

# User Manual

# Head Module Settings

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# 1 Head Module Settings

## 1.1 Introduction

The Head Module Settings are there for controlling the head modules. They provide the following: enable or disable a head module (see *1.2 Enable Module*), reading with a dual head module with two different trigger buttons (see *1.3 Enable Dual Head Module*), set settings for each head module (see *1.4 #L|F – TLB30 (low frequency RFID reader), 1.5 #H – UNI13 (high frequency RFID reader), 1.6 #Q – ARE8 (RFID reader), 1.7 #T – LID (RFID reader), 1.8 #U|E – UNI900 (very high frequency RFID reader) and 1.9 S# - SE955 (1D short range laser barcode scanner)*), set a preamble/postamble for the output data (see *1.10 Wedge Data*), enable or disable the beep that should be ringing out or not after a good read (see *1.11 Good Read*), enable or disable the service of the head modules which runs on your device (see *1.12 Enable Service*), display information of the service of the head modules which is installed on your device (see *1.13 Version Info*). The Head Module Settings are located in the Intermec Settings. To open the Head Module Settings click on the windows icon on the main screen. Then click on Settings-> System->Intermec Settings (see *Step1-3*). Scroll down until “Head Module Settings” (see *Step4*) and click on it. The Head Module Settings are opened. After you have made any settings in the Head Module Settings you can start reading with your head module by pushing the center scan or the left side lower button on your device (see therefor also *1.3 Enable Dual Head Module*).

Step1



Step2



Step3



Step4



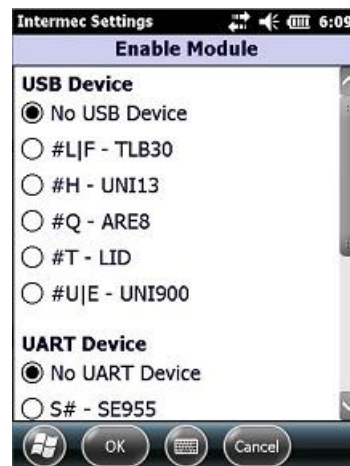
## 1.2 Enable Module

There is a possibility in the Head Module Settings called “Enable Module” where you can enable or disable a head module. Open the Head Module Settings and choose “Enable Module” (see *Pic1*). In the next window (see *Pic2*) you can choose one of the USB devices (for example the LF reader) or one of the UART devices (for example the SE955 scanner). Click on the OK button to save your choice. A new feature is integrated from version 1.7. It is called “Enable Logging” (see *Pic3*). The head modules TLB30, ARE8, LID and SE955 provide the possibility to log the process from using one of these head modules. With the “Enable Logging” feature you can enable or disable this logging.

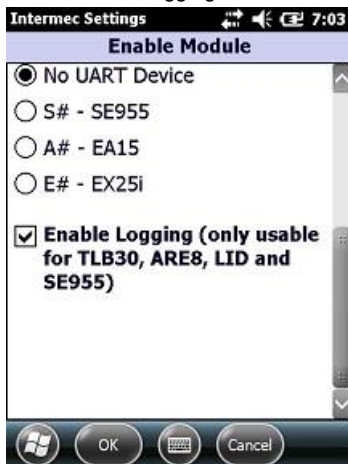
Pic1: Head Module Settings



Pic2: Enable Module



Pic3: Enable Logging



### 1.3 Enable Dual Head Module

There is a new feature from version 1.7.2. It is now possible to read with a dual head module by pushing different trigger buttons. If you choose two head modules, a USB device (e.g. TLB30) and a UART device (e.g. SE955), you can start reading with the USB device by pushing the center scan button and with the left side lower button you can start reading with the UART device. In section 1.2 *Enable Module* is described how you can select a head module. It is not allowed to choose a USB device together with EA15 or EX25i. So if you choose a USB device and EA15 or EX25i, the USB device will be disabled and you can start reading with the EA15 or EX25i by pushing the center scan or the left side lower button. If you choose only one head module, you can start reading with this head module by pushing the center scan or the left side lower button.

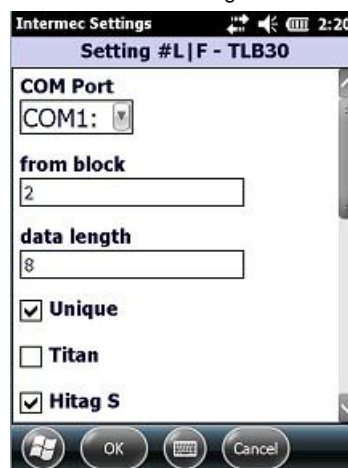
### 1.4 #L|F – TLB30 (low frequency RFID reader)

After you have enabled the LF reader through selecting it in the “Enable Module” section in the Head Module Settings (see 1.2 *Enable Module*) you are now able to change some settings for the LF reader. Open the Head Module Settings and choose “Setting #L|F – TLB30” (see *Pic4*). In the next window (see *Pic5*) you can make any changes you want to do for the LF reader. Click on the OK button to save your changes.

Pic4: Head Module Settings after enabling the LF reader



Pic5: LF reader settings



Explanation of the settings for the #L|F – TLB30:

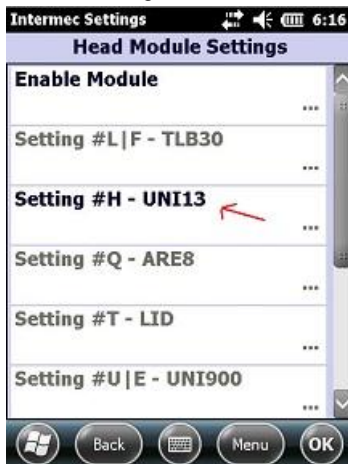
Setting	Description
COM Port	Serial port of the reader.
from block	Start block address to start reading a TAG.
data length	Length of data to read from a TAG.
Unique	Enable or disable the reading of a Unique TAG.
Titan	Enable or disable the reading of a Titan TAG. (not implemented at the moment)
HitagS	Enable or disable the reading of a HitagS TAG.
Hitag-2	Enable or disable the reading of a Hitag-2 TAG. (not implemented at the moment)
Zodiac	Enable or disable the reading of a Zodiac TAG.
Q5	Enable or disable the reading of a Q5 TAG. (not implemented at the moment)
Tiris	Enable or disable the reading of a Tiris TAG.

timeout for reading (in seconds)	Timeout for reading a TAG (a value from 1 to 25 seconds is allowed).
Output Data	Format of the output data (HEX or ASCII).

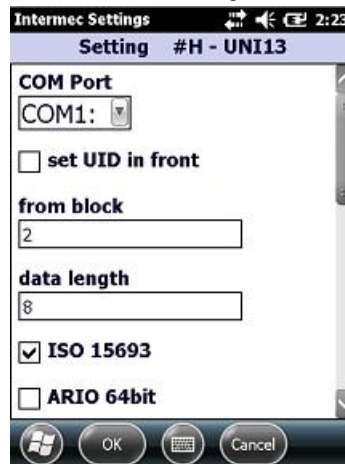
### 1.5 #H – UNI13 (high frequency RFID reader)

To make some changes for the HF reader, enable the reader in the “Enable Module” section in the Head Module Settings. Then click on “Setting #H – UNI13” (see Pic6). In the next window (see Pic7) make your changes you want to do for the HF reader and save them by clicking the OK button.

Pic6: Head Module Settings after enabling the HF reader



Pic7: HF reader settings



Explanation of the settings for the #H – UNI13:

Setting	Description
COM Port	Serial port of the reader.
set UID in front	Enable or disable that the UID of a TAG should be put in front of the read data. <b>Note: When this option is enabled and “data length” is set higher than 0 and reading of data from a TAG failed, the UID of the TAG will be output alone.</b>
from block	Start block address to start reading a TAG.
data length	Length of data to read from a TAG.
ISO 15693	Enable or disable ISO 15693 transponders.
ARI0 64bit	Enable or disable ARI0 64bit system.
ICODE UID	Enable or disable ICODE UID system.
ICODE 1	Enable or disable ICODE 1 transponders.
Mifare	Enable or disable Mifare transponders.
Pico-Tag	Enable or disable Pico-Tag transponders.
timeout for reading (in seconds)	Timeout for reading a TAG (a value from 1 to 25 seconds is allowed).
Output Data	Format of the output data (HEX or ASCII).
change high byte with low byte	Enable or disable the changing from high byte with low byte of the output data.

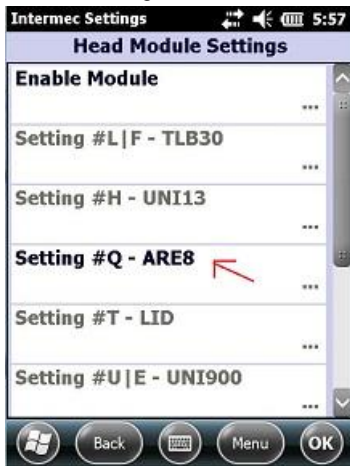
**Note:**

Head modules with the labels **NH-UNI13-AB** and **SH-SE955-UNI13-AB** are able to read the UID and data from a Mifare NFC TAG. Head modules with the labels **NH-UNI13-AA** and **SH-SE955-UNI13-AA** are just able to read the UID of a Mifare TAG. For the head modules with an “AA” it is recommended to set the option “data length” to 0 and it is necessary to enable the “set UID in front” option in the head module settings. If you want to read a Mifare TAG with an **NH-UNI13-AA** or **SH-SE955-UNI13-AA** it is also recommended to enable only the Mifare transponder in the head module settings and to disable all other transponders.

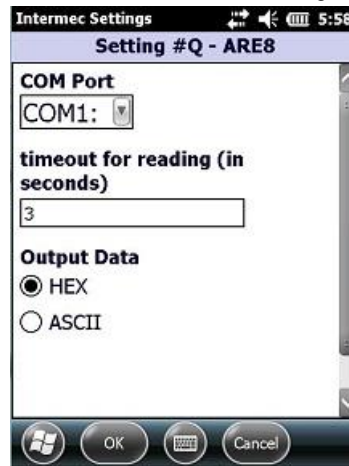
**1.6 #Q – ARE8 (RFID reader)**

To make some changes for the ARE Trovan reader, enable the reader in the “Enable Module” section in the Head Module Settings. Then click on “Setting #Q – ARE8” (see *Pic8*). In the next window (see *Pic9*) make your changes you want to do for the ARE Trovan reader and save them by clicking the OK button.

Pic8: Head Module Settings after enabling the ARE Trovan reader



Pic9: ARE Trovan reader settings



Explanation of the settings for the #Q – ARE8:

Setting	Description
COM Port	Serial port of the reader.
timeout for reading (in seconds)	Timeout for reading a TAG (a value from 1 to 25 seconds is allowed).
Output Data	Format of the output data (HEX or ASCII).

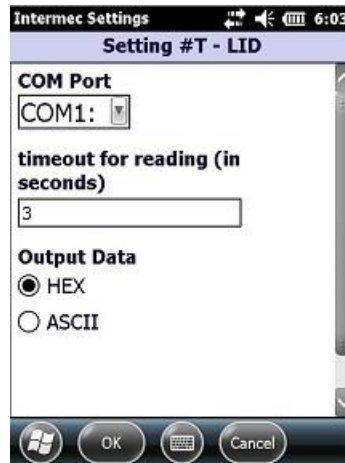
### 1.7 #T – LID (RFID reader)

To make some changes for the LID Trovan reader, enable the reader in the „Enable Module“ section in the Head Module Settings. Then click on “Setting #T - LID“ (see *Pic10*). In the next window (see *Pic11*) make your changes you want to do for the LID Trovan reader and save them by clicking the OK button.

Pic10: Head Module Settings after enabling the LID Trovan reader



Pic11: LID Trovan reader settings



Explanation of the settings for the #T – LID:

Setting	Description
COM Port	Serial port of the reader.
timeout for reading (in seconds)	Timeout for reading a TAG (a value from 1 to 25 seconds is allowed).
Output Data	Format of the output data (HEX or ASCII).

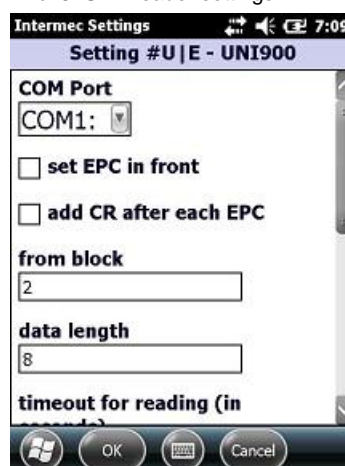
### 1.8 #U|E – UNI900 (very high frequency RFID reader)

To make some changes for the UHF reader, enable the reader in the “Enable Module” section in the Head Module Settings. Then click on “Setting #U|E – UNI900” (see *Pic12*). In the next window (see *Pic13*) make your changes you want to do for the UHF reader and save them by clicking the OK button.

Pic12: Head Module Settings after enabling the UHF reader



Pic13: UHF reader settings





Explanation of the settings for the #U|E – UNI900:

Setting	Description
COM Port	Serial port of the reader.
set EPC in front	Enable or disable that the EPC of a TAG should be put in front of the read data.
add CR after each EPC	If more than one TAG is identified and this option is enabled, a carriage return is inserted after each EPC of a TAG.
from block	Start block address to start reading a TAG.
data length	Length of data to read from a TAG.
timeout for reading (in seconds)	Timeout for reading a TAG (a value from 1 to 25 seconds is allowed).
Output Data	Format of the output data (HEX or ASCII).
change high byte with low byte	Enable or disable the changing from high byte with low byte of the output data.
Power adjustment	Power adjustment of the reader. A setting from 6 to 27 dB is available.

**Note:**

If more than one TAG is identified, only the EPCs of the TAGs are output. In this case the option **set EPC in front** has to be enabled. If this option is disabled, a sound is ringing out if more than one TAG is identified and nothing will be output.

In the case that more than one TAG is identified, no data is read from the TAGs so the options **from block** and **data length** have no effect in this situation.

### 1.9 S# - SE955 (1D short range laser barcode scanner)

To make some changes for the SE955 scanner, enable the scanner in the “Enable Module” section in the Head Module Settings. Then click on “Setting S# – SE955” (see *Pic14*). In the next window (see *Pic15*) make your changes you want to do for the SE955 scanner and save them by clicking the OK button.

Pic14: Head Module Settings after enabling the SE955 scanner



Pic15: SE955 scanner settings



Explanation of the settings for the S# - SE955:

Setting	Description
COM Port	Serial port of the scanner.
Laser On Time	Timeout for scanning a barcode.
Scan Angle	Angle for scanning a barcode (allowed values are narrow or wide).
Symbologies->UPC/EAN	
UPC-A	Enable or disable decoding of UPC-A barcodes.
UPC-E	Enable or disable decoding of UPC-E barcodes.
UPC-E1	Enable or disable decoding of UPC-E1 barcodes.
EAN-8	Enable or disable decoding of EAN-8 barcodes.
EAN-13	Enable or disable decoding of EAN-13 barcodes.
Bookland EAN	Enable or disable decoding of Bookland EAN barcodes.
Decode UPC/EAN Supplementals	Ignore = Decodes UPC/EAN barcodes and ignores potential supplemental characters. Decode = Decodes only UPC/EAN barcodes with supplemental characters. Autodisriminate = see " <i>Decode UPC/EAN Supplemental Redundancy</i> " Smart Supplemental Mode = EAN-13 barcodes with a prefix of '378', '379' or '978' and supplemental characters are decoded with the supplemental characters. For all other UPC/EAN barcodes, the supplemental characters are ignored. 378/379 Supplemental Mode = EAN-13 barcodes with a prefix of '378' or '379' and supplemental characters are decoded with the supplemental characters. For all other UPC/EAN barcodes, the supplemental characters are ignored. 978 Supplemental Mode = EAN-13 barcodes with a prefix of '978' and supplemental characters are decoded with the supplemental characters. For all other UPC/EAN barcodes, the supplemental characters are ignored.
Decode UPC/EAN Supplemental Redundancy	This setup indicates how many times a barcode without supplemental characters is decoded before transmission (a value from 2 to 30 is allowed). The option " <i>Autodisriminate</i> " must be selected.
Transmit UPC-A Check Digit	Enable or disable whether the check digit of a UPC-A barcode should be transmitted.
Transmit UPC-E Check Digit	Enable or disable whether the check digit of a UPC-E barcode should be transmitted.
Transmit UPC-E1 Check Digit	Enable or disable whether the check digit of a UPC-E1 barcode should be transmitted.
UPC-A Preamble	No Preamble = Transmit no preamble for UPC-A. System Character = Transmit system character as preamble for UPC-A. System Char. + Country Code = Transmit system character and country code as preamble for UPC-A.

UPC-E Preamble	No Preamble = Transmit no preamble for UPC-E. System Character = Transmit system character as preamble for UPC-E. System Char. + Country Code = Transmit system character and country code as preamble for UPC-E.
UPC-E1 Preamble	No Preamble = Transmit no preamble for UPC-E1. System Character = Transmit system character as preamble for UPC-E1. System Char. + Country Code = Transmit system character and country code as preamble for UPC-E1.
Convert UPC-E to A	Enable or disable conversion of UPC-E barcode data into UPC-A format. After conversion, the settings of UPC-A has an effect on the scanned UPC-E barcode (e.g. "Transmit UPC-A Check Digit", "UPC-A Preamble").
Convert UPC-E1 to A	Enable or disable conversion of UPC-E1 barcode data into UPC-A format. After conversion, the settings of UPC-A has an effect on the scanned UPC-E1 barcode (e.g. "Transmit UPC-A Check Digit", "UPC-A Preamble").
Security Level	Level0 = This level offers an acceptable security for most of the UPC/EAN barcodes. Level1 = Select this level if misreads of barcodes occur and the misreads are confined to specific characters (e.g. 1, 2, 3, 4). Level2 = If misreads occur and the misreads aren't confined to the specific characters, select this level. Level3 = Choose this level if misreads still occur after choosing the Level2.
UCC Coupon Extended Code	Enable or disable decoding of UCC Coupon Extended Code barcodes.
Symbologies->Code128	
Enable Code 128	Enable or disable decoding of Code 128 barcodes.
UCC/EAN 128	Enable or disable decoding of UCC/EAN 128 barcodes.
ISBT 128	Enable or disable decoding of ISBT 128 barcodes.
Symbologies->Code 39	
Enable Code 39	Enable or disable decoding of Code 39 barcodes.
Trioptic Code 39	Enable or disable decoding of Trioptic Code 39 barcodes.
Convert Code 39 to Code 32	Enable or disable converting Code 39 to Code 32. ("Enable Code 39" must be enabled for this option)
Code 32 Prefix	Enable or disable adding the prefix 'A' to a Code 32 barcode. ("Convert Code 39 to Code 32" must be enabled for this option)
Length Options	one discrete length = Decodes only those Code 39 barcodes that have the specified length. two discrete lengths = Decodes only those Code 39 barcodes that have one of the two specified

	<p>lengths. lengths within a range = Decodes only those Code 39 barcodes that have a length which lies in the specified range. any length = Decodes Code 39 barcodes of any length.</p>
Check Digit Verification	Enable or disable the verification of the data of a Code 39 barcode.
Transmit Check Digit	Enable or disable whether the check digit of a Code 39 barcode should be transmitted.
Full ASCII Conversion	Enable or disable decoding of Code 39 Full ASCII barcodes.
<b>Symbologies-&gt;Code 93</b>	
Enable Code 93	Enable or disable decoding of Code 93 barcodes.
Length Options	<p>one discrete length = Decodes only those Code 93 barcodes that have the specified length. two discrete lengths = Decodes only those Code 93 barcodes that have one of the two specified lengths. lengths within a range = Decodes only those Code 93 barcodes that have a length which lies in the specified range. any length = Decodes Code 93 barcodes of any length.</p>
<b>Symbologies-&gt;Code 11</b>	
Enable Code 11	Enable or disable decoding Code 11 barcodes.
Length Options	<p>one discrete length = Decodes only those Code 11 barcodes that have the specified length. two discrete lengths = Decodes only those Code 11 barcodes that have one of the two specified lengths. lengths within a range = Decodes only those Code 11 barcodes that have a length which lies in the specified range. any length = Decodes Code 11 barcodes of any length.</p>
Check Digit Verification	<p>Disable = Disable the verification of the data of a Code 11 barcode. One Check Digit = Enable the verification of the data of a Code 11 barcode and check for one check digit. Two Check Digits = Enable the verification of the data of a Code 11 barcode and check for two check digits.</p>
Transmit Check Digit(s)	Enable or disable whether the check digit(s) of a Code 11 barcode should be transmitted.
<b>Symbologies-&gt;Interleaved 2 of 5</b>	
Enable Interleaved 2 of 5	Enable or disable decoding Interleaved 2 of 5 barcodes.
Length Options	one discrete length = Decodes only those Interleaved 2 of 5 barcodes that have the specified

	<p>length. two discrete lengths = Decodes only those Interleaved 2 of 5 barcodes that have one of the two specified lengths. lengths within a range = Decodes only those Interleaved 2 of 5 barcodes that have a length which lies in the specified range. any length = Decodes Interleaved 2 of 5 barcodes of any length.</p>
Check Digit Verification	<p>Disable = Disable the verification of the data of an Interleaved 2 of 5 barcode. USS Check Digit = Enable the verification of the data of an Interleaved 2 of 5 barcode by using the USS (Uniform Symbology Specification) algorithm. OPCC Check Digit = Enable the verification of the data of an Interleaved 2 of 5 barcode by using the OPCC (Optical Product Code Council) algorithm.</p>
Transmit Check Digit	<p>Enable or disable whether the check digit of an Interleaved 2 of 5 barcode should be transmitted.</p>
Convert Interleaved 2 of 5 to EAN13	<p>Enable or disable conversion of a 14 character Interleaved 2 of 5 barcode into EAN-13. (The Interleaved 2 of 5 barcode must have a leading zero and a valid EAN-13 check digit.)</p>
Symbologies->Discrete 2 of 5	
Enable Discrete 2 of 5	<p>Enable or disable decoding Discrete 2 of 5 barcodes.</p>
Length Options	<p>one discrete length = Decodes only those Discrete 2 of 5 barcodes that have the specified length. two discrete lengths = Decodes only those Discrete 2 of 5 barcodes that have one of the two specified lengths. lengths within a range = Decodes only those Discrete 2 of 5 barcodes that have a length which lies in the specified range. any length = Decodes Discrete 2 of 5 barcodes of any length.</p>
Symbologies->Chinese 2 of 5	
Enable Chinese 2 of 5	<p>Enable or disable decoding Chinese 2 of 5 barcodes.</p>
Symbologies->Codabar	
Enable Codabar	<p>Enable or disable decoding Codabar barcodes.</p>
Length Options	<p>one discrete length = Decodes only those Codabar barcodes that have the specified length. two discrete lengths = Decodes only those Codabar barcodes that have one of the two specified lengths. lengths within a range = Decodes only those Codabar barcodes that have a length which lies in the specified range. any length = Decodes Codabar barcodes of any length.</p>

CLSI Editing	Enable or disable removing the start and stop characters and inserting a space after the first, fifth, and tenth character of a 14-character Codabar barcode.
NOTIS Editing	Enable or disable removing the start and stop characters from a Codabar barcode.
<b>Symbologies-&gt;MSI</b>	
Enable MSI	Enable or disable decoding MSI barcodes.
Length Options	one discrete length = Decodes only those MSI barcodes that have the specified length. two discrete lengths = Decodes only those MSI barcodes that have one of the two specified lengths. lengths within a range = Decodes only those MSI barcodes that have a length which lies in the specified range. any length = Decodes MSI barcodes of any length.
Check Digits	Choose how many check digits exists at the end of the barcode.
Transmit Check Digit	Enable or disable whether the check digit of a MSI barcode should be transmitted.
Check Digit Algorithm	If you have selected two check digits (see " <i>Check Digits</i> ") you must select an algorithm to verify the data of a MSI barcode.
<b>Symbologies-&gt;GS1 DataBar</b>	
GS1 DataBar 14	Enable or disable decoding GS1 DataBar 14 barcodes.
GS1 DataBar Limited	Enable or disable decoding GS1 DataBar Limited barcodes.
GS1 DataBar Expanded	Enable or disable decoding GS1 DataBar Expanded barcodes.
Convert GS1 DataBar to UPC/EAN	Enable or disable conversion of a GS1 DataBar 14 or GS1 DataBar Limited barcode into UPC/EAN. If the scanned barcode have a single zero as the first digit, the leading '010' of the barcode is removed and the barcode is converted into EAN-13. If the scanned barcode begins with two or more zeros but not six zeros, the leading '0100' is removed and the barcode is converted into UPC-A. In this case the setting <i>UPC-A Preamble</i> which transmits the system character and country code has an effect on the scanned barcode.
<b>Symbology Options</b>	
Symbology identifier	Enable or disable outputting a code ID character of a barcode. A code ID character indicates the code type of a barcode.  Disable = Disables outputting of a code ID character.  Aim Code ID Character = Enable outputting of the

Aim Code ID Character of a barcode. Each AIM Code Identifier contains the string "jcm":

**j** = Flag Character

**c** = Code Character

**m** = Modifier Character

Possible Code Characters (**c**):

A = Code 39

C = Code 128

E = UPC/EAN

F = Codabar

G = Code 93

H = Code 11

I = Interleaved 2 of 5

M = MSI

S = D2 of 5, IATA 2 of 5

X = Code 39 Trioptic, Bookland EAN

e = GS1 DataBar

Possible Modifier Characters (**m**):

The modifier character is the sum of the possible option values from the following table.

Code Type	Option Value	Option
Code 39		
	0	No Check character or Full ASCII processing.
	1	Reader has checked one check character.
	3	Reader has checked and stripped check character.
	4	Reader has performed Full ASCII character conversion.
	5	Reader has performed Full ASCII character conversion and checked one check character.
	7	Reader has performed Full ASCII character conversion and checked and stripped check character.
Trioptic Code 39		
	0	No option specified at this time. Always transmit 0.
Code 128		
	0	Standard data packet. No Function code 1 in first symbol position.
	1	Function code 1 in first symbol character position.
	2	Function code 1 in second symbol character position.
I 2 of 5		

	0	No check digit processing.
	1	Reader has validated check digit.
	3	Reader has validated and stripped check digit.
<b>Codabar</b>		
	0	No check digit processing.
	1	Reader has checked check digit.
<b>Code 93</b>		
	0	No options specified at this time. Always transmit 0.
<b>MSI</b>		
	0	Mod 10 check digit checked and transmitted.
	1	Mod 10 check digit checked but not transmitted.
<b>D 2 of 5</b>		
	0	No options specified at this time. Always transmit 0.
<b>UPC/EAN</b>		
	0	Standard packet in full EAN country code format, which is 13 digits for UPC-A, UPC-E, and EAN-13 (not including supplemental data).
	1	Two digit supplement data only.
	2	Five digit supplement data only.
	3	Combined data packet comprising 13 digits from a UPC-A, UPC-E, or EAN-13 symbol and 2 or 5 digits from a supplemental symbol.
	4	EAN-8 data packet.
<b>Bookland EAN</b>		
	0	No options specified at this time. Always transmit 0.

Symbol Code ID Character = Enable outputting of the Symbol Code ID Character of a barcode.  
 Possible Symbol Code ID Characters:  
 A = UPC-A, UPC-E, UPC-E1, EAN-8, EAN-13  
 B = Code 39, Code 32  
 C = Codabar  
 D = Code 128, ISBT 128  
 E = Code 93  
 F = Interleaved 2 of 5  
 G = Discrete 2 of 5  
 J = MSI



	K = UCC/EAN-128 L = Bookland EAN M = Trioptic Code 39 N = Coupon Code R = GS1 DataBar-14, GS1 DataBar Limited, GS1 DataBar Expanded
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## 1.10 Wedge Data

To set a preamble or postamble for the data which is read from a head module, open the Head Module Settings and click on "Wedge Data" (see Pic16). In the next window (see Pic17) set a preamble or postamble by filling out the corresponding text field and save your settings by clicking the OK button. *Note:* You can also set an escape literal for preamble or postamble. The following escape literals are allowed: **\a**, **\b**, **\t**, **\n**, **\v**, **\f**, **\r**. A second special feature for preamble/postamble is to set one of the following codes:

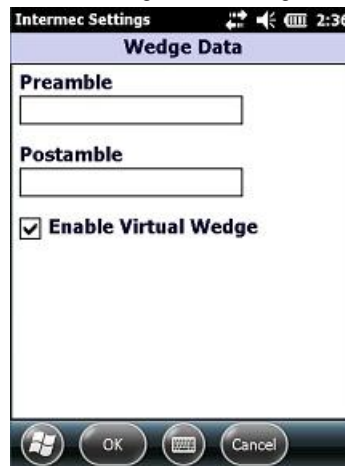
- **#TAB** (sends a tab)
- **#SPACE** (sends a space)
- **#ENTER** (sends an enter)
- **#xxx** (xxx stands for a decimal number between 000 and 127; you can set any ASCII character for preamble/postamble by using the decimal code of the character -> for example if you set #013 as preamble or postamble a carriage return will be sent (see more examples [here](#)))

Another option that you can make in this section of the Head Module Settings is to enable or disable the Wedge. This means that if you would disable the Wedge, no data will be output.

Pic16: Head Module Settings



Pic17: Settings for the Wedge



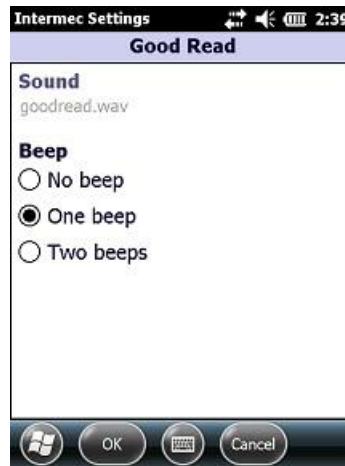
## 1.11 Good Read

The Head Module Settings provide an option to set a beep for ringing out after a good read. To set this, open the Head Module Settings and click on "Good Read" (see *Pic18*). In the next window (see *Pic19*) you have the opportunity to set "No beep", "One beep" or "Two beeps". Save your setting by clicking the OK button.

Pic18: Head Module Settings



Pic19: Beep options



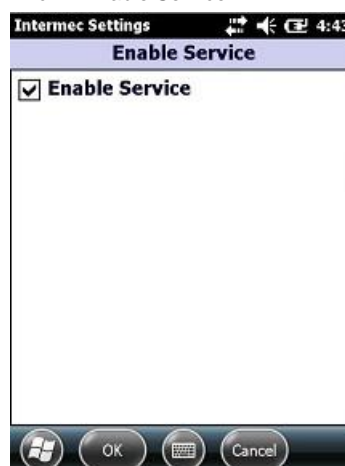
## 1.12 Enable Service

A new option is included from version 1.7.5. You are now able to enable or disable the EC\_Service. To set this, open the Head Module Settings and click on "Enable Service" (see *Pic20*). In the next window (see *Pic21*) you can enable or disable the EC\_Service by checking or unchecking the checkbox. A message is shown that you have to confirm the setting by clicking the OK button and that you have to reboot the device. This has to be done because this setting has only an effect when it is confirmed with OK and when the device is rebooted!

Pic20: Head Module Settings



Pic21: Enable Service



### 1.13 Version Info

Last point in the Head Module Settings gives you the opportunity to get information about the service of the head modules which is installed on your device. Open the Head Module Settings and click on "Version Info" (see *Pic22*). In the next window you can see the information about the installed service (see *Pic23*).

Pic22: Head Module Settings



Pic23: Version Info



## 2 Trigger Button Settings

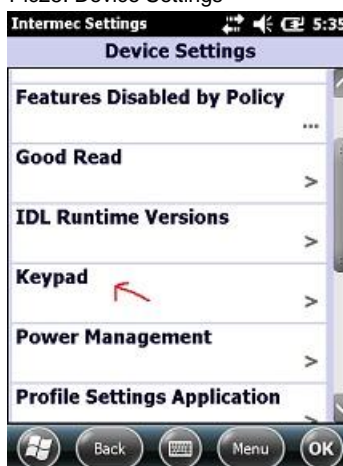
### 2.1 Map the trigger event “OEM Trigger” on a button

This is necessary to start reading with a head module. There is an event named “OEM Trigger” which is used in the service of the head modules to start reading with a head module. This event is mapped on the center scan and the left side lower button by default. You have five opportunities to map this event on a button: on the center scan button, on the left side upper button, on the left side lower button, on the right side upper button and on the right side lower button. To map a button on the event open the Intermec Settings. Therefore you have to click on the windows icon on the main screen. In the next step you have to click on Settings -> System -> Intermec Settings. To map the event on a button click on Device Settings -> Keypad -> Button Remapping (see *Pic24-Pic26*) in the Intermec Settings. In the next window you can map the “OEM Trigger” event on a button which you want to use to start reading with a head module (see *Pic27*).

Pic24: Intermec Settings



Pic25: Device Settings



Pic26: Keypad



Pic27: Button Remapping

(“OEM Trigger” is mapped on the center scan and the left side lower button by default)

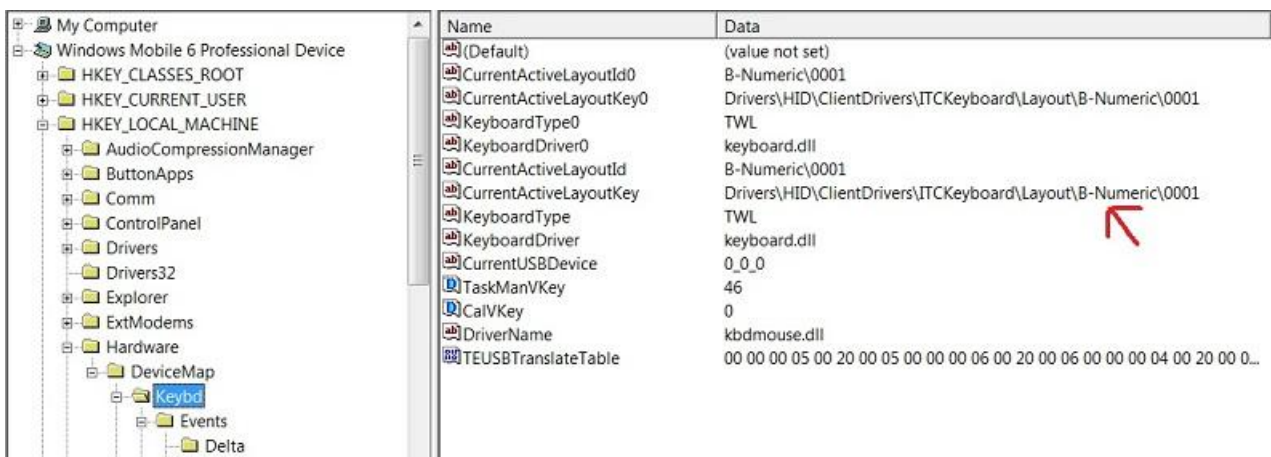


## 2.2 Map a button on named events to catch the button by software

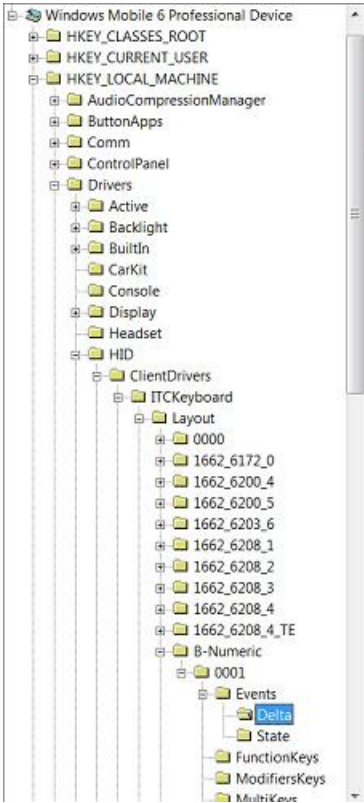
There is a possibility to catch a button to indicate if it is pressed or released. Therefore you must do a few steps in the registry:

- First step is to locate the layout of your USB keypad in the registry of your device. The path to the current active USB keypad is stored in the registry entry “*CurrentActiveLayoutKey*” which you can find in the following path of your registry:  
[HKEY\_LOCAL\_MACHINE\Hardware\DeviceMap\Keydb].

Example: The “*CurrentActiveLayoutKey*” of a Ci70 numeric keypad is “*Drivers\HID\ClientDrivers\ITCKeypad\Layout\B-Numeric\0001*” as you can see in the following picture.



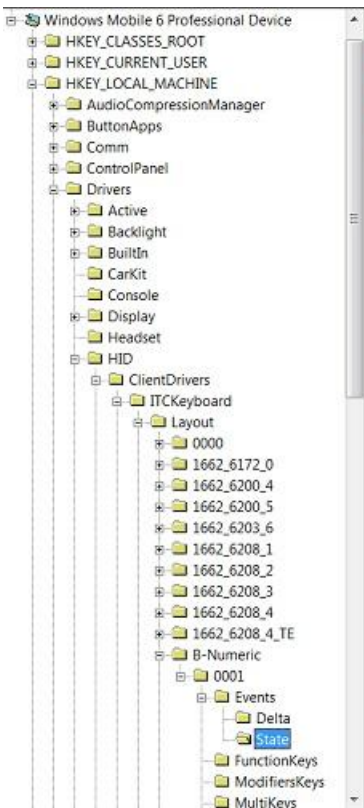
- Next step is to create named events. You need two events – a delta and a state event. Choose a unique name for the events e.g. “*DeltaTriggerEvent*” and “*StateTriggerEvent*”. These two events have to be added to the list of delta and state events in the registry at the path you have located in the first step (“*Drivers\HID\ClientDrivers\ITCKeypad\Layout\B-Numeric\0001*”). Create a new string value in the “*Events\Delta*” folder named “*EventX*” where X is the next free value and add the name “*DeltaTriggerEvent*” on it. Create also a new string value in the “*Events\State*” folder named “*EventX*” (the X has to be the same value as the X of the “*DeltaTriggerEvent*”) and add the name “*StateTriggerEvent*”.



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- HKEY\_CLASSES\_ROOT
- HKEY\_CURRENT\_USER
- HKEY\_LOCAL\_MACHINE
  - AudioCompressionManager
  - ButtonApps
  - Comm
  - ControlPanel
  - Drivers
    - Active
    - Backlight
    - BuiltIn
    - CarKit
    - Console
    - Display
    - Headset
    - HID
      - ClientDrivers
        - ITCKeyboard
          - Layout
            - 0000
            - 1662\_6172\_0
            - 1662\_6200\_4
            - 1662\_6200\_5
            - 1662\_6203\_6
            - 1662\_6208\_1
            - 1662\_6208\_2
            - 1662\_6208\_3
            - 1662\_6208\_4
            - 1662\_6208\_4\_TE
            - B-Numeric
              - 0001
                - Events
                  - Delta**
                  - State
                - FunctionKeys
                - ModifiersKeys
                - MultiKeys

| Name      | Data                    |
|-----------|-------------------------|
| (Default) | (value not set)         |
| Event5    | DeltaTriggerEvent ←     |
| Event4    | ITC_POWER_KEY_DELTA     |
| Event3    | ITC_BACKLIGHT_KEY_DELTA |
| Event2    | DeltaRightScan          |
| Event1    | DeltaLeftScan           |

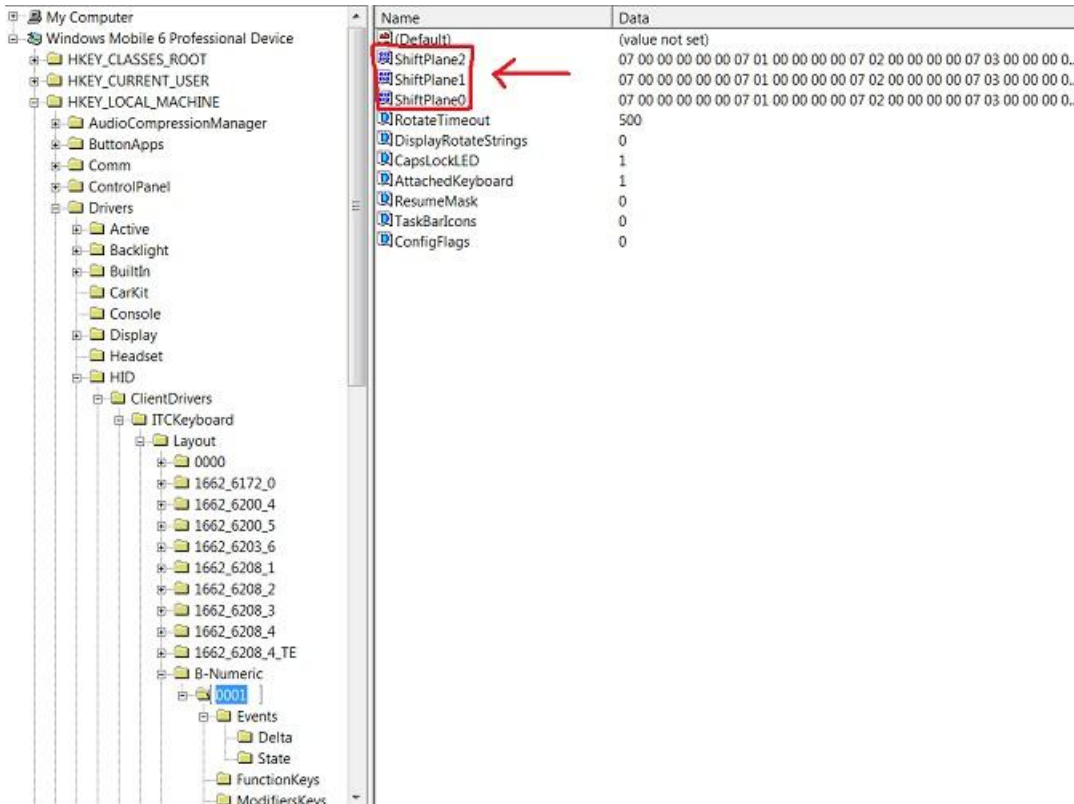


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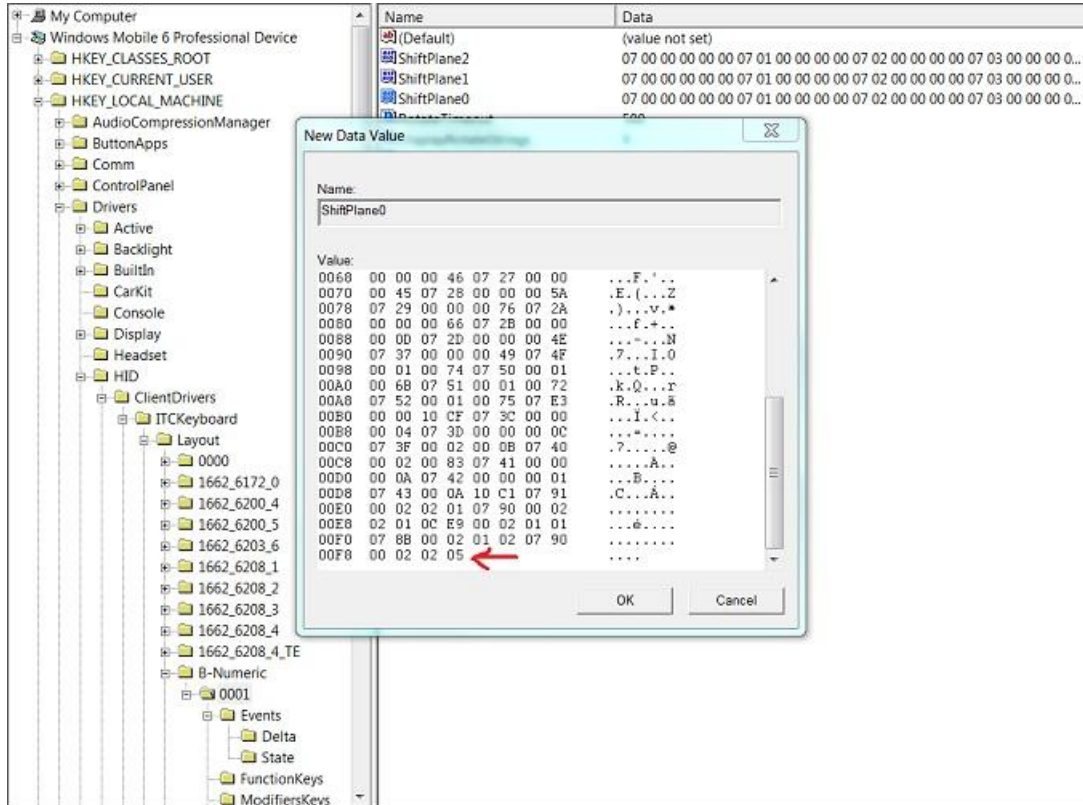
- HKEY\_CLASSES\_ROOT
- HKEY\_CURRENT\_USER
- HKEY\_LOCAL\_MACHINE
  - AudioCompressionManager
  - ButtonApps
  - Comm
  - ControlPanel
  - Drivers
    - Active
    - Backlight
    - BuiltIn
    - CarKit
    - Console
    - Display
    - Headset
    - HID
      - ClientDrivers
        - ITCKeyboard
          - Layout
            - 0000
            - 1662\_6172\_0
            - 1662\_6200\_4
            - 1662\_6200\_5
            - 1662\_6203\_6
            - 1662\_6208\_1
            - 1662\_6208\_2
            - 1662\_6208\_3
            - 1662\_6208\_4
            - 1662\_6208\_4\_TE
            - B-Numeric
              - 0001
                - Events
                  - Delta
                  - State**
                - FunctionKeys
                - ModifiersKeys
                - MultiKeys

| Name      | Data                    |
|-----------|-------------------------|
| (Default) | (value not set)         |
| Event5    | StateTriggerEvent ←     |
| Event4    | ITC_POWER_KEY_STATE     |
| Event3    | ITC_BACKLIGHT_KEY_STATE |
| Event2    | StateRightScan          |
| Event1    | StateLeftScan           |

- Third step is to map a key to the event index X of the named events “*DeltaTriggerEvent*” and “*StateTriggerEvent*”. You can find the registry entries for the active keys of the keyboard in the “0001” folder at the path you have located in the first step (“*Drivers\HID\ClientDrivers\ITCKeyboard\Layout\B-Numeric\0001*”). There are 3 “*ShiftPlanes*” in which the key functionalities are described:
  - ShiftPlane0 – Normal – is used if neither Gold nor Aqua key is pressed
  - ShiftPlane1 – Gold – is used if the Gold key is pressed
  - ShiftPlane2 – Aqua – is used if the Aqua key is pressed



In the described example the events should be mapped to the blue center scan button. For mapping the center scan button on the events “*DeltaTriggerEvent*” and “*StateTriggerEvent*” you must modify the value for that key in “*ShiftPlane0*”, “*ShiftPlane1*” and “*ShiftPlane2*”. The value of that key is “07 90 00 02 02 01” where 07 = USB code page, 90 = USB usage, 00 02 02 = flags (02 = non-repeating (key does not auto repeat), 02 = key reacts on a named event), 01 = index of the named event. The only thing which is to do for mapping this key on the created named events is to change the last value “01” to “05” because the created events “*DeltaTriggerEvent*” and “*StateTriggerEvent*” have the index 5 because of “*Event5*” in the registry. So add the new value “07 90 00 02 02 05” at the bottom of the list in the “*ShiftPlane0*”, “*ShiftPlane1*” and “*ShiftPlane2*”. Now the center scan button is mapped to the created events. A reboot is necessary after doing the changes in the registry.



- Now all the settings in the registry are done so we can start catching that named events and do whatever we want if the center scan button is pressed.  
Create two events in your application source code by calling the windows function "CreateEvent()" and set the name of the events to the named events at the registry ("DeltaTriggerEvent" and "StateTriggerEvent").

```
HANDLE hDeltaEvent = CreateEvent(NULL, FALSE, FALSE,
                                TEXT("DeltaTriggerEvent"));
HANDLE hStateEvent = CreateEvent(NULL, FALSE, FALSE,
                                 TEXT("StateTriggerEvent"));
```

Next step is to wait for the delta event ("DeltaTriggerEvent"). Use the windows function "WaitForSingleObject()" or "WaitForMultipleObjects()" to catch the delta event. If the delta event is caught you must wait for the state event ("StateTriggerEvent") to check if the center scan button is pressed or released.

```
DWORD dwEvent = WaitForSingleObject(hDeltaEvent, INFINITE);
If(dwEvent == WAIT_OBJECT_0)
{
    if(WaitForSingleObject(hStateEvent, 10) == WAIT_OBJECT_0)
    {
        // center scan button is pressed
    }
    else
    {
        // center scan button is released
    }
}
```

Do this in a background thread so that the application won't be blocked while waiting that the center scan button is pressed. If you do no longer need the event functionality close the event handle with the windows function "CloseHandle()".



### 3 OEM GRID

#### 3.1 OEM Scanner Grid

The Scanner Grid offers you the possibility to edit the read data from reading with a head module. To set a Scanner Grid open the Intermec Settings (Settings->System->Intermec Settings). Scroll down and click on "Virtual Wedge" (see *Pic28*). Then click on "OEM Device Wedge" (see *Pic29*). In the next window you can set a Scanner Grid (see *Pic30*). The expression which you can see in *Pic30* says that only the last characters of read data are output. For more examples for editing the Scanner Grid see <http://community.intermec.com/t5/General-Development-Developer/GRID-Examples/m-p/3018>.

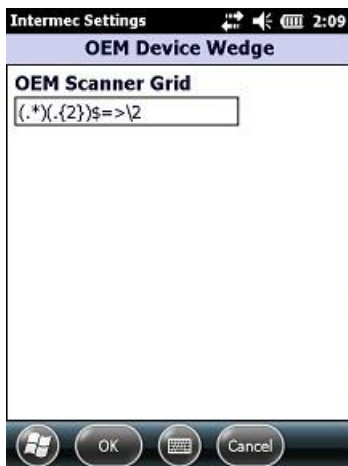
Pic28: Virtual Wedge



Pic29: OEM Device Wedge



Pic30: OEM Scanner Grid



For more Information about editing Scanner Grid see [http://intermec.custhelp.com/app/answers/detail/a\\_id/7220/kw/GRID](http://intermec.custhelp.com/app/answers/detail/a_id/7220/kw/GRID) and [http://community.intermec.com/t5/forums/searchpage/tab/message?allow\\_punctuation=true&filter=labels&q=grid#message-list](http://community.intermec.com/t5/forums/searchpage/tab/message?allow_punctuation=true&filter=labels&q=grid#message-list)