

# **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**

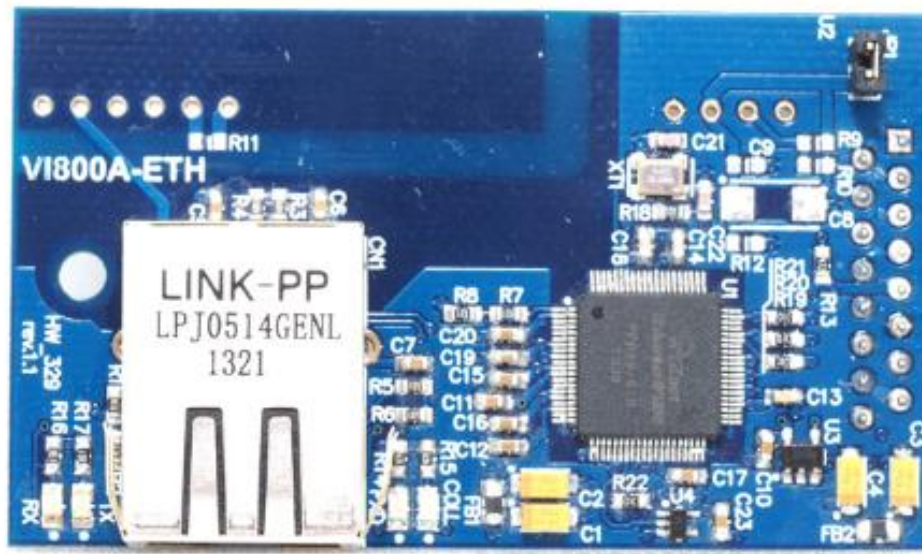
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## 3 Hardware Description

Please refer to section **3.2.2** 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.

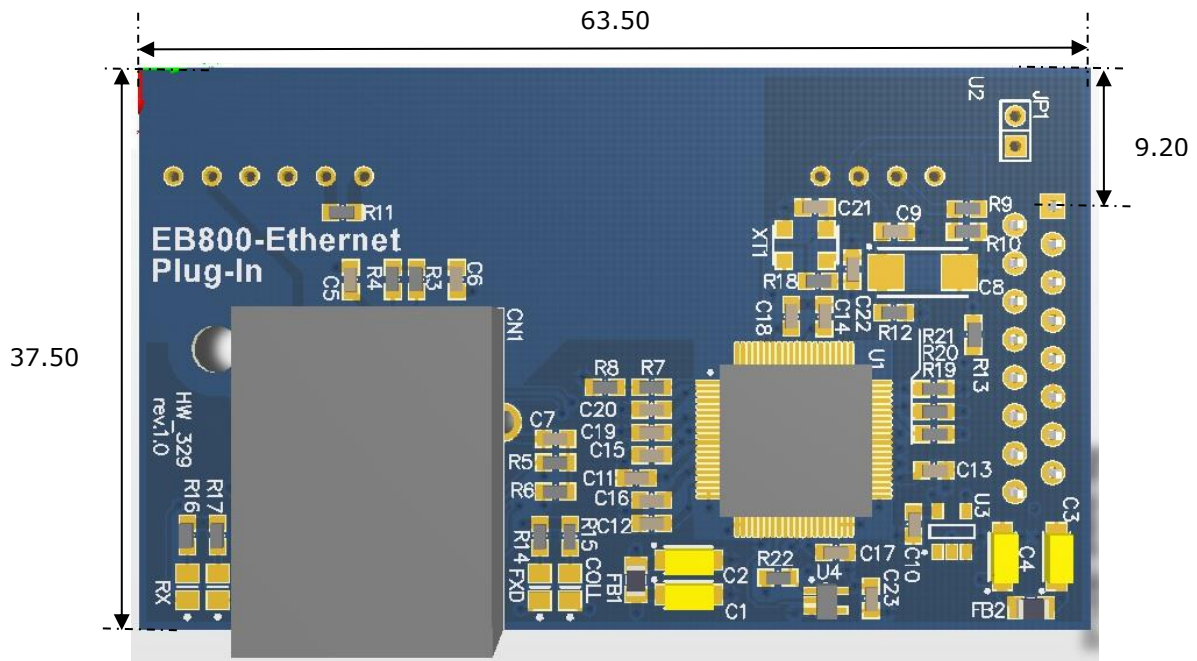
The main functions of the VI800A Ethernet module are as follows:

- 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.

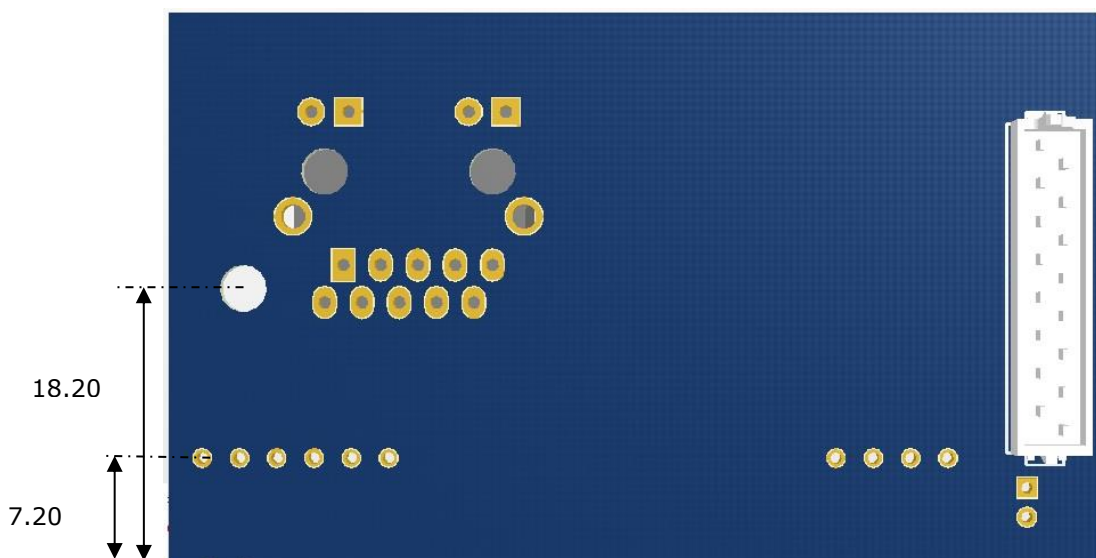
## 3.2 Physical Descriptions

### 3.2.1 Dimensions

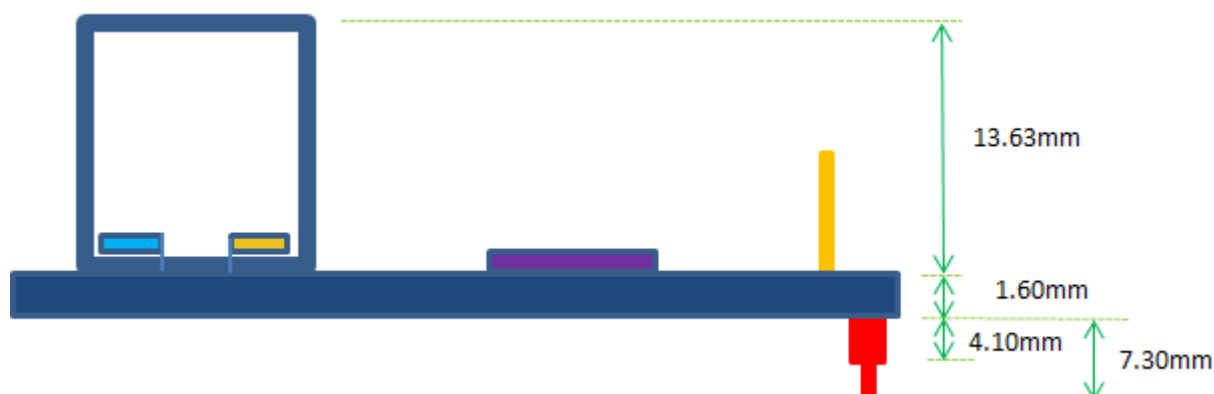
The VI800A-ETH module dimension is illustrated in [Figure 3-2](#), [Figure 3-3](#) and Figure 3-4.



**Figure 3-2 – VI800A-ETH module Top view**



**Figure 3-3 – VI800A-ETH module Bottom view**



**Figure 3-4 – VI800A-ETH module Side view**

All dimensions are in mm

### 3.2.2 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 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 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 |

| Pin No. | Name     | Type | Description                      |
|---------|----------|------|----------------------------------|
| 2       | MOSI     | I    | SPI Master Out Slave in          |
| 3       | MISO     | O    | SPI Master In Slave out          |
| 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- POE**

jumper connection not fitted by default

### 3.2.3 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.

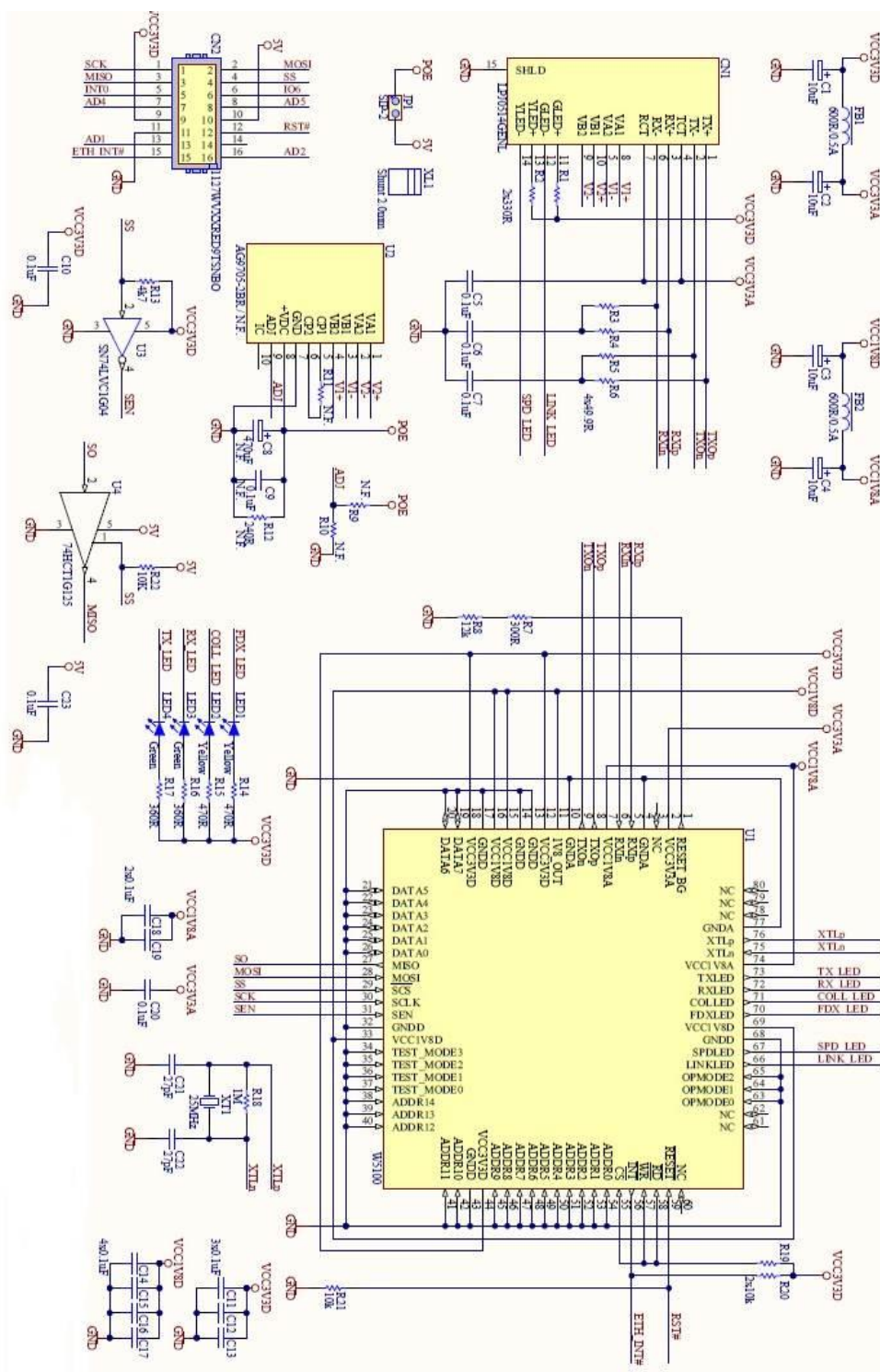
LED2: This is the collision LED. It is yellow in colour.

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

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



## 4 Board Schematics



**Figure 4-1 – VI800A Ethernet Schematics**



## 5 Hardware Setup Guide

### 5.1 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 5-1 – VI800A Ethernet module connected to VM800P Plus module**

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## Appendix A – 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](#)

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## Appendix C – Revision History

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Document Feedback: [Send Feedback](#)

|                    |                            |          |
|--------------------|----------------------------|----------|
| <b>Version 1.0</b> | Initial Datasheet released | 14/10/14 |
| <b>Version 1.1</b> | Added height dimensions    | 21/10/14 |