Steaming Video Application for the DM642 Evaluation Module

Quick Start Reference

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1. Overview

The following document describes a method of streaming video and audio over IP using the DM642 Evaluation Module from Texas Instruments. By connecting a DVD player or video camera to the DM642 the demonstration will show how the user can view and listen to the media from a web browser (e.g. Internet Explorer) and RealPlayer™.

Eointec Solutions introduces DSPIgnition.

DSPIgnition is a windows application that simulates an application running on a microprocessor in a microprocessor-DSP environment. DSPIgnition communicates with a DSP over JTAG or Ethernet and is available to software engineers who wish to develop their applications on a PC before importing their software to an embedded microprocessor such as an ARM or MIPs processor.

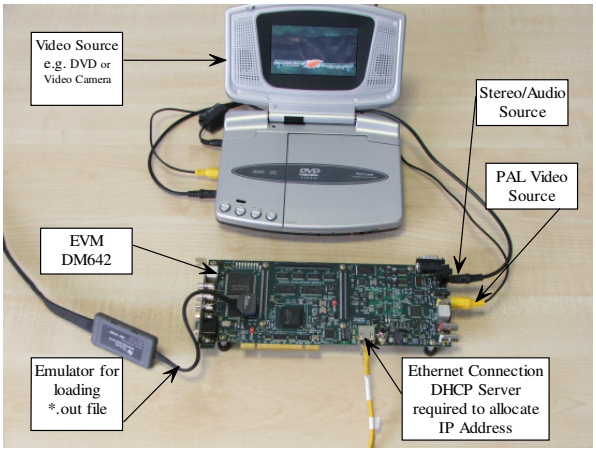
This allows engineers to design their application software without having to design expensive prototype hardware, this methodology saves substantial project costs and time to market.

The windows application can interface with the DM642 over IP and allows the user to change components within the DSP in real time. This may include changing the audio volume or video bit rate and also demonstrating how channels can be created and deleted in real-time. A media demo of how DSPIgnition works is available following installation of the software.

2. Requirements

2.1 Hardware

- DM642 Evaluation Module
- Video (PAL) and Audio source (DVD)
- Emulator
- LAN with DHCP capability
- PC running Windows connected to the LAN



Above shows the hardware setup

2.2 Software

1. Code Composer Studio(required for loading code)
2. Setup Disk

Contents

- DSP application - StreamVideoEointec.out
- DSPIgnition (Windows Application)- RealPlayer version 10.5
- DSPIgnition Demo
- Document

3. Installation

Install software

- Insert setup disk and run setup.exe, follow the instructions
- Go to start menu->programs->Eointec Solutions->RealPlayer and select InstallRealPlayer
- Follow the instructions and select RealPlayer™ as your Universal Media Player

Load DSP

- Setup hardware as in diagram on previous page
- Start Code Composer Studio (CCS)
- Make sure that CCS is connected to the EVM DM642 and load program StreamVideoEointec.out, this can be found in the installation directory (default is c:\program files\Eointec Solutions\DSPIgnition\DSP Application)
- Run DSP application from CCS, take a note of the IP address that has been assigned to the EVM, this appears in CCS debug window.

View Streaming Video

- Switch on the DVD player or Camera
- Open Internet Explorer, in the address bar type rtsp://<ipaddress assigned to DM642>/video (e.g. rtsp://192.168.1.3/video) and click GO
- RealPlayer™ should start. On the first run of RealPlayer™ the user requires connection to the internet so that RealPlayer™ can download the required codecs from its server
- The video should now play

4. Using DSPIgnition

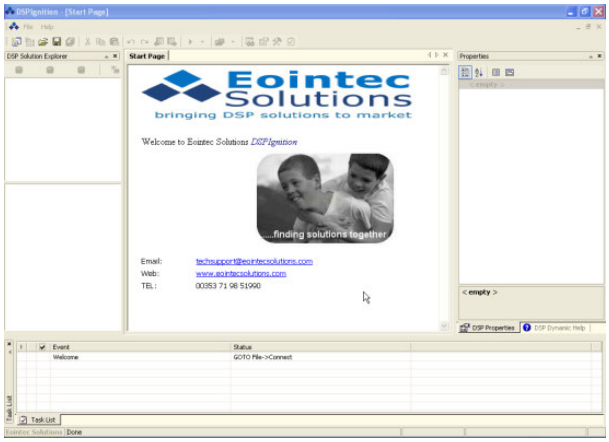
Video Demo

- To view Demo go to start menu->programs-> Eointec Solutions->Video Demo and select DSPIgnition Demo

DSPIgnition

4.1

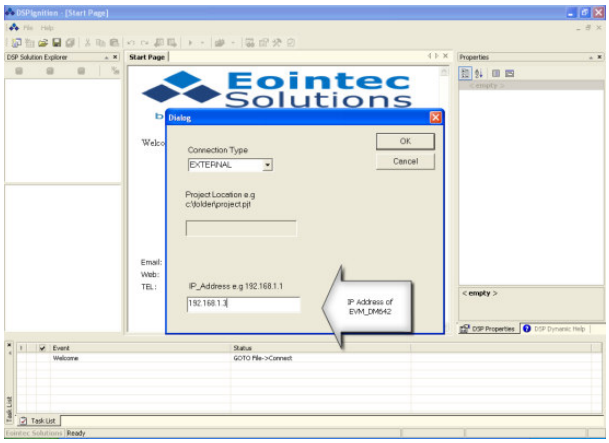
Open DSPIgnition from start menu->programs-> Eointec Solutions



4.2

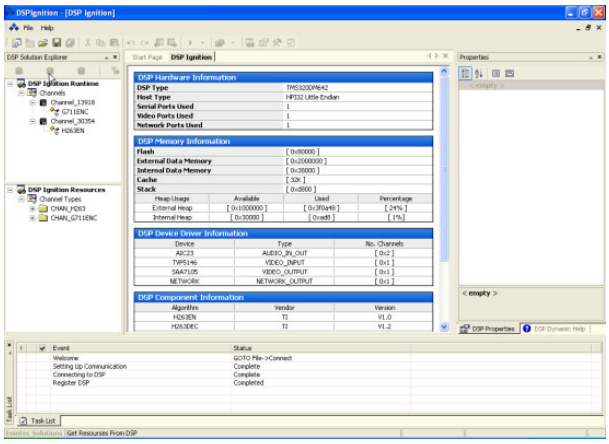
Log into the EVM DM642 using the IP address found in the debug window in CCS. To do this go to File-> Connect, select External from the dropdown Connection Type menu.

Type in the IP address in the active dialog box and hit OK.



4.3

Click on the active button  that appears, allowing the user to read the resources on the DM642. Once the windows application gets the DSP configuration the user is required to click on the register button  to display the configuration.

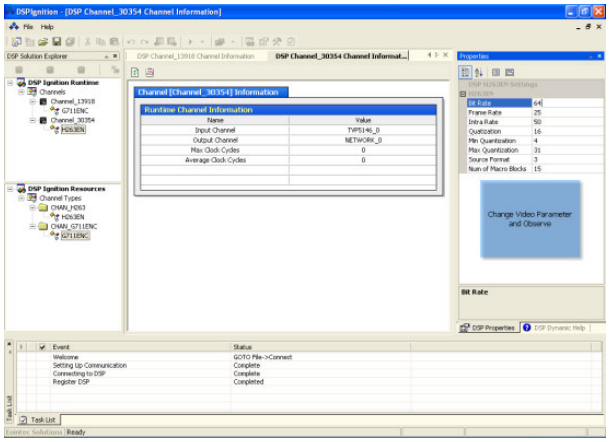


4.4

The centre window displays a mixture of hardware information including the type of DSP, the amount of external memory available and the type of codecs that are available on the board. Also included is a description of the software that is available on the DSP and this includes the software algorithms and the names of DSP software channels.

In the bottom left window, the DSP Ignition resources are shown. These are the available channels that are on the DSP and if you expand the Channel Type trees the user can see the algorithms that make up the channel.

The top left widow contains the channels that are currently running on the DSP. When the user clicks on an algorithm within a channel, the parameters of the algorithm appears on the right window. The user can change a parameter in real-time by typing a new parameter in the right hand window and pressing return. This new parameter is written to the DSP and the DSP updates itself.



4.5

The user can also create and delete channels in real time.
To create a channel go to the DSP Ignition runtime window right-click on Channels->select New Channel and a dialog box will open. The user selects a channel type and gives the channel a unique name and finally the user assigns input/output device drivers and port number to the channel. The input/output selection is in the form of "deviceDriver_PortNum".

To delete a channel, right-click on the channel you wish to delete and select delete channel.