



M38517T-ADS

Temporary Target Board for M38507ARLSS and M38517RSS

User's Manual

Keep safety first in your circuit designs!

- Renesas Technology Corporation and Renesas Solutions Corporation put the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

Notes regarding these materials

- These materials are intended as a reference to assist our customers in the selection of the Renesas Technology product best suited to the customer's application; they do not convey any license under any intellectual property rights, or any other rights, belonging to Renesas Technology Corporation, Renesas Solutions Corporation or a third party.
- Renesas Technology Corporation and Renesas Solutions Corporation assume no responsibility for any damage, or infringement of any third-party's rights, originating in the use of any product data, diagrams, charts, programs, algorithms, or circuit application examples contained in these materials.
- All information contained in these materials, including product data, diagrams, charts, programs and algorithms represents information on products at the time of publication of these materials, and are subject to change by Renesas Technology Corporation and Renesas Solutions Corporation without notice due to product improvements or other reasons. It is therefore recommended that customers contact Renesas Technology Corporation, Renesas Solutions Corporation or an authorized Renesas Technology product distributor for the latest product information before purchasing a product listed herein. The information described here may contain technical inaccuracies or typographical errors. Renesas Technology Corporation and Renesas Solutions Corporation assume no responsibility for any damage, liability, or other loss arising from these inaccuracies or errors. Please also pay attention to information published by Renesas Technology Corporation and Renesas Solutions Corporation by various means, including the Renesas home page (<http://www.renesas.com>).
- When using any or all of the information contained in these materials, including product data, diagrams, charts, programs, and algorithms, please be sure to evaluate all information as a total system before making a final decision on the applicability of the information and products. Renesas Technology Corporation and Renesas Solutions Corporation assume no responsibility for any damage, liability or other loss resulting from the information contained herein.
- Renesas Technology semiconductors are not designed or manufactured for use in a device or system that is used under circumstances in which human life is potentially at stake. Please contact Renesas Technology Corporation, Renesas Solutions Corporation or an authorized Renesas Technology product distributor when considering the use of a product contained herein for any specific purposes, such as apparatus or systems for transportation, vehicular, medical, aerospace, nuclear, or undersea repeater use.
- The prior written approval of Renesas Technology Corporation and Renesas Solutions Corporation is necessary to reprint or reproduce in whole or in part these materials.
- If these products or technologies are subject to the Japanese export control restrictions, they must be exported under a license from the Japanese government and cannot be imported into a country other than the approved destination. Any diversion or reexport contrary to the export control laws and regulations of Japan and/or the country of destination is prohibited.
- Please contact Renesas Technology Corporation or Renesas Solutions Corporation for further details on these materials or the products contained therein.

Precautions to be taken when using this product

- This product is a development supporting unit for use in your program development and evaluation stages. In mass-producing your program you have finished developing, be sure to make a judgment on your own risk that it can be put to practical use by performing integration test, evaluation, or some experiment else.
- In no event shall Renesas Solutions Corporation be liable for any consequence arising from the use of this product.
- Renesas Solutions Corporation strives to renovate or provide a workaround for product malfunction at some charge or without charge. However, this does not necessarily mean that Renesas Solutions Corporation guarantees the renovation or the provision under any circumstances.
- This product has been developed by assuming its use for program development and evaluation in laboratories. Therefore, it does not fall under the application of Electrical Appliance and Material Safety Law and protection against electromagnetic interference when used in Japan.

For inquiries about the contents of this document or product, fill in the text file the installer of the emulator debugger generates in the following directory and email to your local distributor.

\\SUPPORT\Product-name\SUPPORT.TXT

Renesas Tools Homepage <http://www.renesas.com/en/tools>

Contents

1. Things to Check When Unpacking	4
2. Outline	4
3. Specifications	4
4. Setting Up	5
4.1 Mounting an Emulator MCU	5
4.2 Connecting the Emulation Pod	6
4.3 Setting the Switches	7
5. Oscillator Circuit	8
5.1 Oscillator Circuit Board	8
5.2 32.768kHz Oscillator Circuit	8
6. Reset Circuit	9
7. Pin Layout	10

1. Things to Check When Unpacking

The M38517T-ADS package consists of the following products. When unpacking your package, check to see that all of these components are included.

Table 1.1 Package components

	Content
Temporary target board	M38517T-ADS
User's manual	M38517T-ADS User's manual (English/Japanese)

* If you find any item missing or faulty, or any suggestion, contact your local distributor.

2. Outline



The M38517T-ADS is a temporary target board used to develop software with a PC4701 emulator system. It supplies to the emulator MCU the minimum required signals needed to operate the emulator MCU, including power supply voltage, clock signals and reset signals. Use it when the target system is not ready.

3. Specifications

Table 3.1 lists specifications of the M38517T-ADS.

Table 3.1 Specifications of the M38517T-ADS

Item	Content	
Applicable MCU	M38507ARLSS, M38517RSS	
Clock	4.0MHz oscillator mounted (oscillator circuit board OSC-2 used) 32.768 kHz (can be disconnected by SW1)	
Power supply voltage	2.7 V to 5.5 V (supplied separately*)	
RESET	<ul style="list-style-type: none">• Reset circuit mounted (power-on reset and reset switch)• Connects the reset output of an emulation pod	
External dimensions	Width	90 mm
	Depth	115 mm
Others	Universal part prepared	

* Power cannot be supplied from the emulation pod for PC4701 (e.g. M38000TL2-FPD). A separate power supply is needed.

4. Setting Up

This chapter describes how to set up the M38517T-ADS.

CAUTION

Note on Setting Up:

- Always shut OFF power before connecting this product. The power ON state could destroy internal circuits.

4.1 Mounting an Emulator MCU

Mount an emulator MCU on the M38517T-ADS. After checking the position of the No. 1 pin of the emulator MCU, mount the emulator MCU referencing Figure 4.1.

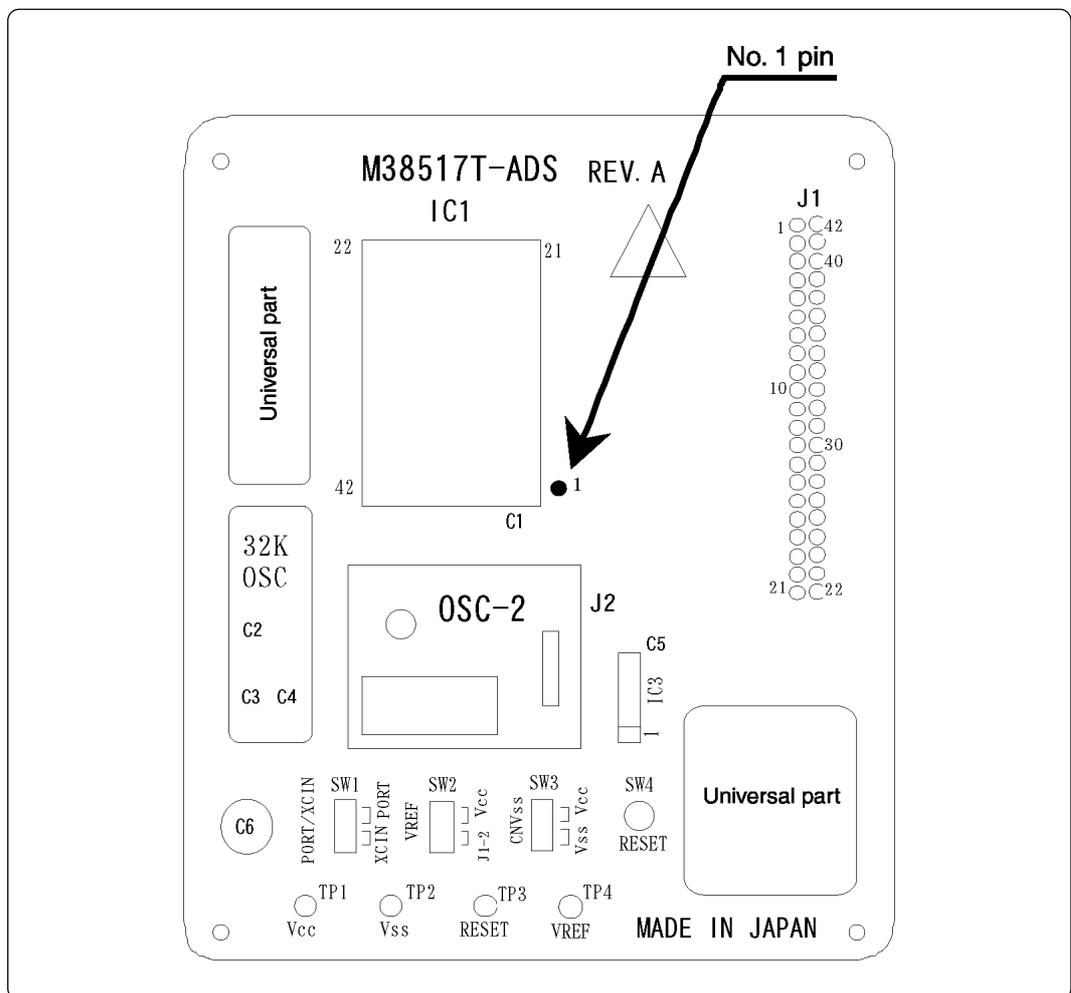


Figure 4.1 Position of No. 1 pin of an M38517T-ADS's emulator MCU

4.2 Connecting to the Emulation Pod

- (1) Insert the connector on the tip of the emulation pod probe to the socket on the emulator MCU.
- (2) Connect the cables of the M38000TL2-PSW2 as shown in Table 4.1 depending on the emulator MCU you use.

Do not connect the Vcc cable (yellow) to pin Vcc (TP1).

Table 4.1 Connector cables of the M38000TL2-PSW and applicable signals

Cable color	Signal	For M38507ARLSS	For M38517RSS
White	RESET	TP3	TP3
Black	Vss	TP2	TP2
Yellow	Vcc	TP1	No connection

- (3) Set the MCU type selection switch (SW1) of the M38000TL2-FPD as shown in Table 4.2.

Table 4.2 Settings of the SW1 of the M38000TL2-FPD

	M38507ARLSS	M38517RSS
M38000TL2-FPD SW1	RLSS/RLFS	RSS/RFS

- (4) Connect a power supply (not included) to pin Vcc (TP1) of the M38517T-ADS. And connect the GND output of the power supply to pin Vss (TP2). Use the power supply whose rising time is 10 ms or less.

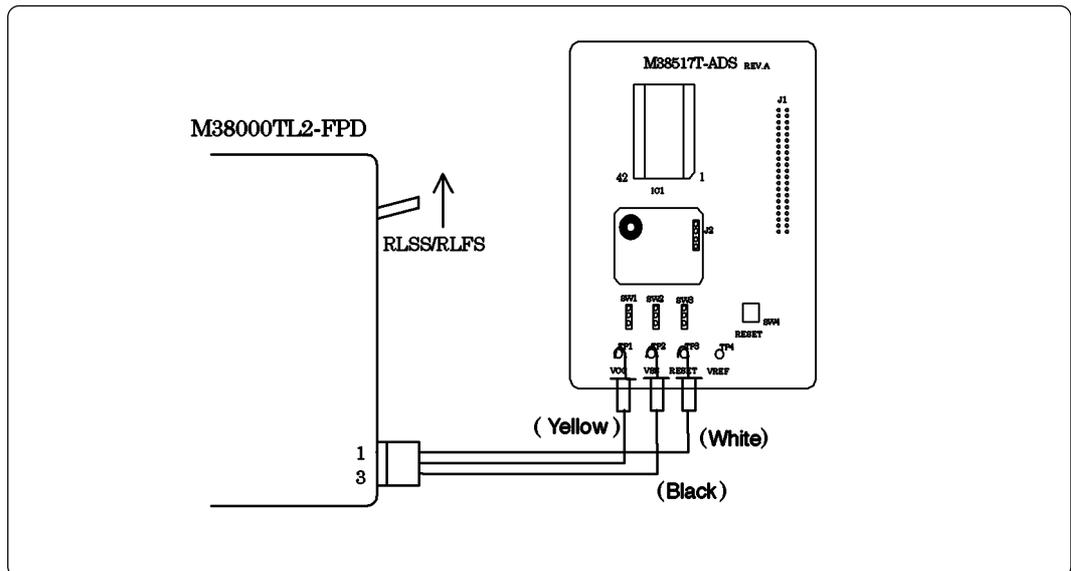


Figure 4.2 Connecting the M38507ARLSS

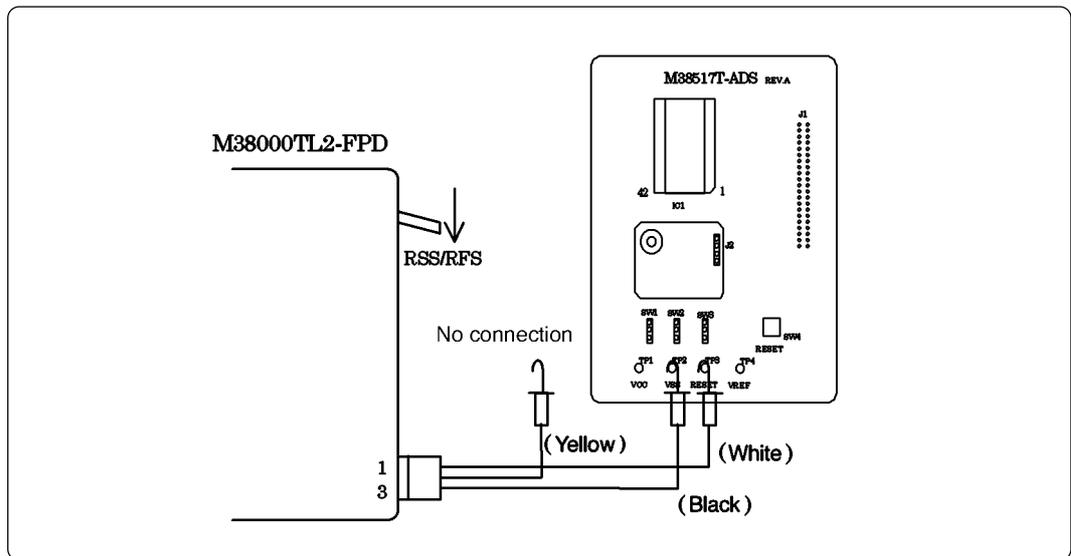


Figure 4.3 Connecting the M38517RSS

4.3 Setting the Switches

Set the switches SW1 to SW3 according to your applications. Table 4.3 describes the functions of the switches SW1 to SW3.

Table 4.3 Functions of the switches SW1, SW2 and SW3

No.	Name	Function	Factory-setting
SW1	PORT/XCIN	Allows you to choose whether to supply the sub-clock signals (32.768 kHz) to the MCU's XCIN pin (pin 16). To use pin P21/XCIN as an I/O port, choose the PORT side. To use the sub-clock signals, choose the XCIN side.	PORT
SW2	VREF	Allows you to choose whether to apply Vcc or some other source to the MCU's VREF pin (pin 2). In the case of the latter, choose the J1-2 side, and apply a voltage within a prescribed range to the J1-2.	Vcc
SW3	CNVss	Allows you to choose which to connect, Vcc or Vss, to the MCU's CNVss (pin 15).	Vss

5. Oscillator Circuit

5.1 Oscillator Circuit Board

The M38517T-ADS has a built-in oscillator circuit board on which a 4.0MHz oscillator is mounted.

Figure 5.1 shows an external view of the OSC-2 oscillator circuit board (bare board) and where connector pins are located. Figure 5.2 shows the circuitry of the OSC-2 oscillator circuit board (bare board). Use the number of oscillator circuits recommended by the oscillator manufacturer.

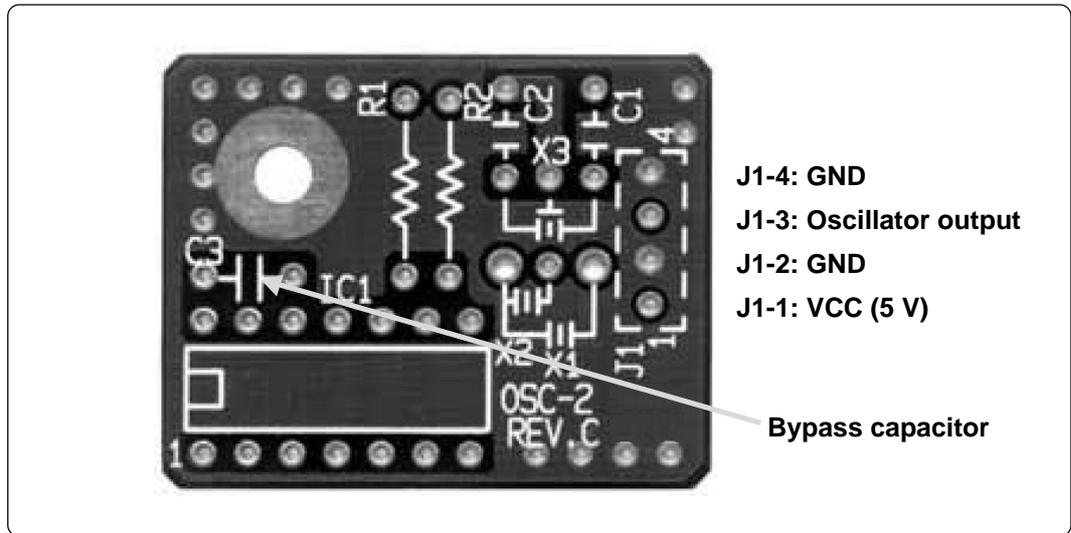


Figure 5.1 External view of the oscillator board (OSC-2) and connector pin assignment

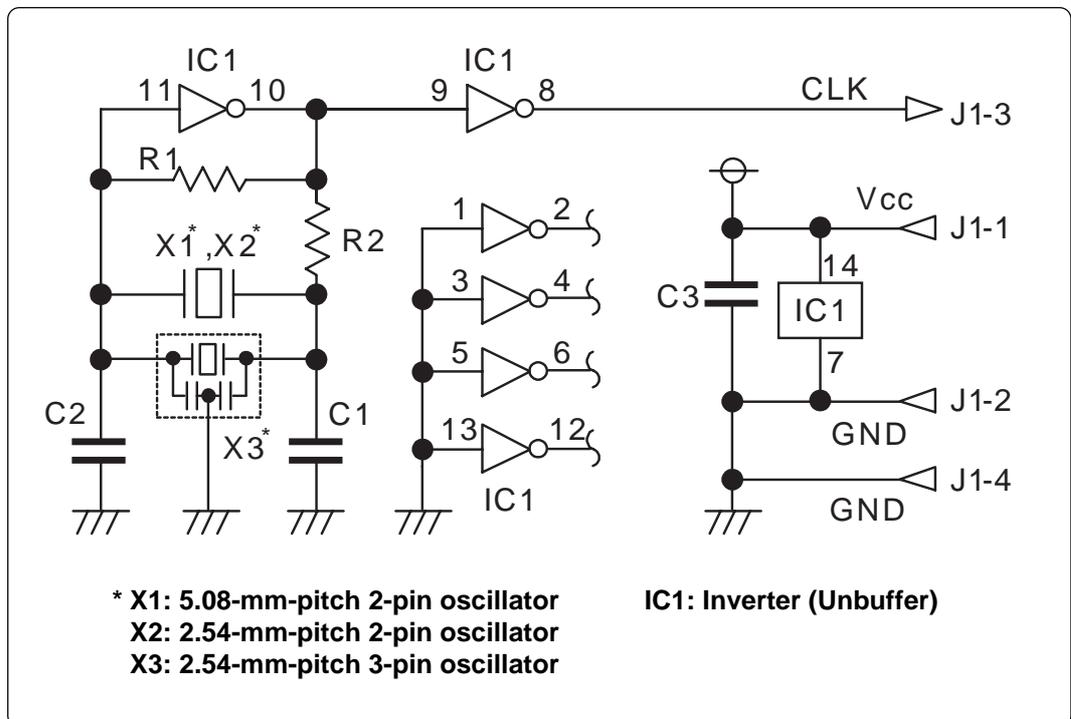


Figure 5.2 Circuit of the oscillator board (OSC-2)

5.2 32.768kHz Oscillator Circuit

The 32.768kHz oscillator circuit is prepared on the M38517T-ADS. When using the 32.768kHz oscillator circuit as a sub-clock, set the short-circuit connector of the SW1 to the XCIN side.

6. Reset Circuit

Figure 6.1 shows the reset circuit and its waveform. In this product, reset is cleared in about 100 ms from the instant V_{cc} passes about 2.1 V after having started from 0 V. When V_{cc} drops down to about 2.1 V, reset turns effective.

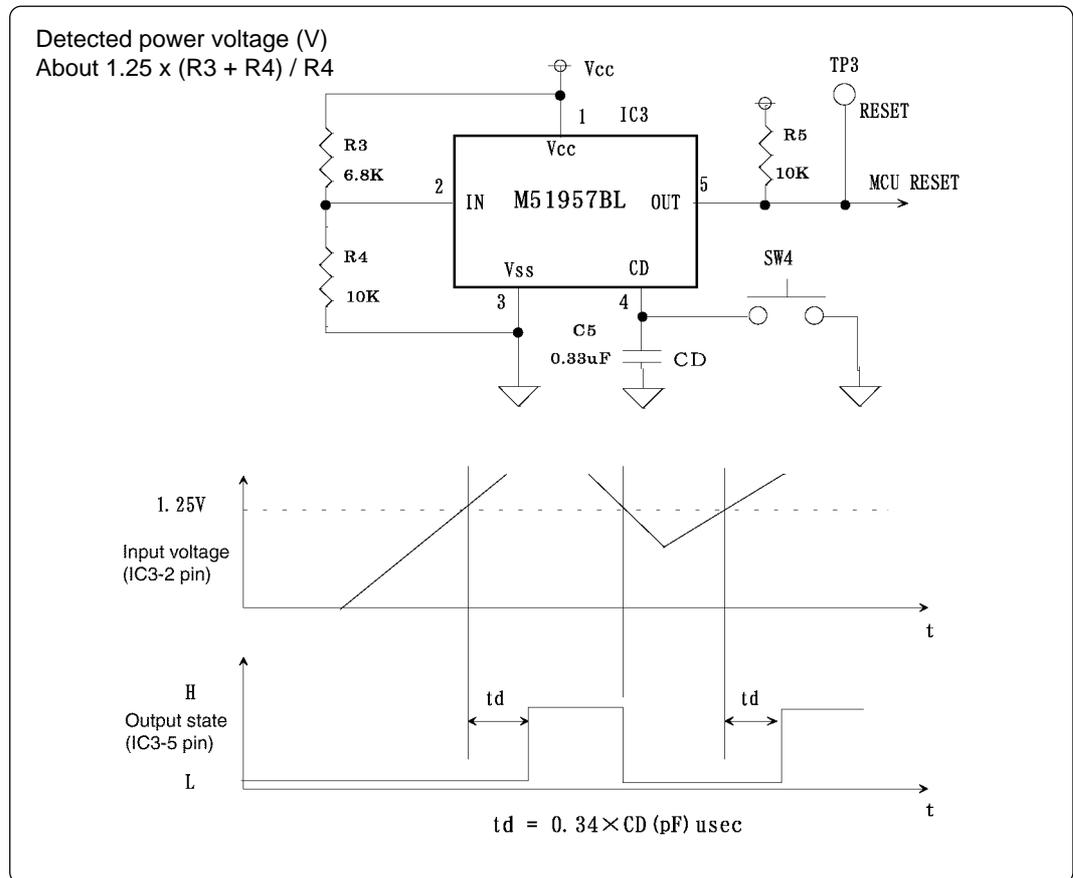


Figure 6.1 Reset circuit and its waveform

By using the switch SW4, the MCU can be reset manually.

Table 6.1 Function of SW4 (reset switch)

No.	Name	Function
SW4	RESET	This is the reset switch. Press down this switch to reset the MCU.

M38517T-ADS User's Manual

Rev.1.00
September 1, 2003
REJ10J0340-0100Z

COPYRIGHT ©2003 RENESAS TECHNOLOGY CORPORATION
AND RENESAS SOLUTIONS CORPORATION ALL RIGHTS RESERVED



RenesasTechnology Corp.

2-6-2, Ote-machi, Chiyoda-ku, Tokyo, 100-0004, Japan