



# **Megawin**

# **MG84FL54B Evaluation**

# **Stick**

## **User Manual**



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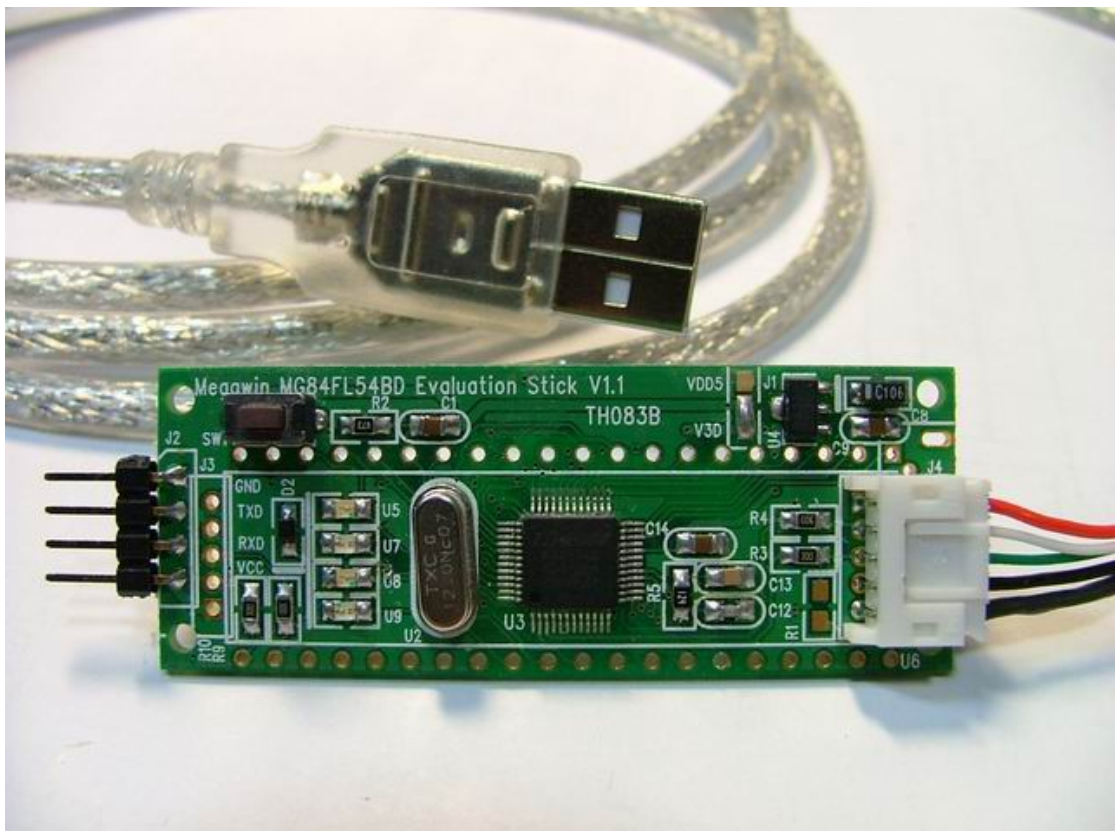


## 1. Introduction

“MG84FL54B Evaluation Stick” is a development tool that Megawin provides for the emulation of user’s application. For this stick, expansion of signal connection and updating of MCU firmware in MG84FL54B has become convenient and easy. Megawin provides complete software environment for this Evaluation Stick so that the users can develop their system application with little effort.

This user manual will introduce the function of “MG84FL54B Evaluation Stick”. It will describe its usage, programming and operation through Megawin Easy USB solution. This solution will enable the user to easily develop his application even if he does not have enough knowledge on USB.

The picture below shows the actual prototype. It includes a USB cable and MG84FL54BD Evaluation Stick that will be connected by a socket. The stick provides the data communication, system development, firmware upgrade through USB host without additional peripheral.

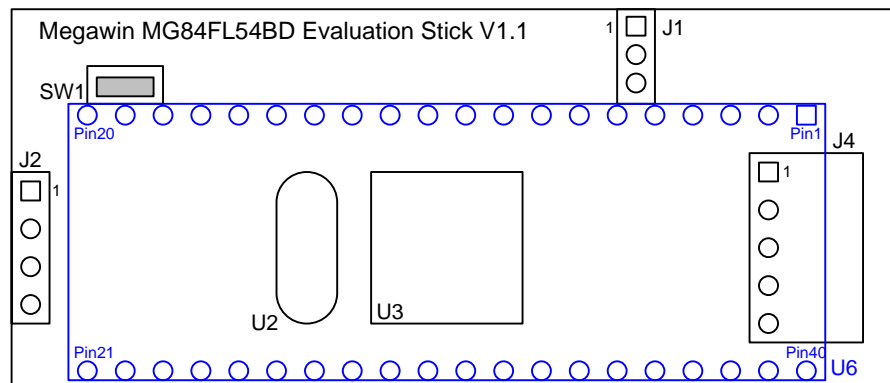




## 2. Functional Block

### 2.1. Functional Block Diagram

The following diagram shows the functional block on MG84FL54B Evaluation Stick.



### 2.2. Functional Block Description

- J1, Pin1: 5V power supply.  
Pin2: I/O interface power level selection  
Pin3: 3.3V power supply
- J2, Pin1: GND  
Pin2: TXD, UART transmit data from MCU P3.1  
Pin3: RXD, UART receive data to MCU P3.0  
Pin4: VDD\_IO
- J4: Pin1: VBUS, on USB.  
Pin2: DM, on USB.  
Pin3: DP, on USB  
Pin4: GND, on USB  
Pin5: Ground Shielding, on USB
- SW1: DFU button
- U2: 12MHz Crystal (MG84FL54B can operate on other frequency for the MCU. If user has this requirement, please connect Megawin technical support team)
- U3: MG84FL54BD
- U6: Pseudo device to expand MG84FL54BD's signal to standard 40-pin PDIP outline. The Pin description is as following:



Pin No.	Pin Name	Type	Description
1	P1.0	I/O	General purpose digital I/O & Timer 2 clock output
2	P1.1	I/O	General purpose digital I/O
3	P1.2	I/O	General purpose digital I/O
4	P1.3	I/O	General purpose digital I/O
5	P1.4	I/O	General purpose digital I/O
6	P1.5	I/O	General purpose digital I/O
7	P1.6	I/O	General purpose digital I/O
8	P1.7	I/O	General purpose digital I/O
9	RESET	I	Reset input , High Active
10	P2.0	I/O	General purpose digital I/O & TWSI_SCL
11	P2.1	I/O	General purpose digital I/O & TWSI_SDA
12	P2.2	I/O	General purpose digital I/O
13	P2.3	I/O	General purpose digital I/O
14	P2.4	I/O	General purpose digital I/O & SPI_SSI
15	P2.5	I/O	General purpose digital I/O & SPI_MOSI
16	P2.7	I/O	General purpose digital I/O & SPI_SCLK
17	P2.6	I/O	General purpose digital I/O & SPI_MISO
18	P4.0	I/O	General purpose digital I/O
19	XIN	I	Crystal Input
20	GND	GND	Power Ground
21	P3.0	I/O	General purpose digital I/O & Serial port RXD
22	P3.1	I/O	General purpose digital I/O & Serial port TXD
23	P3.2	I/O	General purpose digital I/O & External interrupt 0
24	P3.3	I/O	General purpose digital I/O & External interrupt 1
25	P3.4	I/O	General purpose digital I/O,Timer 0 external input & Timer 0 clock output
26	P3.5	I/O	General purpose digital I/O & Timer 1 external input
27	P3.6	I/O	General purpose digital I/O & External interrupt 2
28	P3.7	I/O	General purpose digital I/O & External interrupt 3
29	P4.3	I/O	General purpose digital I/O
30	P4.2	I/O	General purpose digital I/O

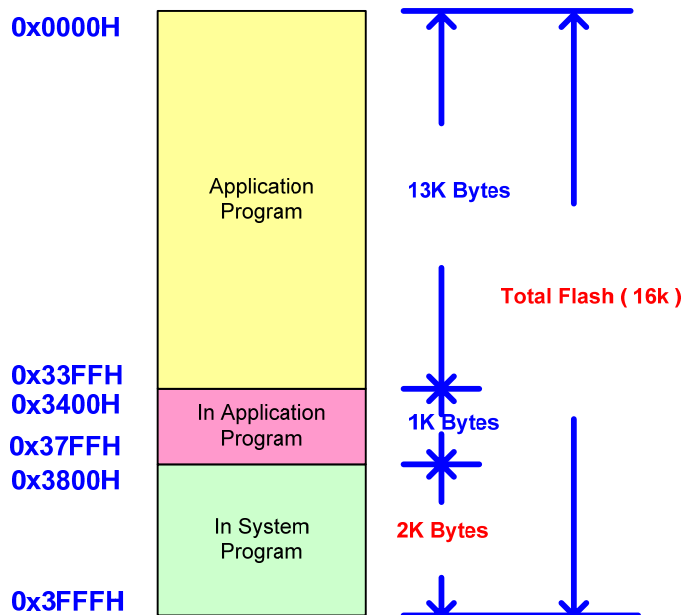


Pin No.	Pin Name	Type	Description
31	P4.1	I/O	General purpose digital I/O
32	P0.7	I/O	General purpose digital I/O & Keypad input 7
33	P0.6	I/O	General purpose digital I/O & Keypad input 6
34	P0.5	I/O	General purpose digital I/O & Keypad input 5
35	P0.4	I/O	General purpose digital I/O & Keypad input 4
36	P0.3	I/O	General purpose digital I/O & Keypad input 3
37	P0.2	I/O	General purpose digital I/O & Keypad input 2
38	P0.1	I/O	General purpose digital I/O & Keypad input 1
39	P0.0	I/O	General purpose digital I/O & Keypad input 0
40	V3D	3.3Vdc	3.3Vdc Output



### 3. MG84FL54BD Flash Memory Configuration on Evaluation Stick

#### 3.1. Configuration Block



#### 3.2. Memory Block Definition

- 3.2.1 The user application program (AP) is the main function program of the mcu as applied by the user. In “MG84FL54BD Evaluation Stick”, by default, AP is programmed with EasyPOD sample code for a data loop back test. The source of the sample code is stored in EasyPOD directory. User can refer the source code and modify it to fit his application. User can also upgrade the firmware by using the Megawin provided DFU software tool. Alternatively, he can change the AP code by itself, like EasyCOM. All of the upgrade firmware operations are easy through Megawin DFU software tool.
- 3.2.2 IAP represents in application program. User can treat this flash memory as an EEPROM. For the “MG84FL54BD Evaluation Stick”, by default, IAP memory size has been set at 1K bytes; the user however can program the settings to change the size through Megawin 8051 writer. (IAP access flow, can be obtained from Megawin 8051 application note)
- 3.2.3 ISP represents in system program. For the “MG84FL54BD Evaluation Stick”, by default, it is programmed using the DFU code that Megawin provides. User can push the “DFU Button” to force MG84FL54BD to enter DFU mode. This will let



the MCU run the ISP code that links the DFU software tool to upgrade the firmware in AP & IAP. Alternatively, MG84FL54BD can also enter DFU by MCU soft-reset. For more information on this, please contact Megawin technical support team.

- 3.2.4 Others. If user would like to re-layout the flash memory configuration, put “MG84FL54BD Evaluation Stick” onto Megawin 8051 writer (v3.80 or later) directly with PDIP socket connection. Then user could configure the flash memory based on his application requirement.

## **4. Signal Connectivity**

MG84FL54B Evaluation Stick provides 3 interfaces for communication connectivity.

These are listed as follows:

### **4.1. USB Signal Connectivity**

J4 is USB cable jack to provide USB signal connectivity. This package bundles a USB cable for user to plug into USB host.

### **4.2. UART Signal Connectivity**

J2 is a special one for UART application. It provides TXD/RXD for serial data communication. GND is the signal ground reference. VDD\_IO is the power supply by J1 I/O power selection that decides the TXD/RXD signal level.

### **4.3. GPIO Signal Connectivity**

U6 is a pseudo device that links the GPIOs of MG84FL54BD to standard 40-pin PDIP dimension. This connectivity can be put onto Megawin 8051 writer for mcu flash memory programming interface. It can also be used for user application connection. The GPIOs' signal level is decided by J1 I/O power selection.





## 5. Revision History

Revision	Description	Data
v0.90	Initial version	2008/01/12
v1.00	Release version	2008/01/30
v1.01	Modify description	2008/04/25