FTDI Chip

VI800A-ETH Datasheet

Plug in accessory for VM800P Embedded Video Engine Plus module

1 Introduction

The VI800A-ETH 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 an SPI to Ethernet bridge on the VM800P Plus module.

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
- 6 LEDs to indicate Ethernet status. (2 integrated in the RJ45 connector)
- RJ45 connector
- Powered from the VM800P module

2 Ordering Information

Part No.	Description
VI800A-ETH	VI800A 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 **4.2** for connector settings.

3.1 VI800A-ETH module

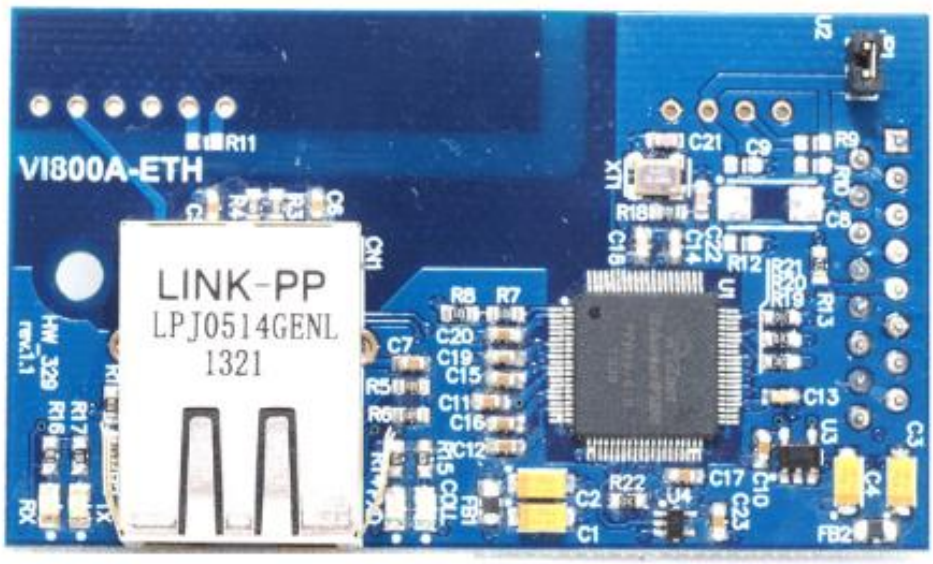

Figure 3-1 – VI800A Ethernet module

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

The main functions of the VI800A Ethernet 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.

4 Physical Descriptions

4.1 Dimensions

The VI800A-ETH module dimension is illustrated in Figure 3-2, Figure 3-3 and Figure 4-34.

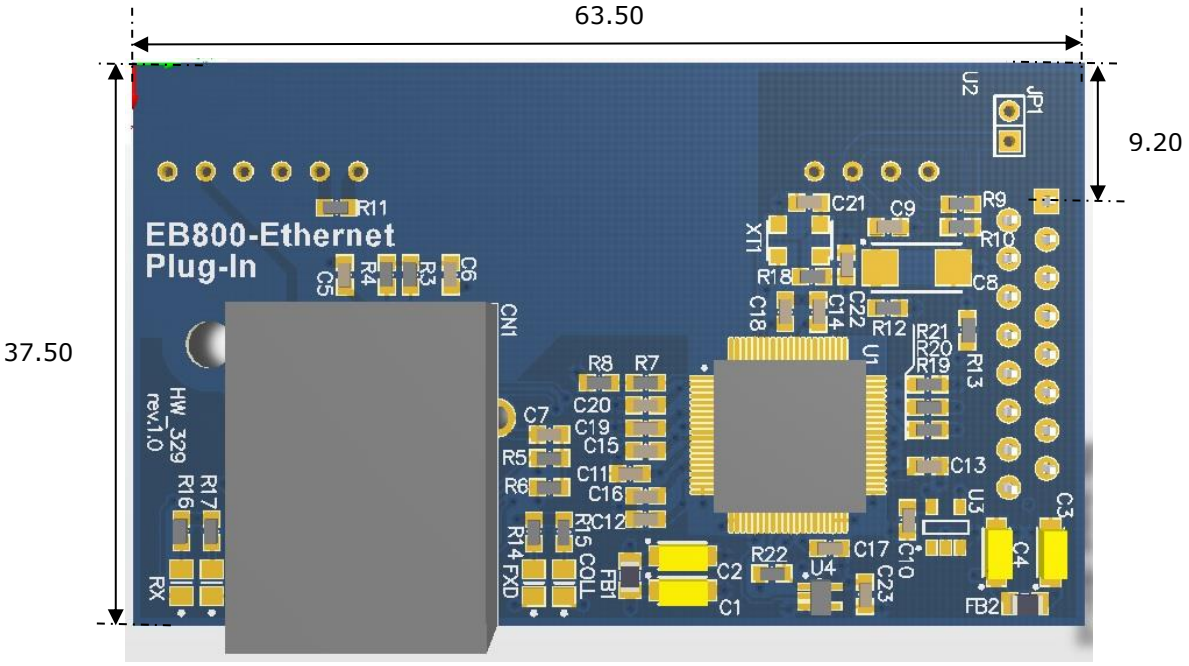

Figure 4-1 – VI800A-ETH module Top view

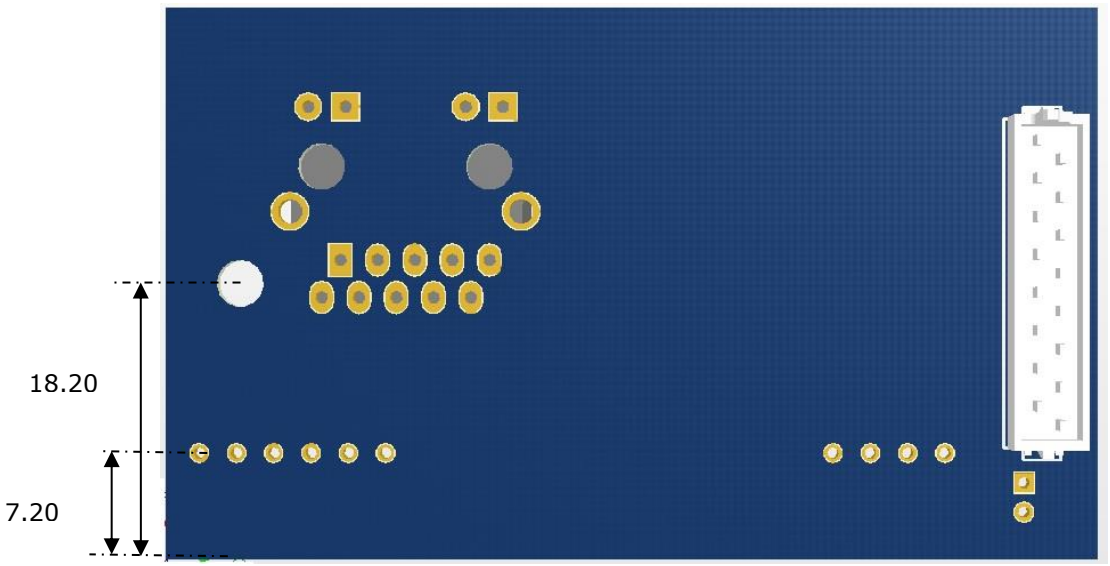

Figure 4-2 – VI800A-ETH module Bottom view

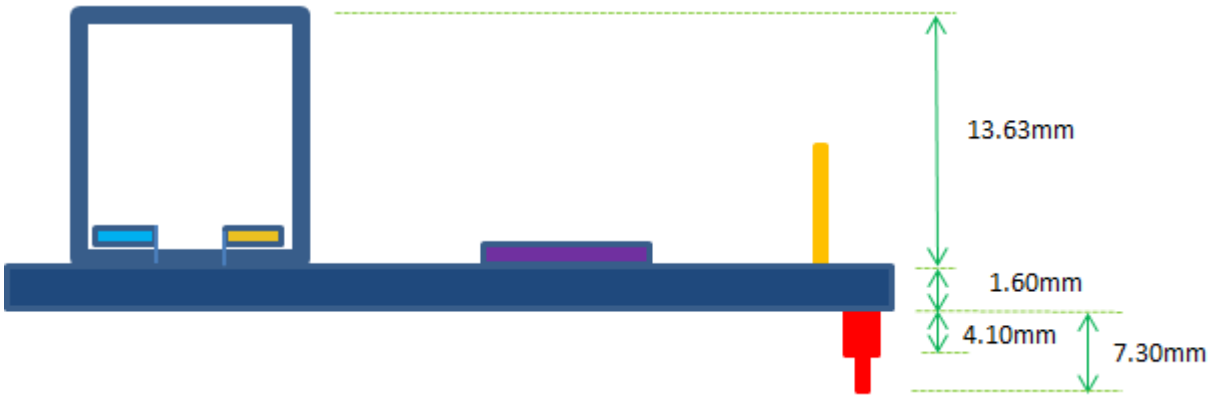

Figure 4-3 – VI800A-ETH module Side view

All dimensions are in mm

4.2 VI800A-ETH Connectors

Connectors and jumpers are described in the following sections.

- **CN1 - RJ45 (LPJ0514GENL)**

  This is a standard Ethernet connector with integrated LEDs.

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	NC	NC	NOT USED
5	NC	NC	NOT USED
6	RX-	I	Ethernet data RX- input
7	GND	GND	Ground
8	GND	GND	Ground

Table 4-1 – 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 Ethernet 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
4	SS	I	SPI Chip select, active low

Pin No.	Name	Type	Description
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 4-2 – CN2 Pinout

- **JP1- POE**

  Jumper connection not fitted by default

4.3 VI800A 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.

- **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.

5 Board Schematics

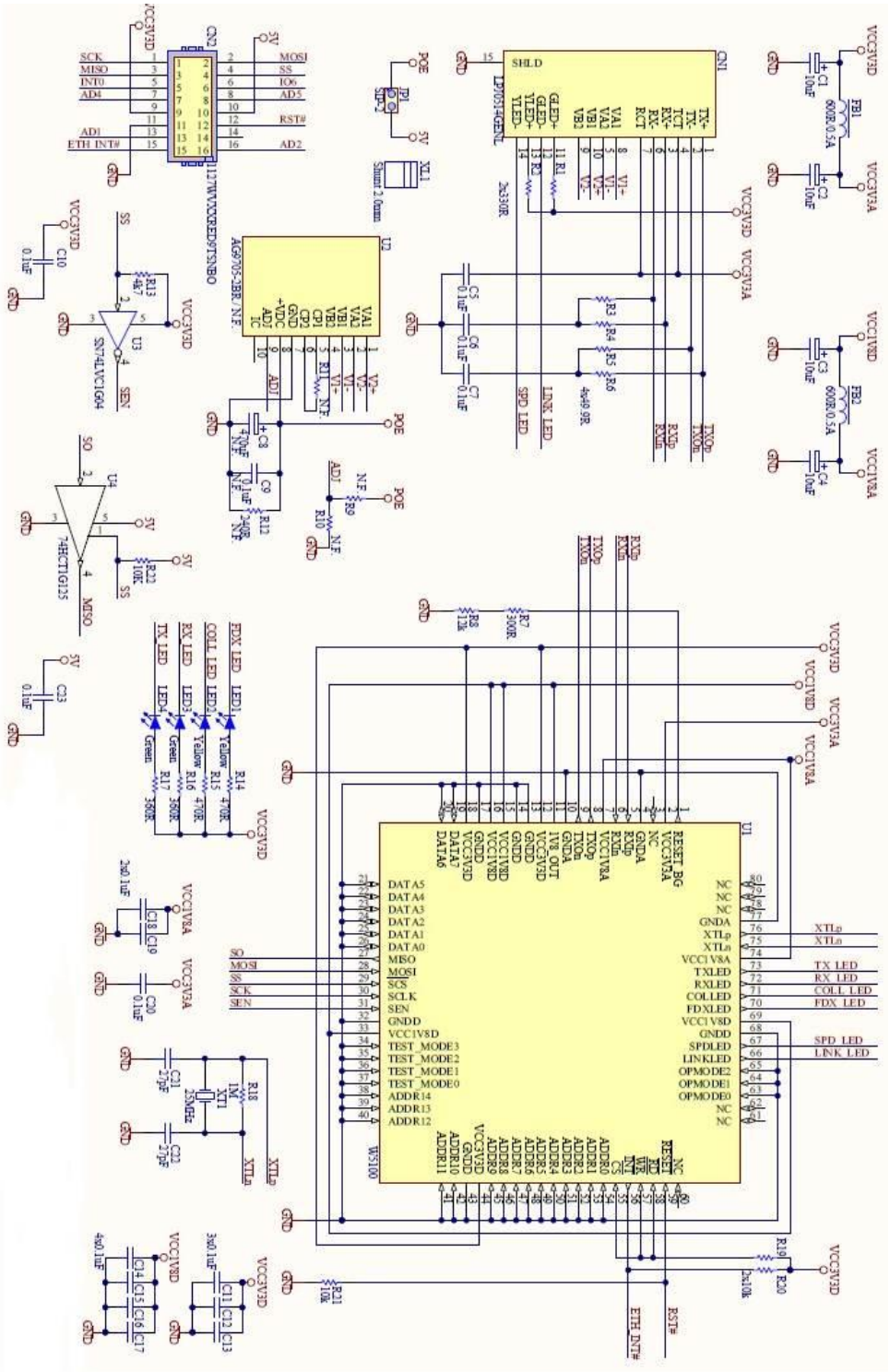

Figure 5-1 – VI800A Ethernet Schematics

6 Hardware Setup Guide

6.1 Power Configuration

The board is powered from the VM800P Plus board. The CN2 connector on the VI800A Ethernet board should be connected to the J6 connector of the VM800P Plus board as shown in Figure 5-1.

Figure 6-1 – VI800A Ethernet 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

AN_275_FT800_Example_with_Arduino.pdf

AN_318 Arduino Library for FT800 Series

Appendix B - List of Figures and Tables

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Appendix C – Revision History

Document Title: VI800A-ETH Datasheet
Document Reference No.: BRT_000010
Clearance No.: BRT#014
Product Page: http://brtchip.com/product
Document Feedback: Send Feedback

Revision	Changes	Date
Version 1.0	Initial Release	2014-10-14
Version 1.1	Added height dimensions	2014-10-21
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