



# **USER'S MANUAL**

## **M15T – POKEYS MOTION MOTHERBOARD Rev. 1**

MARCH 2015.

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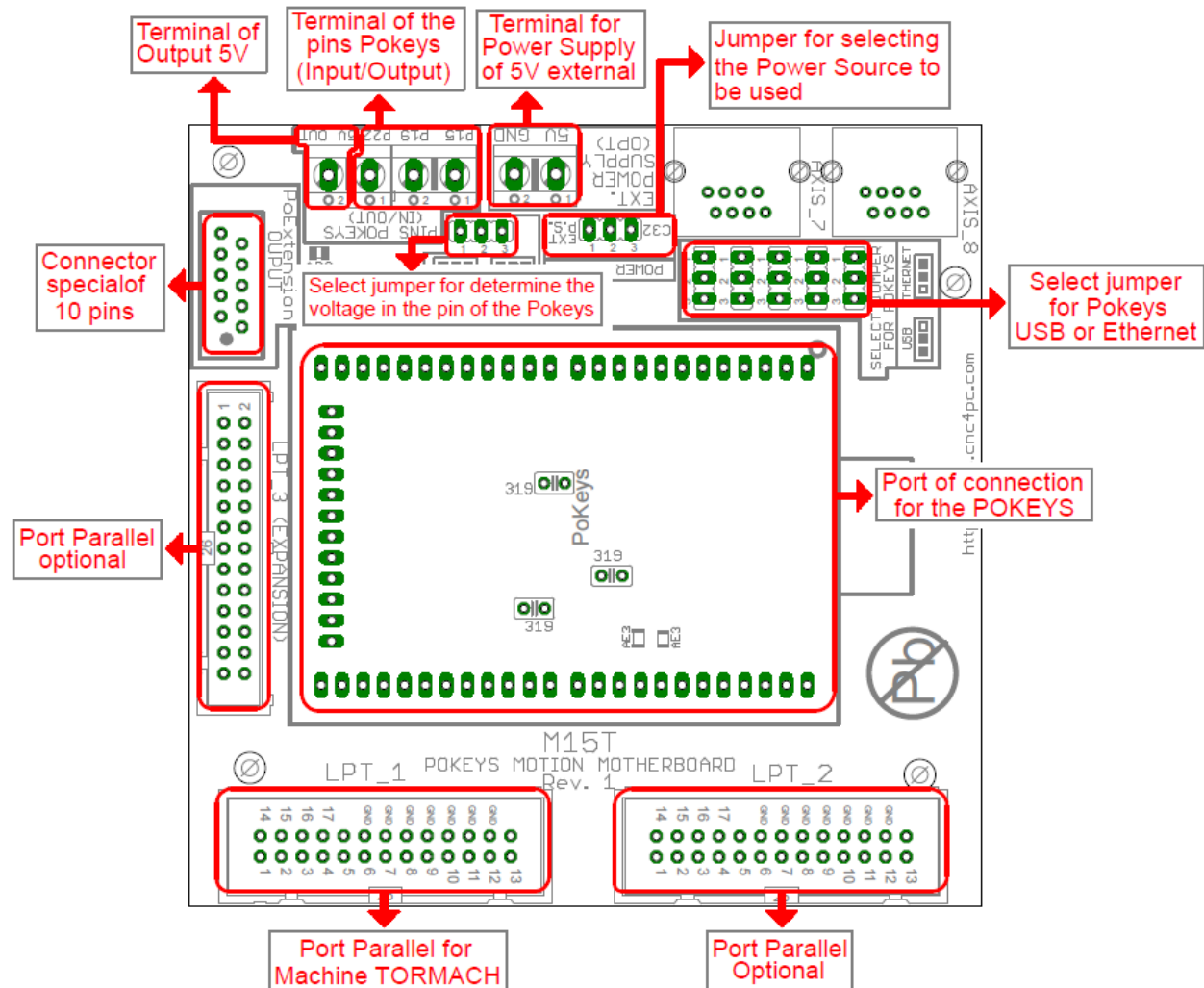
## 1.0 OVERVIEW

This card is a motherboard for the Pokeys56U, Pokeys56E and PoKeys57E Core Boards. It provides easy integration to breakout boards and with the new pinout of the pokeys, will control 4 axes, has different types of I/Os and features.

## 2.0 FEATURES

- Port parallel for connections for TORMACH Controller.
- Two port parallel optional
- Connector special of 10 pins (PoExtension OUTPUT)
- 3 terminals of input/output

### 3.0 BOARD DESCRIPTION



### 4.0 SPECIFICATIONS

#### 4.1 Power Requirements

5VDC@200 milliamps are required to power this board.



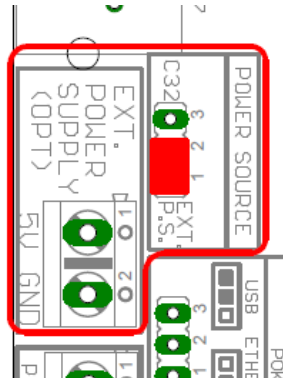
#### WARNING

Check the polarity and voltage of the external power source and connect the 5VDC and GND. Overvoltage or reverse-polarity power applied to these terminals can cause damage to the board, and/or the power source.

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## 5.0 JUMPER TO SELECT THE POWER SOURCE TO BE USED

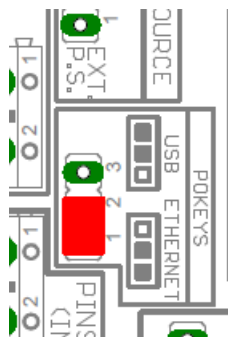
An external 5V power supply is required to power the M15T. In this case set the power source jumper in the position shown in the below image and connect the external 5V power supply to those terminals.



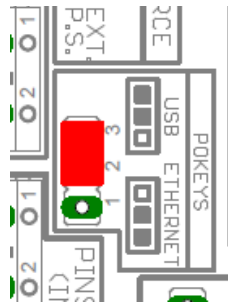
**Note:** if used in the port\_1 for connect to the machine TORMACH, you must connect the source external of 5V and use the jumper as sample in the image above.

## 6.0 SELECT JUMPER FOR THE VOLTAGE OF THE PIN OF THE POKEYS

When you go to use the POKEYS ETHERNET, must supply 5v in the pin of 5v of the POKEYS. Set jumper as show in the image.

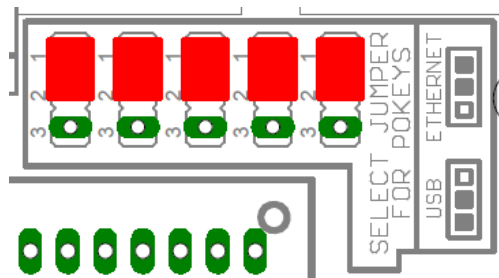


When you go to use the POKEYS USB, not must supply 5V in the pin of 5V of the POKEYS.  
Set jumper as show in the image.

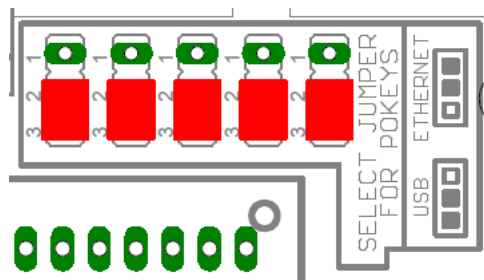


## 7.0 SELECT JUMPER FOR POKEYS

When connect the POKEYS ETHERNET, set jumper as show in the image.

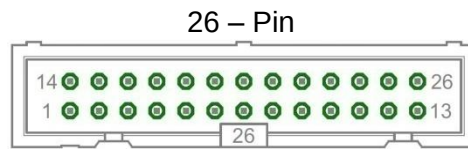


When connect the POKEYS USB, set jumper as show in the image.

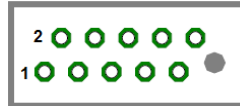


## 8.0 PINOUT

### 8.1 Pin Numbering



Connect special of 10 pins



### 8.2 Port 1

| PORT 1 (MOD)        |                 |                         |              |
|---------------------|-----------------|-------------------------|--------------|
| Equivalent P.P. Pin | Pokeys Function | Pokeys Pin              | Pin 74HCT595 |
| P1_1                | Step 5          | PoExtension (8,9 or 10) | 15 (2)       |
| P1_2                | Dir. 1          | PoExtension (8,9 or 10) | 1 (1)        |
| P1_3                | Step 1          | PoExtension (8,9 or 10) | 15 (1)       |
| P1_4                | Dir. 2          | PoExtension (8,9 or 10) | 3 (1)        |
| P1_5                | Step 2          | PoExtension (8,9 or 10) | 2 (1)        |
| P1_6                | Dir. 3          | PoExtension (8,9 or 10) | 5 (1)        |
| P1_7                | Step 3          | PoExtension (8,9 or 10) | 4 (1)        |
| P1_8                | Dir. 4          | PoExtension (8,9 or 10) | 7 (1)        |
| P1_9                | Step 4          | PoExtension (8,9 or 10) | 6 (1)        |
| P1_10               | Limit X         | 27                      | NOT USE      |
| P1_11               | Limit Y         | 28                      | NOT USE      |
| P1_12               | Limit Z         | 29                      | NOT USE      |
| P1_13               | Stop            | 52                      | NOT USE      |
| P1_14               | Step 6/PWM      | 18                      | NOT USE      |
| P1_15               | Probe/Index     | 30                      | NOT USE      |
| P1_16               | Dir. 5          | PoExtension (8,9 or 10) | 1 (2)        |
| P1_17               | SCHP            | 53                      | NOT USE      |
| P1_18 - 25          | GND             | GND                     | GND          |

|                         |                   |
|-------------------------|-------------------|
| PoExtension (8,9 or 10) | 1 (1)             |
|                         | 1 = CHIP PIN      |
|                         | (1) = CHIP NUMBER |

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### 8.3 Port 2

| PORT 2 (MOD)        |                           |            |
|---------------------|---------------------------|------------|
| Equivalent P.P. Pin | Pokeys Function           | Pokeys Pin |
| P2_1                | Output                    | 3          |
| P2_2                | MPG1-A                    | 1          |
| P2_3                | MPG1-B                    | 2          |
| P2_4                | X Axis select             | 4          |
| P2_5                | Y Axis select             | 7          |
| P2_6                | Z Axis select             | 8          |
| P2_7                | 4 Axis select             | 5          |
| P2_8                | X 1 Select                | 10         |
| P2_9                | X10 Select                | 12         |
| P2_10               | X100 Select               | 13         |
| P2_11               | Input 2_11                | 14         |
| P2_12               | 5 Axis select/Input 2_12  | 24         |
| P2_13               | 6 Axis select/Input 2_13  | 6          |
| P2_14               | PWM Output/Input 2_14     | 21         |
| P2_15               | Pendant E-Stop/Input 2_15 | 31         |
| P2_16               | Input 2_16                | 16         |
| P2_17               | Output                    | 45         |
| P2_18 - 25          | GND                       | GND        |

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## 8.4 Port 3:

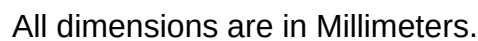
| PORT 3 (PORT PARALLEL) |                           |            |
|------------------------|---------------------------|------------|
| Equivalent P.P. Pin    | Pokeys Function           | Pokeys Pin |
| P3_1                   | limit +X (INPUT / OUTPUT) | 32         |
| P3_2                   | limit -X (INPUT / OUTPUT) | 48         |
| P3_3                   | Home X (INPUT / OUTPUT)   | 47         |
| P3_4                   | limit +Y (INPUT / OUTPUT) | 33         |
| P3_5                   | limit -Y (INPUT / OUTPUT) | 39         |
| P3_6                   | Home Y (INPUT / OUTPUT)   | 50         |
| P3_7                   | limit +Z (INPUT / OUTPUT) | 34         |
| P3_8                   | limit -Z (INPUT / OUTPUT) | 40         |
| P3_9                   | Home Z (INPUT / OUTPUT)   | 46         |
| P3_10                  | INPUT/OUTPUT (INT/OUT)    | 54         |
| P3_11                  | ANALOG INPUT (INT/OUT)    | 41         |
| P3_12                  | ANALOG INPUT (INT/OUT)    | 42         |
| P3_13                  | ANALOG INPUT (INT/OUT)    | 43         |
| P3_14                  | PWM (INT/OUT)             | 20         |
| P3_15                  | ANALOG INPUT (INT/OUT)    | 44         |
| P3_16                  | INPUT/OUTPUT (INT/OUT)    | 55         |
| P3_17                  | INPUT/OUTPUT (INT/OUT)    | 49         |
| P3_18 - 25             | GND                       | GND        |

## 8.5 PORT 4

Connect special of 10 pins (PoExtension)

| PORT 4 (PoExtension OUTPUT) |                 |                |                |
|-----------------------------|-----------------|----------------|----------------|
| Equivalent P.P. Pin         | Pokeys Function | Pokeys Pin 56U | Pokeys Pin 57E |
| P4_1                        | 5V              | 5V             | 5V             |
| P4_2                        | GND             | GND            | GND            |
| P4_3                        | PoExtension 3   | 17             | 17             |
| P4_4                        | PoExtension 4   | 38             | 38             |
| P4_5                        | PoExtension 5   | 37             | 37             |
| P4_6                        | PoExtension 6   | 36             | 36             |
| P4_7                        | PoExtension 7   | 35             | 35             |
| P4_8                        | PoExtension 8   | 23             | 9              |
| P4_9                        | PoExtension 9   | 25             | 11             |
| P4_10                       | PoExtension 10  | 26             | 51             |

## DISCLAIMER



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