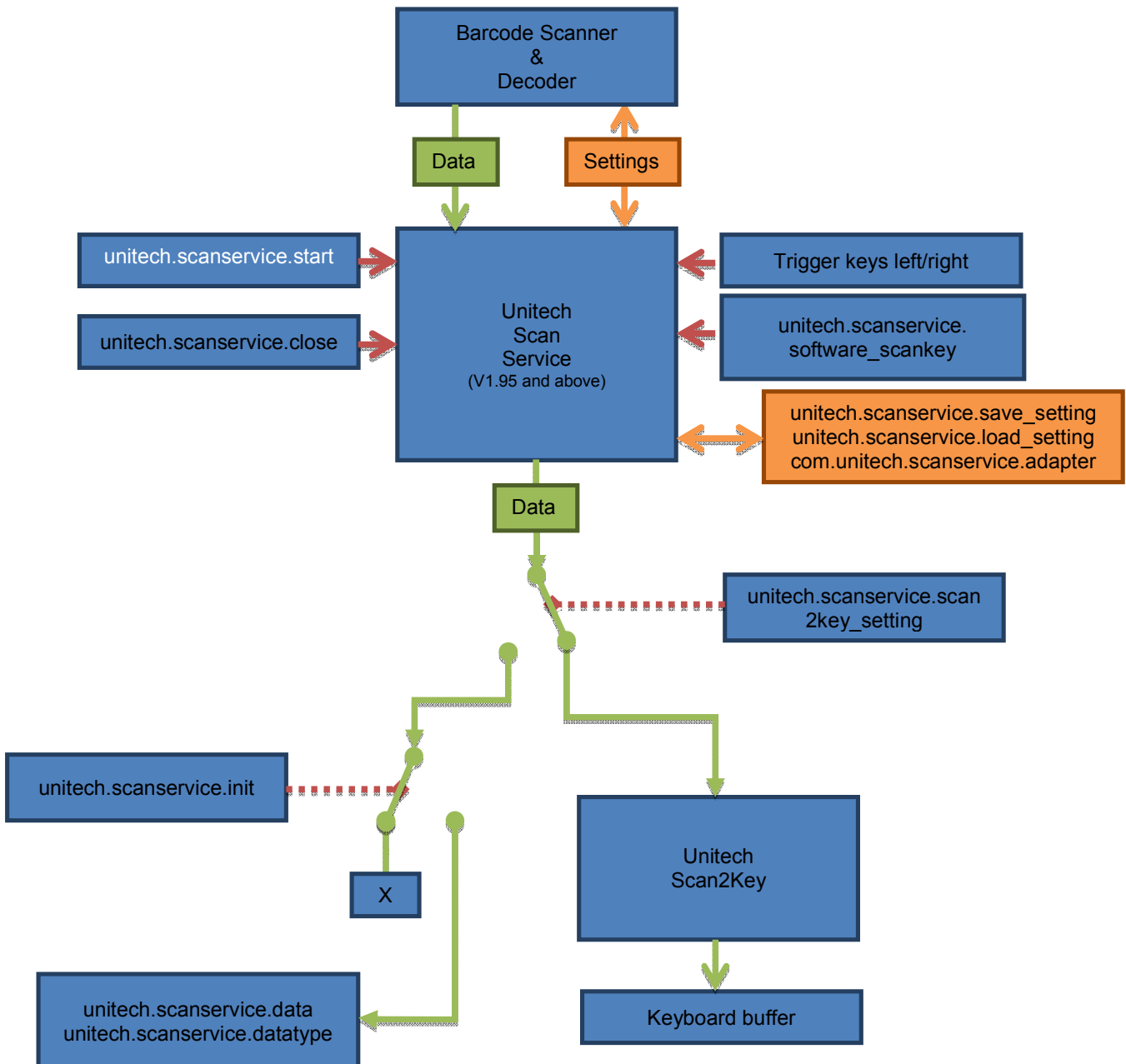
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1. USI Communication

All USI cross application communications are done by broadcast intent between USI and user applications. The below schematic sketches the scanner integration. ScanServer V1.95 and above (as integrated in OS Built 3230 and above)



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=false)

1.2. Initialize Data Receiving Procedure

Description: Initialize data receiving procedure.

Action: "unitech.scanservice.init"

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

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	None

1.3. Receive scanned data

Description: Receive the data from scanner via intent.

Action: "unitech.scanservice.data"

Extended data: Name: "text"
Type: String

1.4. Receive symbology data

Description: Receive the type of scanned barcode symbology.

Also refer to chapter 3.1

Action: "unitech.scanservice.datatype"

Extended data: Name: "text"
Type: Integer

1.5. 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.

1.6. 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.

1.7. Close scan service

Description: Close the scan service.
Action: "unitech.scanservice.close"
Extended data: Name: "close"
Type: Boolean

1.8. Enable Scan Service

Description: Start the scan service
Action: "unitech.scanservice.start"
Extended data: Name: "close"
Type: Boolean (true=ON, false=false)

1.9. Set Preamble

ScanServer V2.05 or above
Description: set preamble to the output data
Action: "unitech.scanservice.preamble"
Extended data: Name: "preamble"
Type: String

1.10. Set Postamble

ScanServer V2.05 or above
Description: set postamble to the output data
Action: "unitech.scanservice.postamble"
Extended data: Name: "postamble"
Type: String

1.11. Set Terminator

ScanServer V2.05 or above
Description: set terminator to the output data
Action: "unitech.scanservice.terminator"
Extended data: Name: "terminator"
Type: String

1.12. 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=false)

1.13. 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=false)

1.14. Set EAN128 Field Separator

ScanServer V2.05 or above

Description: set EAN128 Field Separator

Action: "unitech.scanservice.fieldseparator"

Extended data: Name: "fieldseparator"
Type: String

1.15. Set Intercharacter Delay

ScanServer V2.05 or above

Description: set intercharacter delay (ms)

Action: "unitech.scanservice.interchar_delay"

Extended data: Name: "intercharDelay"
Type: Integer

1.16. Set Keep Scan Timeout

ScanServer V2.07 or above

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.keepscan"

Extended data: Name: "keepscan"
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.

1.17. Disable All Symbologies

ScanServer V2.25 or above

Description: disable all symbologies.

Action: "unitech.scanservice.disable_all"

Note: No extended data required.

1.18. Send param command

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.
 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.

"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".

```
<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>
</string-array>
```

```
    }</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,  
    }</item>  
</string-array>
```

```

        "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,
  "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":0xF026
  }</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>
```

2. USI Examples

2.1. Enable/Disable scanner

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

2.2. Receive scanned data

```
String SSI_param_data = "";  
Intent sendIntent = new Intent("unitech.scanservice.data");  
sendIntent.putExtra("text", SSI_param_data);  
sendBroadcast(sendIntent);
```

2.3. 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)

3. Tips using Scan2Key

3.1. 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 **IC0**097050214112

3.2. 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

3.3. Enable/Disable barcode scanning through HTML5

Prerequisites

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

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

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

4. Simple Data editing

ScanService V2.30 or above

4.1. 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.

4.2. 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.

- In the case of qualifier:
 - (t)**target symbology: 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), 19(code 39 full ASCII), and 28(QR code). 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: 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: This will be followed by java regular expression.
- In the case of modifier:
 - (s)**selection: 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.

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
```

Table A-8. Code Types by SSI ID

Symbology SSI ID Code ID AIM ID Letter

AIM ID Modifier

Code 39 0x01	RSS Limited 0x31
Codabar 0x02	RSS Expanded 0x32
Code 128 0x03	Parameter (FNC3) 0x33
D25 0x04	Scanlet Webcode 0x37
IATA 0x05	Cue CAT Code 0x38
ITF 0x06	UPCA + 2 0x48
Code 93 0x07	UPCE + 2 0x49
UPCA 0x08	EAN-8 + 2 0x4A
UPCE 3 0x09	EAN-13 + 2 0x4B
EAN-8 0x0A	UPCE1 + 2 0x50
EAN-13 0x0B	Composite(CC-A + EAN-128) 0x51
Code 11 0x0C	Composite(CC-A + EAN-13) 0x52
MSI 0x0E	Composite(CC-A + EAN-8) 0x53
EAN-128 0x0F	Composite (CC-A +RSS Expanded) 0x54
UPCE1 0x10	Composite (CC-A +RSS Limited) 0x55
PDF-417 0x11	Composite(CC-A + RSS-14) 0x56
Code 39 Full ASCII 0x13	Composite(CC-A + UPC-A) 0x57
Trioptic 0x15	Composite(CC-A + UPC-E) 0x58
Bookland 0x16	Composite(CC-C + EAN-128) 0x59
Coupon Code 0x17	TLC-39 0x5A
ISBT-128 0x19	Composite(CC-B + EAN-128) 0x61
Micro PDF 0x1A	Composite(CC-B + EAN-13) 0x62
Data Matrix 0x1B	Composite(CC-B + EAN-8) 0x63
QR Code 0x1C	Composite (CC-B +RSS Expanded) 0x64
Postnet (US) 0x1E	Composite (CC-B +RSS Limited) 0x65
Planet (US) 0x1F	Composite(CC-B + RSS-14) 0x66
Code 32 0x20	Composite(CC-B + UPC-A) 0x67
ISBT-128 Concat. 0x21	Composite(CC-B + UPC-E) 0x68
Postal (Japan) 0x22	UPCA + 5 0x88
Postal (Australia) 0x23	UPCE + 5 0x89
Postal (Dutch) 0x24	EAN-8 + 5 0x8A
Maxicode 0x25	EAN-13 + 5 0x8B
Postbar (CA) 0x26	UPCE1 + 5 0x90
Postal (UK) 0x27	Multipacket Format 0x99
Macro PDF-417 0x28	Macro Micro PDF 0x9A
RSS-14 0x30	