FTDI Chip

VI800A-PoE Datasheet
Plug in accessory for VM800P Embedded Video Engine Plus module

1   Introduction

The VI800A-PoE is a plug in accessory for the VM800P Plus module, which is used to develop and demonstrate the functionality of the FT800 Embedded Video Engine, EVE.

This module behaves as a SPI to Ethernet bridge on the VM800P Plus module with the additional option of providing a 5V, 1.8A power pin derived from the Ethernet port.

1.1   Features

- Connects to the VM800P Plus module using an SPI slave interface

- SPI slave interface is converted to an Ethernet interface compliant with IEEE 802.3 10BASE-T and 802.3u 100BASE-TX

- Power over Ethernet (PoE) supplies 5V DC at 1.8A. May be used to power VM800P module. Conforms to IEEE 802.3af

- VI800A-PoE module is powered from the VM800P module (3V3 supply)

- 6 LEDs to indicate Ethernet status. (2 integrated in the RJ45 connector)

- RJ45 connector

2 Ordering Information

Part No.	Description
VI800A-PoE	VI800A Power over Ethernet module, plug in accessory for the VM800P Plus module

Table 2-1 – Ordering information

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3 Hardware Description

Please refer to section **3.2.2** for connector settings.

3.1 VI800A Power over Ethernet module

Figure 3-1 – VI800A-PoE module

The VI800A-PoE module is designed to connect directly with the VM800P Plus module.

The main functions of the VI800A-PoE module are as follows:

- Plug in accessory board for the VM800P Plus module.
- Interface to the VM800P Plus board as a SPI slave device.
- Connects with an external Ethernet interface.
- Contains 6 LEDs (2 integrated in RJ45 connector).
- Powered by the VM800P Plus board
- 5V @1.8A power available from Power over Ethernet (PoE)

3.2 Physical Descriptions

3.2.1 Dimensions

The VI800A-PoE module dimension is illustrated in Figure 3-2 and Figure 3-3.
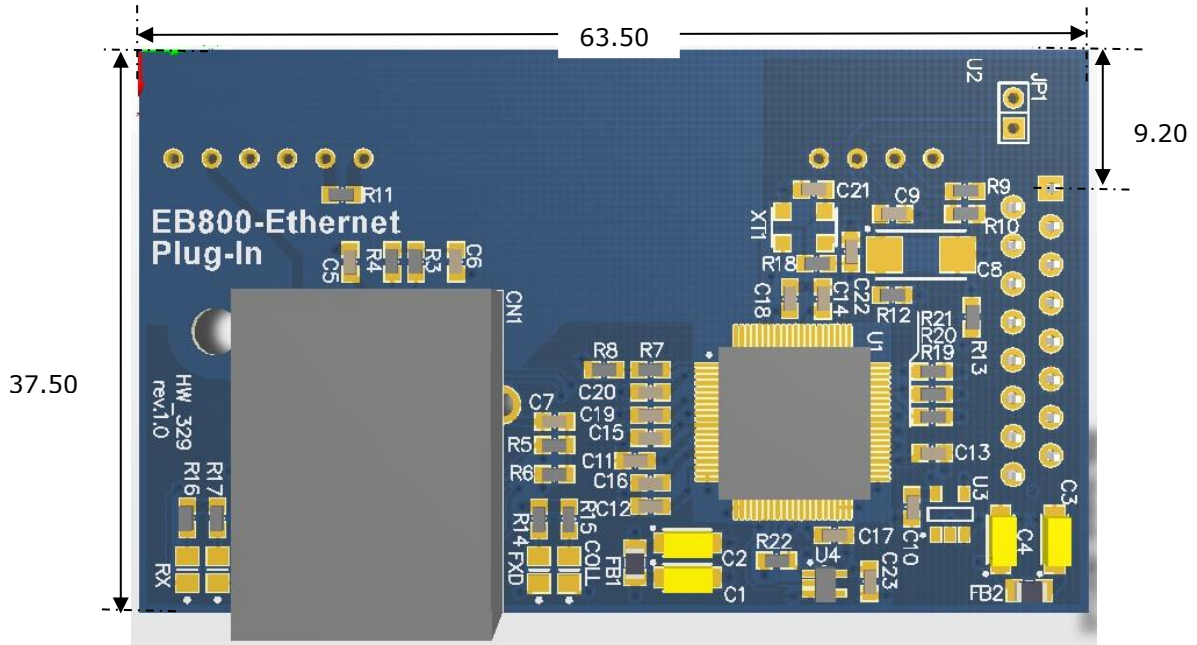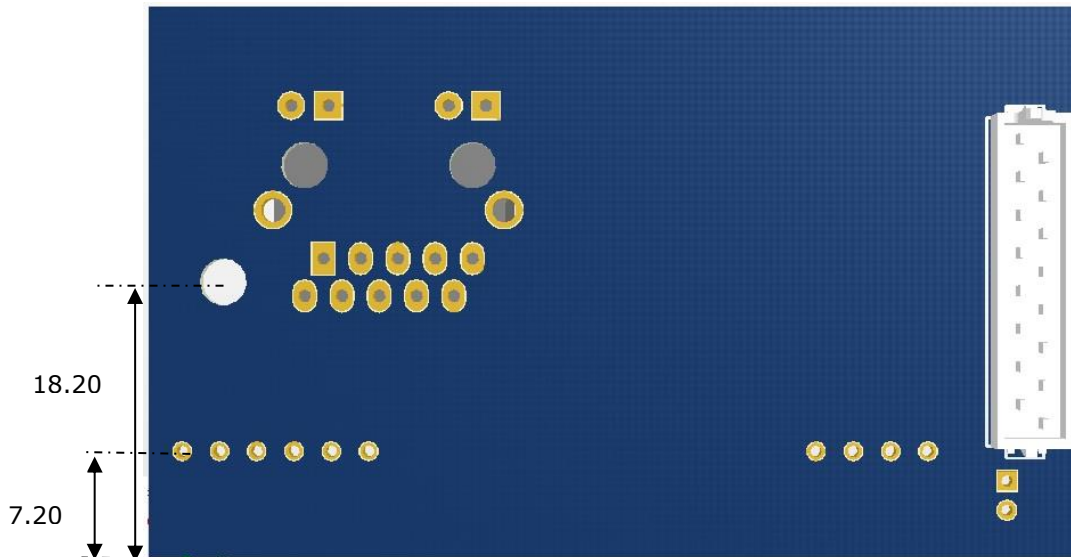

Figure 3-2 – VI800A-PoE module Top view

Figure 3-3 – VI800A-PoE module Bottom view

Figure 3-4 – VI800A-PoE module Side view

All dimensions are in mm

3.2.2 VI800A Power over Ethernet Connectors

Connectors and jumpers are described in the following sections.

- **CN1 - RJ45**

    This is a standard Ethernet connector with integrated LEDs and output for PoE.

Pin No.	Name	Type	Description
1	TX+	O	Ethernet data TX+ output
2	TX-	O	Ethernet data TX- output
3	RX+	I	Ethernet data RX+ input
4	POWER	PWR	Power (36-57V)
5	POWER	PWR	Power (36-57V)
6	RX-	I	Ethernet data RX- input
7	GND	GND	Ground
8	GND	GND	Ground

Table 3-1 – CN1 Pinout

- **CN2- Plug in Interface**

    This is the interface where the control and data signals from the VM800P boards are routed. There are also power and ground pins on this interface. This interface is used to connect the VI800A-PoE board to the VM800P Plus board.

    Note:

    This connector should be connected to J6 of the VM800P Plus board.

Pin No.	Name	Type	Description
1	SCK	I	SPI Clock input
2	MOSI	I	SPI Master Out Slave in
3	MISO	O	SPI Master In Slave out

Pin No.	Name	Type	Description
4	SS	I	SPI Chip select, active low
5	INT0	O	Interrupt output, active low
6	IO6	I	Daughter reset input, active low
7	AD4	IO	Address/Data Line 4
8	AD5	IO	Address/Data Line 5
9	3V3	P	3.3V power supply
10	5V	P	5V power supply
11	GND	P	Ground
12	RST#	I	Reset, active low
13	AD1	IO	Address/Data Line 1
14	NC	NA	Not Connected
15	ETH_INT#	O	Interrupt out, active low
16	AD2	IO	Address/Data Line 2

Table 3-2 – CN2 Pinout

- **JP1- Power from PoE**

  Jumper connection fitted when power source is from PoE.

3.2.3 VI800A Power over Ethernet Components

- **U1 – W5100**

  This converts the SPI signals from the VM800P Plus board to Ethernet signals. The interface is IEEE 802.3 10BASE-T and 802.3u 100BASE-TX compliant.

- **U2 – AG9705-2BR**

  Power over Ethernet PWR module. This module takes an input from the Ethernet port and outputs 5V @ 1.8A and conforms to IEEE 802.3af

- **CN1 – LPJ0514GENL**

  The RJ45 Ethernet connector to connect the Ethernet cable with 2 integrated indicator LEDs.

  The green LED indicates if a link is established or not. If illuminated the link is good.

  The yellow LED indicates the link speed. Illuminated is 100Base-TX and unlit is 10Base-T

- **LED1 –LED4**

  Indicates the status of the Ethernet transmission.

  LED1: This is the FDX LED. It is yellow in colour.

  LED2: This is the collision LED. It is yellow in colour

  LED3: This is the RX LED. It is green in colour

  LED4:This is the TX LED. It is green in colour
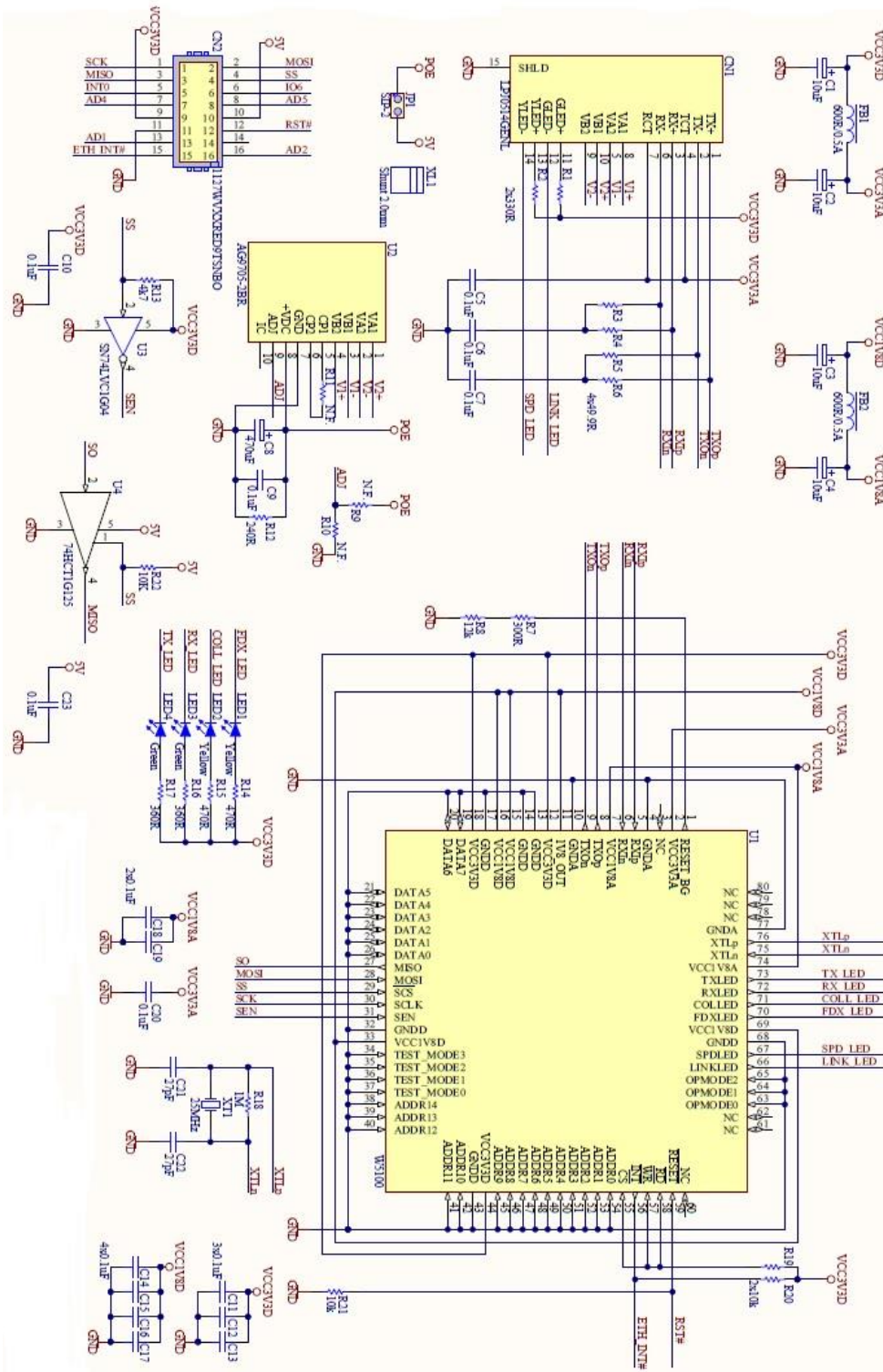
4 Board Schematics

Figure 4-1 – VI800A-PoE Schematics

5 Hardware Setup Guide

5.1 Power Configuration

The board could be powered from PoE or the VM800P Plus board from the setting of JP1. The CN2 connector on the VI800 PoE board should be connected to the J6 connector of the VM800P Plus board as shown in the Figure 5-1.

Figure 5-1 – VI800A-PoE module connected to VM800P Plus module

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Distributor and Sales Representatives

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Appendix A – References

Document References

VM800P datasheet: VM800P Plus board

FT800 datasheet: FT800_Embedded_Video_Engine

FT800 software programming guide: FT800_Programmer_Guide

FT800 sample application notes:

AN_246_VM800CB_SampleAPP_Arduino_Introduction

http://www.ftdichip.com/Support/Documents/AppNotes/AN_275_FT800_Example_with_Arduino.pdf

AN_332 VI800A_POE_SampleApp

Appendix B - List of Figures and Tables

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Appendix C – Revision History

Document Title:	VI800A_PoE Datasheet
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Product Page:	http://brtchip.com/product
Document Feedback:	Send Feedback

Revision	Changes	Date
Version 1.0	Initial Release	2014-10-14
Version 1.1	Updated Release	2014-10-20
Version 1.2	Dual branding to reflect the migration of the product to the Bridgetek name – logo changed, copyright changed, contact information changed	2016-09-15

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