

TriMedia/Nexperia JTAG

FOR SOFTWARE DEVELOPMENT AND DEBUG OF EMBEDDED TRIMEDIA/
NEXPERIA BASED HARDWARE

The MDS TriMedia/Nexperia JTAG systems are designed to assist in debugging software running on the Philips Nexperia (TriMedia) family of processors. It provides the interface between a PC running the Nexperia debugger software and hardware such as MDS' Digital Media Adapter system or a user's own hardware design.

The JTAG card supports source level debugging over the JTAG port which is built into every TriMedia family member, including pnx130x, pnx150x, pnx019x, pnx170x and related parts.

Features:

- easy to install
- uses standard Nexperia debugger software
- extra MDS software reduces bring-up effort
- supports source level debugging
- fast downloading: 1.5 MByte/sec
- (PCI version) LVDS buffers for signal integrity
- 15 MHz TCK clock frequency with ability for other clock rates
- backed by MDS - the company that *knows* TriMedia development.

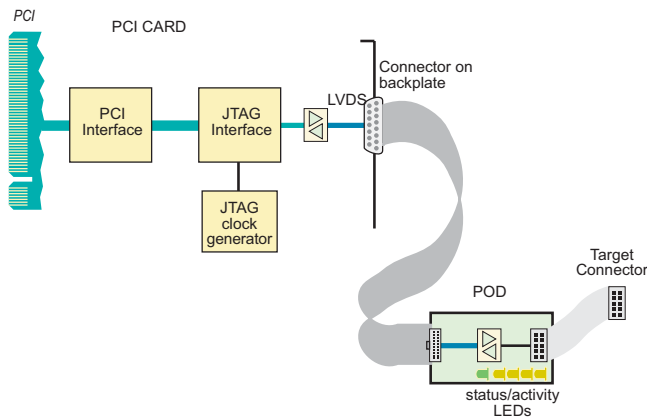
PCI: The card is installed in the PCI bus of a PC. LVDS buffers are used between the PC and a small pod to improve signal fidelity and allow for up to a 2 meter cable. The pod converts the LVDS signals to 3.3V logic compatible signals and is connected to a Nexperia JTAG port over four signal lines.

USB: Designed for use with USB High Speed 2.0 ports, the USB unit does not need an external supply.

Download speed is important as debug images can be 20MB or 30 MB in size; you can be waiting a long time if using emulators not specifically optimized for TriMedia. MDS emulators offer the fastest possible download times

The pods in both systems includes a power and activity LEDs to verify correct operation.

The source level debugger software runs on the PC, communicating with the JTAG interface hardware through a device driver. The TriMedia target system runs a debug monitor which monitors and responds to activity over the JTAG interface.



PCI JTAG - offers highest performance

USB JTAG - high performance download and ease of use with any PC with USB 2.0



Nexperia JTAG: source level debugging of embedded Nexperia systems

Supported software

- DVPMon - Philips debug monitor tool
- TmDbg - Philips source debugger
- JCon - MDS console
- Special MDS utilities:
 - o PciJtag, UsbJtag: Support dumping and modification of boot EEPROM, special hardware diagnostics modes, and more.
 - o Jpgm - EEPROM loader

Ordering information (order code is in *Italics>*)

MDS-JTAG-PCI: PCI TriMedia/Nexperia JTAG hardware.

- PCI card
- Diagnostic software and manual on CD
- Cables: PCI card to pod, pod to target (keyed 14 pin)
- Pod
- Adapters for older 8 pin and new mini 10 pin style. (separate special adapter needed for MediaBox)
- 90 day getting started support

MDS-JTAG-USB: PCI TriMedia/Nexperia JTAG hardware.

- USB 2.0 HS pod
- Diagnostic software and manual on CD
- USB cable, pod to target (keyed 14 pin)
- Adapters for older 8 pin and new mini 10 pin style. (separate special adapter needed for MediaBox)
- 90 day getting started support

NDK: Philips Nexperia Development Kit

- Compiler, linker, assembler
- Debugger
- Core libraries
- pSOS
- Utilities and examples

90 Day Startup Support (included with all MDS JTAG products)

- Help with installation of hardware/software.
- Problems in installation.
- How to use/run hardware or software that comes with the NDK.
- Analysis of diagnostics if target hardware fails JTAG based tests.

Please see the MDS website for a copy of the Support data sheet, which has full details.

Performance information

	jpgm programming 1797 bytes	dvpMon Download 9.3 MB	TimeDoctor Dump (typical)	exNDK read/write 10086 bytes	tmdbg Download 10.2 MB
PCI-JTAG	4 sec	2 sec	4 sec	65.6 sec 153 bytes/sec	4 sec
USB-JTAG	64 sec	4.5 sec	11 sec	91.6 sec 110 bytes/sec	6 sec

Related items

Please visit <http://www.mds.com> for more information on these and other software products to speed your design to market.

```
tmdbg - F:\wk\TRIMEDIAMDS\hello\JTAG\2tonegen.out
File Edit View Options Debug pSOS Windows Help
Source file: 2tonegen.c
Function:
F:\wk\TRIMEDIAMDS\hello\JTAG\2tonegen.c (cpu #0)
)
/*
 * Main sets DP buffer size, outputs header, invokes checkArgv
 * to drive output
 */
int
main(int argc, char **argv)
{
    /* print banner */
    DPsize(1024 * 1024);
    DP(("entering audio sinewave program, V1.0\n"));
    printf("sine: audio sinewave program, V1.0\n");
    tmHelpReportSystem(NULL);
    tmHelpReportSystem(stdout);

    checkArgv(argc, argv);
}

Messages / Console
downloading program ...
preparing downloadable memory image... done
sent load addr: 0x840
sent code size: 0x4c3a4
elapsed seconds: 1
bytes: 312228
microseconds per byte: 3.202788
target started, waiting for it to initialize ...
done.
stopped at addr: 0x00007900, line 124, main() in "2tonegen.c"
B 124* int
tmdbg>
```

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Nexperia is a trademark of Philips Semiconductor, Inc.



Nexperia/TriMedia Data Sheet rev 2b Jul 06

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