TMDSCSK388 Quick Start Guide

User's Guide

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TMDSCSK388 Quick Start Guide

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2 Package Contents

- Processing DM388 CSK EVM
- Carrier card (full kit only)
- Camera module: Leopard Imaging LI-CAM-AR0331-1.8 (full kit only)
- Power supply: 5 V, 1.5 to 3 A (full kit only)
- Ethernet cable (full kit only)
- Component video cable (full kit only)
- One micro USB-to-USB cable (full kit only)
- SD card flashed with demo binaries
- USB SD card reader (full kit only)
- Quick start guide
- Warranty card

Users must have the following component (not included):

- Laptop with Windows® 7

The following components are optional:

- HDMI cables
- HDMI display

NOTE: Running the IPNC demos requires a DM388 CSK full kit (TMDSCS388) or a DM388 CSK standalone kit (TMDSCSK388SA) with a DM carrier card kit (TMDSCSKCC).

Windows Laptop Requirements – the following hardware and software requirements must be met to view video using Internet Explorer®.

- **Hardware**
  - Intel® Pentium® Dual-Core CPU at 3.0 GHz or equivalent
  - 4GB or more of system memory
  - Sound card: DirectX® 9.0c compatible sound card
  - Video card: 3D hardware accelerator card required – 100% DirectX 9.0c compatible
  - Ethernet network port and card
  - 100/1000 Ethernet switch and hub
- **Software**
  - Windows® 7 service pack 2
  - Serial terminal (for example, Tera Term v4.8 or higher)
  - Laptop screen resolution setting: 1280 × 960 (or higher) for a display of 720P or 1080P
  - XDS Emulation Software Package

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3 IPNC Demo Setup

There are two ways to stream video on the DM388 CSK.

- Streaming over Wi-Fi® – see Section 3.1 for demo setup and connections
- Streaming over Ethernet – see Section 3.2 for demo setup and connections

3.1 Running IPNC Wi-Fi Demo

3.1.1 Full System-Setup Overview

Figure 1 shows an example setup of the system.

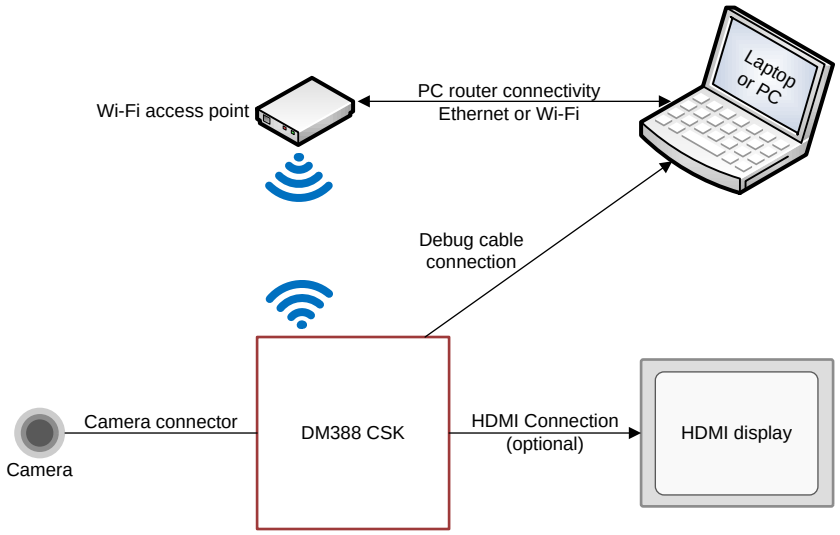

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Figure 1. Wi-Fi System

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3.1.2 Hardware Setup

Use the following instructions to setup the DM388 CSK hardware for Wi-Fi connectivity.

1. Connect a debug cable to the debug port of the DM388 CSK from the USB port of the laptop or PC.
2. Set switch 1 (SW1) to ON (see Figure 2).

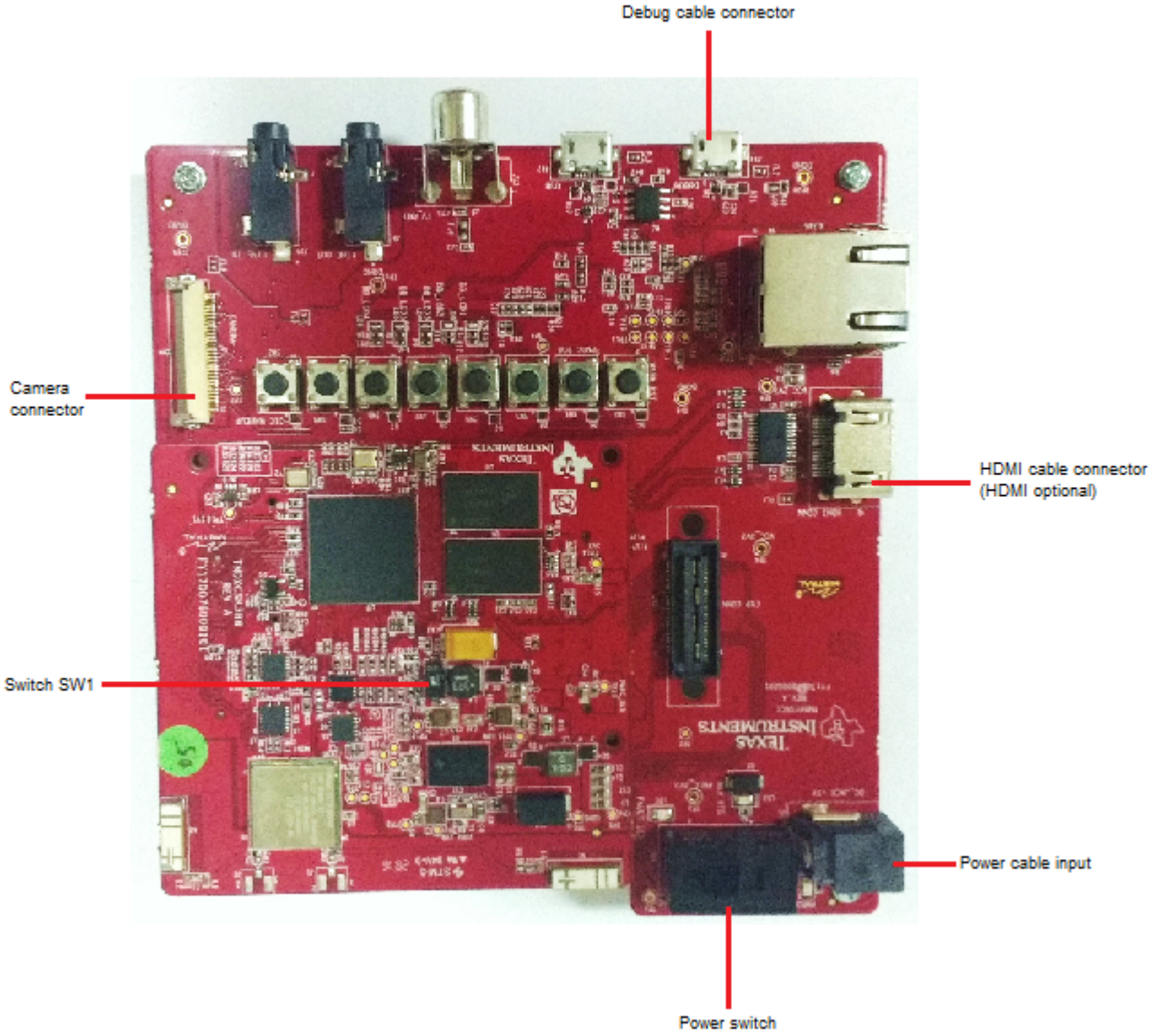

Figure 2. DM388 CSK Connections (1 of 2)

3. Connect the camera connector cable (flex cable) to the camera connector port on the DM388 board.

NOTE: The Wi-Fi router being used should be named ti81xx-AP, and security should be set to none.

4. (Optional) Connect the HDMI display to the CSK HDMI connector by using the HDMI cable.
5. Connect the power cable to the CSK power jack. To be ESD safe, plug in the other end of the cable after the power cable has been connected to the board.
6. Establish a network connection between the router and the laptop or PC.
7. See Section 4 to begin streaming.

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3.2 Running IPNC Ethernet Demo

3.2.1 Full System Setup Overview

Figure 3 shows an example setup of the system.

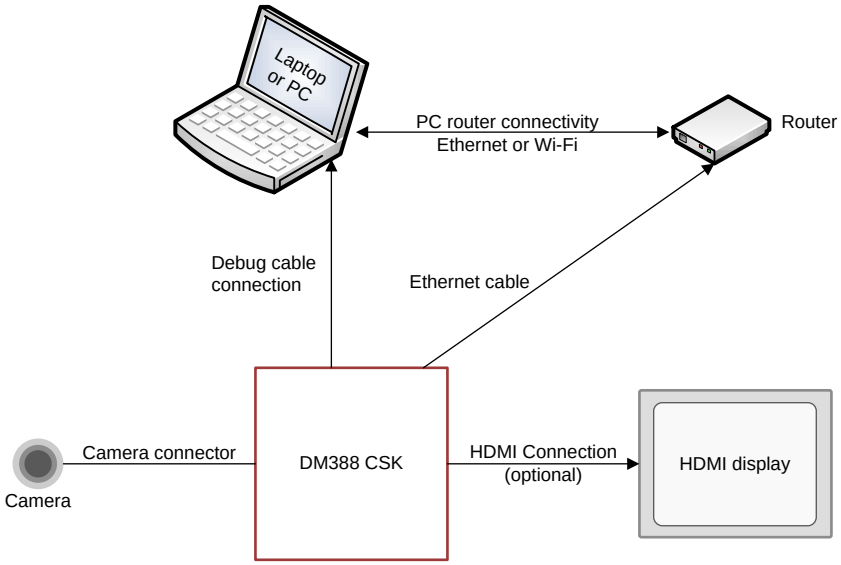

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Figure 3. Ethernet System

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3.2.2 Setup Steps

Use the following instructions to setup the DM388 CSK hardware.

1. Connect a debug cable to the debug port of the DM388 CSK from the USB port of the laptop or PC.
2. Set switch 1 (SW1) to ON (see Figure 4).

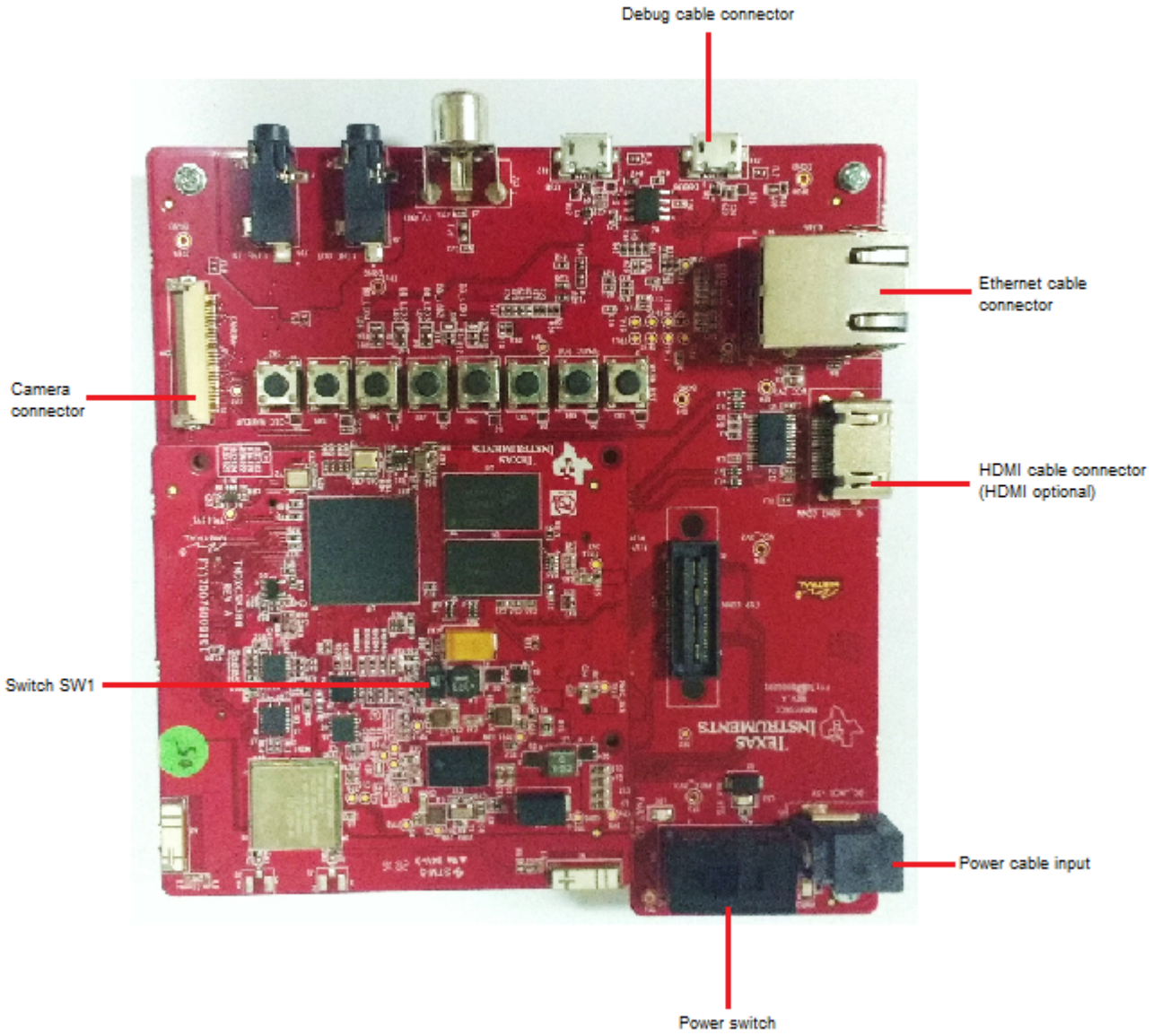

Figure 4. DM388 CSK Connections (2 of 2)

3. Connect the camera connector cable (flex cable) to the camera connector port on the DM388 board.
4. Connect the DM388 CSK to the laptop or PC by using an Ethernet cable or through a network hub.
5. (Optional) Connect the HDMI display to the CSK HDMI connector by using the HDMI cable.
6. Connect the power cable to the CSK power jack. To be ESD safe, plug in the other end of the cable after the power cable has been connected to the board.
7. See Section 4 to begin streaming.

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4 Running Video Streaming

4.1 XDS Driver Installation

Use the following instruction to install the XDS driver on the laptop.

1. Download the XDS emulation software (version 6.0.504.2) Windows installation image from *XDS Emulation Software Package*.

   Users must have TI credentials to download XDS.
2. Run the ti_emupack_setup_6.0.504.2_win_32.exe file.
3. Follow the instructions provided by the dialogue boxes while the program installs.

4.2 Power On and Determining Board IP Address

Use the following instructions to power on the board and determine the IP address of the board.

1. Ensure that all of the connections are setup as detailed in Section 3.
2. Insert the SD card in the SD card slot on the DM388 CSK.
3. Set the power switch to ON.
4. Run a terminal session (such as Tera Term on Windows) on the laptop or PC.
5. Configure the terminal session to connect to the debug serial port with the following characteristics (see Figure 5):
   - Port: port that the debug cable is connected to
   - Bits per second: 115200
   - Data bits: 8
   - Parity: None
   - Stop bits: 1
   - Flow Control: do not select any option

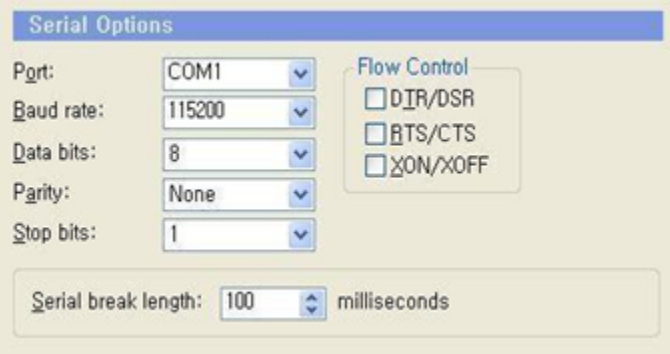

Figure 5. Serial Options

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6. After boot up, the board provides RTSP links for streaming on the connected serial console (see Figure 6).

```
Initializing...
...done initializing
Initializing...
...done initializing
Play this stream using the URL:
        rtsp://10.124.21.60:8555/PSIA/Streaming/channels/0?videoCodecType=MJPEG

(We use port 8302 for optional RTSP-over-HTTP tunneling.)
Play this stream using the URL:
        rtsp://10.124.21.60:8554/PSIA/Streaming/channels/1?videoCodecType=MPEG4

(We use port 8301 for optional RTSP-over-HTTP tunneling.)
Play this stream using the URL:
        rtsp://10.124.21.60:8553/PSIA/Streaming/channels/1?videoCodecType=MPEG4

(We use port 8300 for optional RTSP-over-HTTP tunneling.)
Play this stream using the URL:
        rtsp://10.124.21.60:8556/PSIA/Streaming/channels/2?videoCodecType=H.264

(We use port 8303 for optional RTSP-over-HTTP tunneling.)
Play this stream using the URL:
        rtsp://10.124.21.60:8557/PSIA/Streaming/channels/2?videoCodecType=H.264
```

Figure 6. RTSP Links

The IP address of the board is included in the RTSP link. For example, if one of the RTSP links is rtsp://10.124.21.60:8557/PSIA/Streaming/channels/2?videoCodecType=H.264, then the IP address of the board is 10.124.21.60.

4.3 Streaming Demo on Web Browser

Use the following instructions to begin streaming demos on a web browser.

1. Type the IP address of the device on Windows Internet Explorer® as http://<IP address>/ and press the *Enter* key (see Figure 7).

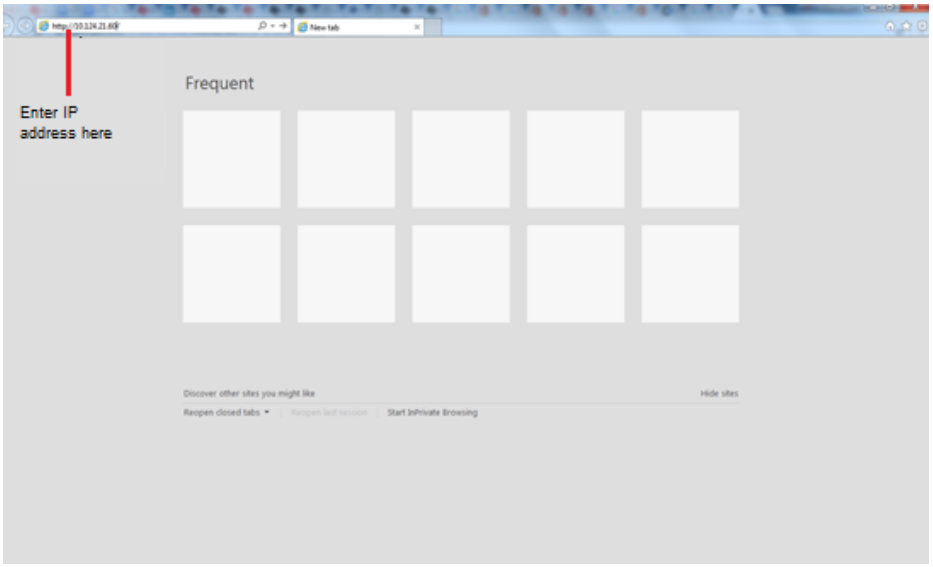

Figure 7. IP Address

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2. The Security Warning dialog box may appear if ActiveX® is not installed (see Figure 8).

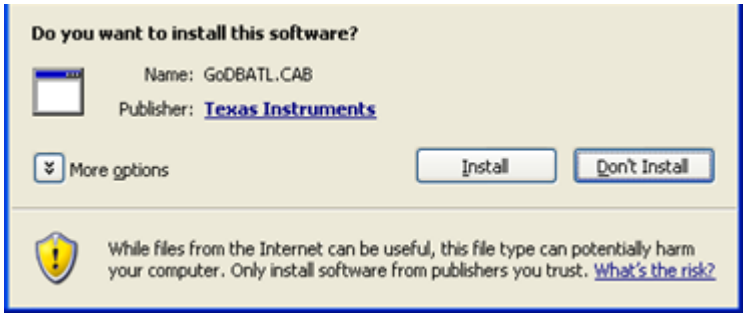

Figure 8. Security Warning Dialogue Box

3. Click Install to install the ActiveX program (if the prompt appears).
   After step 3, Internet Explorer will be redirected to a login page (see Figure 9).
4. Enter a default username (admin) and password (9999), then click OK.

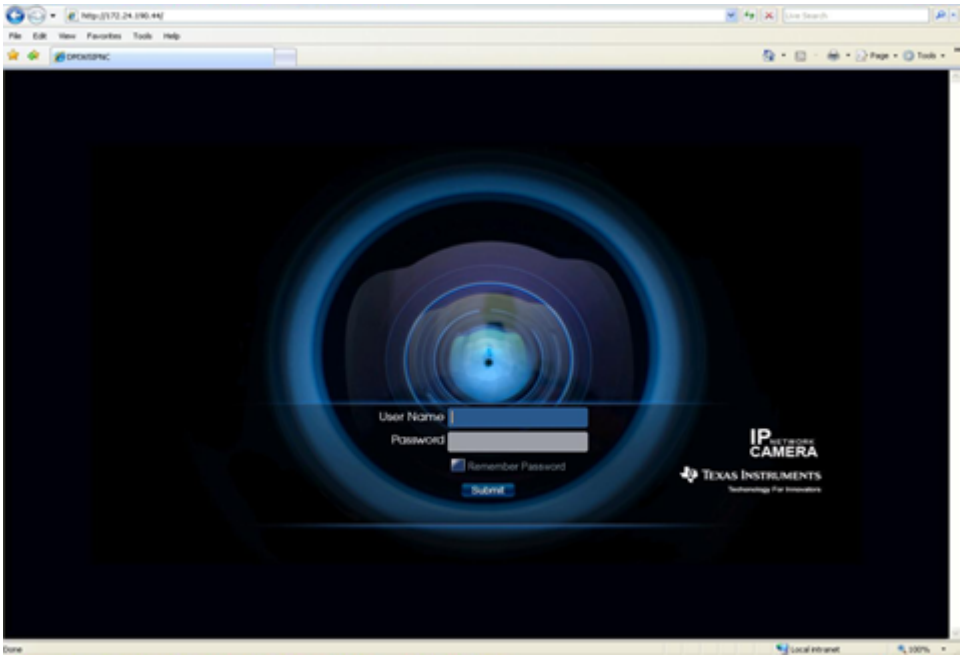

Figure 9. Web UI Login Page

A live user interface page should appear after logging in.

5 References

Texas Instruments, *IPNC RDK*, 2017

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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