

Document Type	Firelink 2 Procedures	Author	AW	Revision	01
Title		Revised	18 June 2012		
Horn to Strobe Conversion Procedure					

1 Overview of Procedure

1.1 Purpose

This document is written to help facilitate converting **ISD-2501UW** horn only units to **ISD-2501UWS** horn with strobe units. Normally strobe units are manufactured at Integrated Microelectronics Inc. in the Philippines; however occasionally there is need to convert some horn only units to strobe when an unusually high number of strobe units have been ordered.

1.2 Requirements

- You will need a computer workstation with at least a dual-core processor, plenty of RAM memory running Windows XP, Vista or Windows 7
- An MPLAB ICD3 (or ICD2) programming “puck” –The MPLAB PM3 can also be used if you have Signalink Protected Programmer Software and a Signalink Protected Programmer Board with power supply this is primarily used for initial programming and generally not used for conversions.*
- ISD 2.5 Programming Interface with 12V DC Adapter
- MPLAB IDE software version 8.4 or higher
- Avro Uploader software
- Current firmware versions for the pic processor (2.5.5.0 at the time of this writing)
- A large common slotted screwdriver and a smaller phillips screwdriver
- Blank 2 part Avery 18126 (8.5” x 5.5”) box label
- Strobe UL/ULC rear labels 177.0027
- 12up Excel label template 177.0042 with the correct firmware revision 2.5.5.1 or 2.7.1.3
- A barcode scanner
- Clear Strobe Covers 190.0010/190.0027 (these initially came in two pieces the clear cover and a small metal reflector but now come mated together as one piece)
- Strobe boards PCA 010.0011
- ESD protection (electrical static discharge protection)

2 Hardware Conversion Section



2.1 Cover removal

It is recommended to do conversions in multiples of 12 as that is the package size which ISD's are packed and stored in and each of these boxes these has a label with the VID or serial numbers plus the date code of manufacture. You will remove the ivory cover by inserting a large slotted screwdriver into the recessed area at the curved bottom end of the ISD and gently depressing the tab inside until it allows removal of the

Document Type	Firelink 2 Procedures	Author	AW	Revision	01
Title		Revised	18 June 2012		
Horn to Strobe Conversion Procedure					

cover. (Do not push too hard or you will damage the tab and then the cover will fit loosely when it is reused) See picture 2.1.1



2.1.1

2.2 Dismantling ISD Housing

Next we will turn the ISD over and slid off the battery cover and remove the battery. This gives us access to the other two of the four hi-lo plastic tapping screws that hold the ISD housing together. Remove the 4 screws with the small Phillips screwdriver. Note; you do not need to remove the screws completely, just enough to separate the two halves of the housing. Approximately 3-4 turns of the screwdriver. This will allow you to keep the screws in their recess and you will not lose them either. See pictures 2.2.1



2.2.1

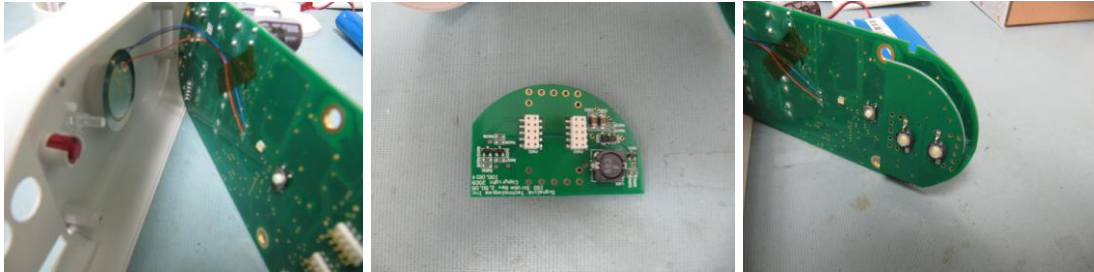
2.3 Attaching Strobe Board

**NOTE before you start this section of the conversion ensure that you are grounded by some ESD system to prevent damage to the sensitive electrical components in the ISD and the strobe PCA*

With the ISD lying on its side carefully separate the ISD PCA from the front half of the housing taking care of the piezo wires which connect the two. These small wires should already be taped to the PCA to prevent accidental pinching or cutting of the wires when putting the PCA and housing back together. With the bottom of the PCA exposed you will now take the small strobe PCA and mate its two 10 pin female headers with the two 10 pin male header on the ISD PCA. See pictures 2.3.1

Document Type	Firelink 2 Procedures	Author	AW	Revision	01
Title		Revised	18 June 2012		
Horn to Strobe Conversion Procedure					

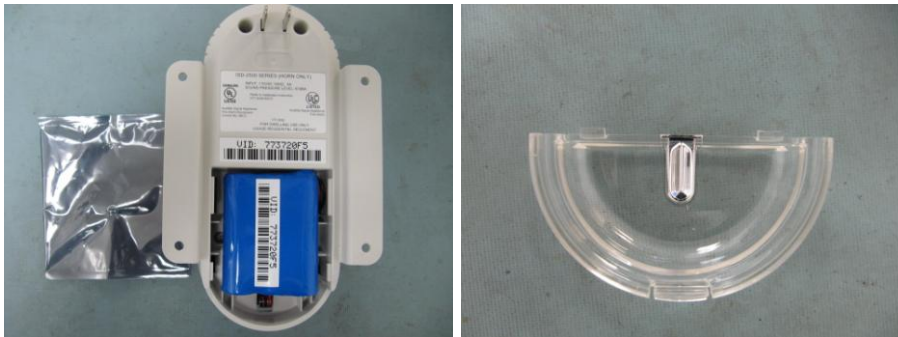
2.3.1



2.4 Reassemble ISD

Now that you have the strobe board attached to the ISD PCA you will carefully mate the front and rear housing and tighten the four screws. Keep in mind these are self tapping screws hi-lo and any more than about 3-4 turns of the screw driver will result in stripping of the holes. Do not use an electric screwdriver! Install the battery carefully seating the battery connector onto the 3 pin header on the ISD (it is keyed to ensure correct polarity) with the serial number facing out as shown in picture 2.4.1 Replace battery cover but leave the clear strobe cover (pictured below) off for now as you will need access to the programming header. You are now ready to flash the ISD to a Strobe version by programming the PIC16F886 processor only.

2.4.1



3 Firmware Conversion Section

3.1 Programming the PIC - setup

Connect the ICD2 or ICD3 programmer to the computer you will be using to flash via usb cable. This will power the “puck” and transfer data.

Connect the ICD2 or ICD3 programmer to the Signalink ISD2.5 programming interface board using the supplied RJ-45 (telephone) cable.

Plug in the supplied 12V DC power adapter and connect it to the Signalink ISD 2..5 programming interface board.

Document Type	Firelink 2 Procedures	Author	AW	Revision	01
Title		Revised	18 June 2012		
Horn to Strobe Conversion Procedure					



3.1.1

3.2 Programming the PIC – software

Start the MPLAB IDE software. In the MPLAB software use File>Import and browse to the location where you have placed the current release firmware. Choose the correct PIC firmware for the Strobe ISD being programmed.

V25_PIC16F886_2.5.5.0_strobe.hex

Use Programmer > Select Programmer and select the ICD2 or ICD3 depending on which puck you are using at the time.

Use the Programmer > Settings and select the Program tab. Click “manual” button and make sure there is a checkmark in the following boxes

- Erase all before Program
- Program
- Configuration
- EEPROM
- ID
- Then click the button that says “Full Range”
- Then click Apply, then click OK

****IMPORTANT NOTE****

Move the slide switch to the off position before plugging in the programming cable into the ISD! Inserting the connector while the programmer is powered on can cause the ICD2 or ICD3 to reset and require the MPLAB software to be shut down and restarted.

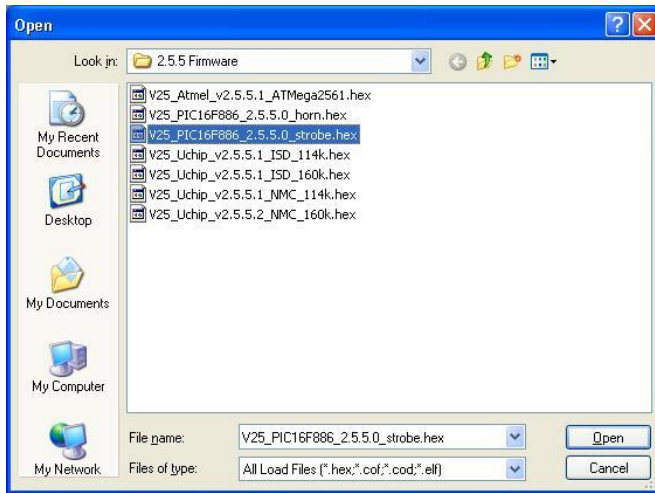
Also note the orientation of the ribbon cable from the Signalink 2.5 programming interface board to the ISD programming header is opposite the keyway on the board (I strongly recommend having several new cable made)

Next you can connect the ISD 2.5 programming interface board’s ribbon cable to the ISD header as described in the note above.

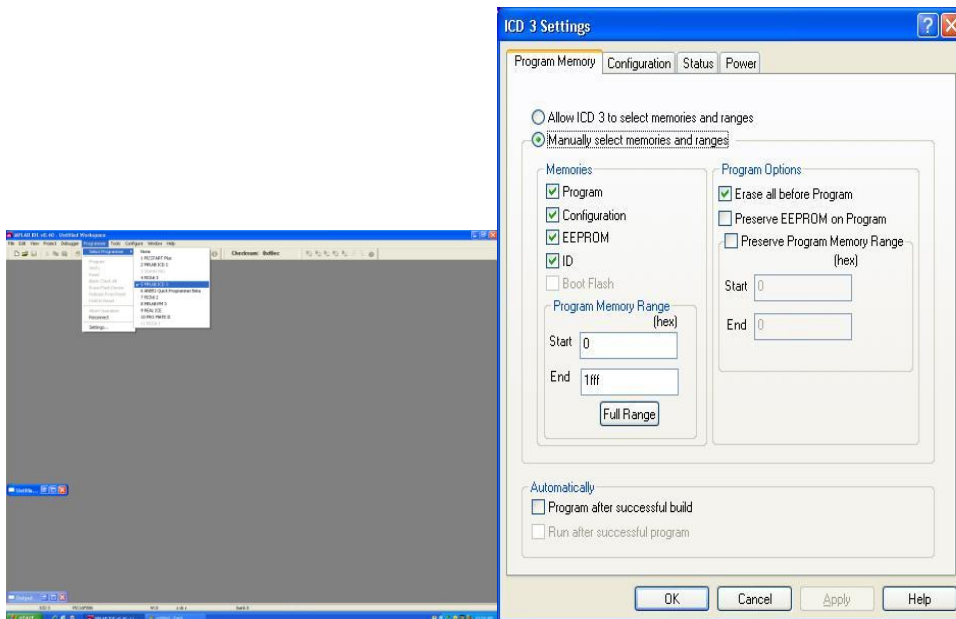
Move the slide switch to the on position you will see the boards LED light up green.

See pictures below describing the actions in 3.2.1

Document Type	Firelink 2 Procedures	Author	AW	Revision	01
Title		Revised	18 June 2012		
Horn to Strobe Conversion Procedure					



3.2.1



3.3 Flash ISD

Use Programmer> Program to begin flashing. Note: ALT + G is a convenient keyboard shortcut for this operation. The message window should now display programming progress. Wait for the confirmation message verified programmed.

NOTE: If you are going to program another ISD, remember to return the slide switch to the off position before plugging the ribbon cable into the next ISD to prevent resetting of the ICD2 or ICD3 thus causing a required restart of all the software.

<i>Document Type</i>	Firelink 2 Procedures	<i>Author</i>	AW	<i>Revision</i>	01
<i>Title</i>		<i>Revised</i>	18 June 2012		
Horn to Strobe Conversion Procedure					

3.4 Test ISD and Pack

Next you will test the ISD for a successful flashing to a strobe unit. Using an NMC enroll devices and use the NMC to run ISD tests. Once you have confirmation that everything was successful you can now put the new Strobe Label on the back of the ISD and put the clear strobe cover on the device and pack in box labeling it correctly as a strobe unit. The new 12 pack box will require a new 12 up label printed from an excel file 177.0042 which you use a barcode scanner to populate with the VID or serial numbers of the devices being packed in the box. This is printed on a regular computer laser or bubble jet printer.

3.5 Adjust Inventory

Here is a list of inventory adjustments that will be required as you convert one product to another. These numbers are based on a box of 12 ISD's converted at a time. Do the appropriate adjustments based on your quantity converted.

- Subtract from inventory 12 clear strobe covers 190.0010/190.0027 (two part assembly cover with reflector).
- Add back to inventory 12 ivory strobe covers 190.0013
- Subtract from inventory 12 Strobe PCA's 010.0011
- Subtract 1 blank 12up 2 part Avery label [8.5" x 5.5" x 2 per] or equivalent 177.0046
- Subtract from inventory 12 blank labels 177.0030 to be printed on demand to become a 177.0027 (expense part not counted in inventory) using a zebra thermal printer or equivalent.

End of Procedure