

Revision Report INFO-Link Fieldbusmaster with new Toshiba Transmitter TOTX195A (2008), INFO-Link cards with new Transmitter TOTX1950 and new Receiver TORX1950 (2014)

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1.1 **Revision Report from September 24th 2014**

Toshiba does not longer produce the fibre optical transmitter TOTX195A and the receiver TORX194. The transmitter is replaced by the part TOTX1950 and the receiver by the part with the number TORX1950. The new generation of parts have a different optical wavelength spectre with the max. optical output power at a diverse wavelength- as it was the case with the transmitter TOTX195A in the year 2008. Our test show that for compatibility (reliable INFO-Link communication) with the previous two generations of transmitters (TOTX195 and TOTX195A) at least the updated firmware of the year 2008 for the INFO-Link TOTX195A transition has to be running on the INFO-Link Master card.

For this reason- if you receive a card from us with new receiver TORX1950 and the new transmitter TOTX1950- make sure that the INFO-Link fieldbus master is equipped at least with the firmware/ Gal-Revision mentioned further below in the document otherwise reliable communication is not possible.

1.2 **Revision Update from September 5th 2008**

The new Toshiba transmitters TOTX 195A work better on our INFO-Link Boards than expected. Fortunately the concerns about increased Info-Link Error-Counters did not come true.

During the last nine months only two boards caused more INFO-Link communication Errors with the new TOTX 195A transmitters. One board was the INFO-PCI2, the second board was a customer specific output stage. Our extensive and harsh tests have shown that no other boards produce communication errors in a normal industrial environment. Even with intense disturbances no additional communication errors could be forced.

We continue to observe this issue very carefully. If you run in any problems with INFO-Link Boards with new Transmitters please contact us by phone or e-mail:

Phone: +41 44 956 20 00

e-Mail: info@indel.ch

1.3 **Revision Report from August 25th 2008**

Toshiba released a new fibre optic transmitter: TOTX195A. The Type A transmitter has a slightly different wavelength and different light power. Toshiba does not produce the old transmitter any more.

This altered characteristics affect the transmitting of the INFO-Link telegrams. An INFO-Link with at least one board with a new type A transmitter may shows more INFO-Link errors. This effect will be increased with noise. Typically the INFO-Link errors can not be assigned to a particular board.

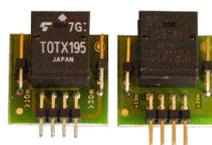
Please check the INFO-Link Error Counter on your machine after you have installed a new module. On rare occasions it may happens that the Error-Counter counts faster after the installation of the module with a new TOTX195A. In this case the INFO-Link MASTERCARD needs an update of the Fieldbus-Sequencer.

To compensate the different characteristics of the type A transmitter an adapted INFO-Link sequencer was released for all INFO-LINK mastercards.

We recommend this procedure: If an INFO-Link Module gets replaced on an existing machine, check the Error-Counter of the INFO-Link. If this counter counts faster after the installation of the new board it is necessary to update the FPGA or GAL software of the INFO-Link Master.

Type A transmitters do not have the white description on the housing, instead the are engraved.

Old Transmitter TOTX195



New Transmitter TOTX195A

1.4 **Affected Cards**

In brackets you can find the firmware version that is needed for compatibility with all the three generations of Toshiba modules at least:

- IMP-MAS4 (Rev1.05)
- GIN-SAM3 (“normal” firmware: all Rev. compatible, old InfoLink: 0xA4)
- INFO-SAM2 (Gal-Rev2.B)
- INFO-PCI2 (Gal-Rev1.7)
- IMP-MAS2 (Gal-Rev2.04)
- IT-MAS2 (Gal-Rev1.01)
- INFO-PCM (Gal-Rev4.3)
- INFO-MAS (Gal-Rev2.5)
- INFO-PPC (Gal-RevE with HW-Rev0, Gal-Rev6 with HW-RevA)
- INFO-SAM (Gal-Rev3.A)
- INFO-MASi (Gal-Rev3)

1.5 **Access to the FTP-Server**

On our FTP-Server we provide all necessary GAL and FPGA-Files as well as additional documentation for the update procedure. Please log in with the following link: (You can use your Indel FTP account or get the user and password directly from INDEL if your company does not have an account at Indel.)

```
ftp://ftp.indel.ch  
  
//../indel/hardware/..
```

Please choose the proper Hardware revision (HW-Rev0, HW-RevA, ...) of your master card.
Always use the latest revision (GAL-RevX.Y) available on the FTP-Server.

1.6 **ISP Download Cable**

Some of the Mastercards need a special download cable to proceed the download. This cable can be obtained from Intel AG:

Order No.	Label	Type
610737000	USB-ISP	USB-Download Cable

The download software is part of the IMD-installation. You will find the ispLoad.exe program in the IMD-path. It is stored in the \\...\imd\bin directory. Please use IMD Setup version 4.12.xx or higher.

Here you can download the IMD - Intel Master Desk.

```
ftp://ftp.intel.ch
//../intel/Setup/..
```

A second setup is available, it contains only the USB-Drivers and the ispLoad.exe. Use this setup if you run an IMD older than setup Revision 4.12.xx. You will find this setup in the same folder as the IMD-Setup IspLoadSetup.exe.

1.7 **Update with ISP Download Cable**

For this boards the ISP-cable is necessary:

- INFO-SAM2
- INFO-PCI
- INFO-PCM
- INFO-MAS
- INFO-PPC
- INFO-SAM
- INFO-MASi

1. Connect Download cable with your PC, Laptop
2. Connect Download cable with Intel Card. The card must be connected to the power supply (See technical specification for voltage range).

The coloured mark on the connector shows Pin 1.

3. Open a DOS-Box on your PC, change to the directory with the *.isp or *.vme File and run the ispLoad program:

```
c:\>ispLoad.exe pvv Device.isp // update GAL
c:\>ispLoad.exe s // scans the device and shows current
revision (only Lattice GALs)
c:\>ispLoad.exe /? // show help
```

4. After the Update the current revision of the GAL-Software is shown on the screen (only some of the Lattice GALs).
For all other targets with different GALs or FPGAs, the current revision of the GAL can be found in the INCO-Explorer Target.Prop.GALRevision

1.8 Update for boards with PPC-Card

The following cards do not need a download cable for FPGA updates, all this card are equipped with a PPC-Card:

- INFO-MAX2
- INFO-SAC2
- INFO-HCS2r
- IT-MAS2
- IMP-MAS2

These cards can be updated by software. If possible reboot the module and start it up with the Emergency Boot-System to prepare the update. Use the emergency plug and connect it to the serial interface.

Close all Memory-Dumps, IncoExplorer, ACSShow and other programs that communicate with the target. Please Use ispLoad.exe revision 1.41 or later.

To proceed the update enter the following command into a command line interpreter:

```
ispLOAD isvf FPGA-FILE_epv.isvf my_target
```

After the update was successful, the target must be restarted. The new revision number can be seen with Inco-Explorer: my_target.Target.GalRevision . If the update fails, do not power down the card! First try it again.

Caution: A power down during the update process can damage the card. After a restart it won't work properly and must be sent back to Intel AG.

1.9 Update INFO-PCI2

INFO-PCI2 can be updated with the tool pciload.exe directly over the PCI Bus without a cable.

Usage: PCILoad operation [drive:][path]vmefile1 [vmefile2] Slot [Bus] [tTicks]

```
operation    "pv" = Program and verify
             "s" = Scan and display found PCI devices
             "x" = Scan and show extended info

Slot         PCI slot number as reported by "s"
             If -1 take the only available (won't work if there are more)

Bus          Bus number, default is 0

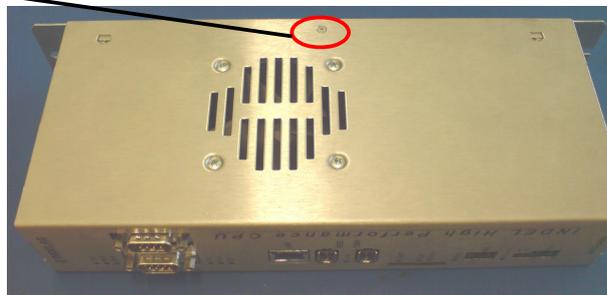
Ticks        Timing, default is auto

Example:     PCILoad s                               // scan pci-bus
Example:     PCILoad pv c:\my_file.vme 11           // load board plunged in
slot 11
```

1.10 *Open an INFO-SAM2 Box*

Only one screw must be removed to open the INFO-SAM2 Box.

Screw



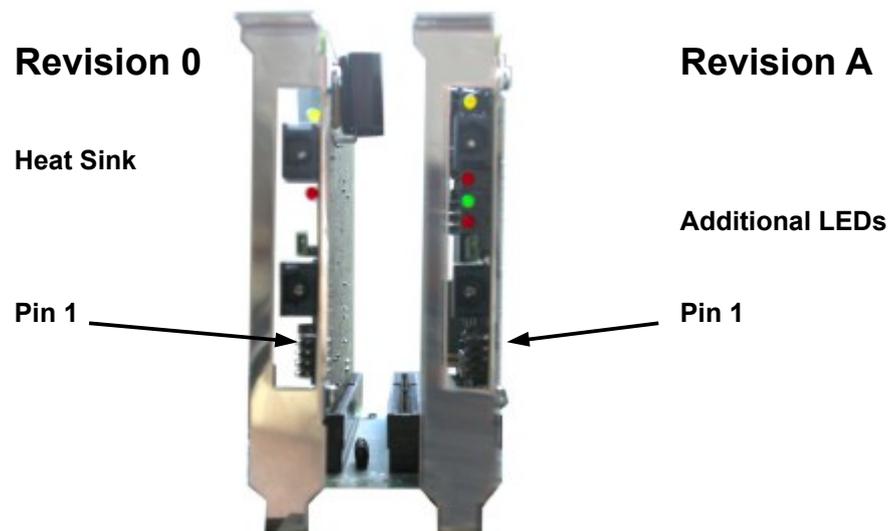
1.11 Distinguish different Revisions

INFO-PPC Rev 0, Rev A

The picture shows the differences between Rev. 0 and Rev. A:

1. Rev 0 has a heat-sink on the backside
2. Rev A has an additional red and green LED that can be seen from outside of the PC.

HW-Revision	PCB-No.	Description
Rev.0, 1MB	96223 100MHz,	large heatsink, heatsink on back of board
Rev.0, 4MB	96223 100MHz,	large heatsink, heatsink on back of board
Rev.A, 1MB	96223a 200MHz,	small heatsink, 2 additional LED's
Rev.A, 4MB	96223a 200MHz,	small heatsink, 2 additional LED's



INFO-PPC, INFO-PCI, 1MB, 4MB version

On the backside of the INFO-PPC and INFO-PCI card you will find a soldering bridge that indicates the memory size.



INFO-PCI with 1MB memory

Use Check PPC

With the checkppc tool you can determine the type and revision of your master without opening the PC.

To get the hardware revision enter the following command into a command line interpreter: `checkppc xx00` (xx00 is the address of the mastercard configured with the address switch on the board.)

Example for Hardware revision 0

```
C:> checkppc d000
```

```
CheckPPC, Version 1.02, Copyright(c) 1991,2000 Intel AG  
(Windows NT compatible)
```

```
INFO-PPC found at address D000:0000, Id = 6E1B  
  prozessor type: PPC603e  
  RAM size : 1 MByte  
  GAL revision : 11
```

Example for Hardware revision A

```
C:> checkppc d000
```

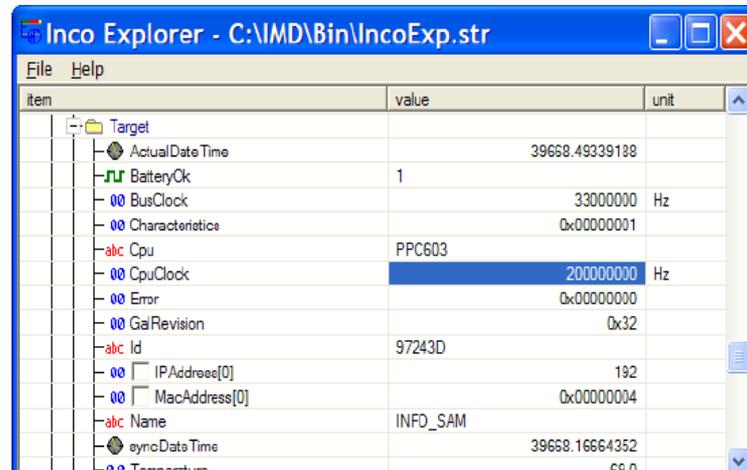
```
CheckPPC, Version 1.02, Copyright(c) 1991,2000 Intel AG  
(Windows NT compatible)
```

```
INFO-PPC found at address D000:0000, Id = 6E1B  
  prozessor type: PPC603e  
  RAM size : 1 MByte  
  GAL revision : 11
```

```
Hardware Revision : 96223a, id2 = 3360  
  bus frequency : 33 MHz  
  CPU multiplier : 6.0x  
  CPU frequency : 200 MHz
```

INFO-SAM Rev A, B, C, D, E, F

On new cards (from rev. B on) you can also see the current GAL-revision with the Inco-Explorer. If you can't see the entry GalRevision, you have to enable the Invisible Items with the right mouse button.

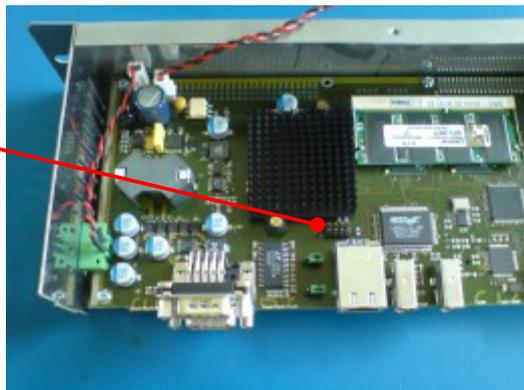


HW-Revision	Id, PCB-No.	Description
Rev.A	96223a	100MHz CPU, large heatsink
Rev.B,C	96223b,-c	200MHz CPU, small heatsink
Rev.D,E,F	96223d,-e,-f	200, 330, 500MHz CPU, small heatsink, LAN interface
Rev.E,F	96223e,-f	330, 500MHz CPU, small heatsink, LAN interface

The Hardware-Revision is also printed on the board. Further documentation about the different Hardware Revisions can be found on the FTP-Server in the INFO-SAM directory.

Location of GAL-Connector INFO-SAM2

Connector
Pin 1



Location of GAL-Connector INFO-SAM

Connector
Pin 1

