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Important User Information

This document is intended to provide a good understanding of the installation process, the mechanical and the electric properties of the Anybus CompactCom Option Board for Freescale. For general information regarding the Anybus CompactCom 40, consult the Anybus CompactCom 40 design guides.

The reader of this document is expected to be familiar with hardware design, and communication systems in general. For more information, documentation etc., please visit the HMS web site, 'www.anybus.com'.

Liability

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Anybus ® is a registered trademark of HMS Industrial Networks AB. All other trademarks are the property of their respective holders.

Warning:	This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
ESD Note:	This product contains ESD (Electrostatic Discharge) sensitive parts that may be damaged if ESD control procedures are not followed. Static control precautions are required when handling the product. Failure to observe this may cause damage to the product.

Table of Contents

P. About This Document

For more information, documentation etc., please visit the HMS website, www.anybus.com.

P.1 Related Documents

Document	Author
Anybus CompactCom 40 Software Design Guide	HMS
Anybus CompactCom 40 Hardware Design Guide	HMS
Anybus CompactCom Host Application Implementation Guide	HMS

P.2 Document History

Summary of Recent Changes (1.00...)

Change	Page(s)
-	All

Revision List

Revision	Date	Author(s)	Chapter(s)	Description
1.00	2016-03-18	KaD	All	First revision

P.3 Support

For general contact information and support, please refer to the contact and support pages at www.anybus.com.

1. Getting Started

1.1 General Information

This installation guide documents how to get the Anybus CompactCom device up and running, using the example code demo on the Freescale TWR-P1025 evaluation board.

Included is a basic description of what peripherals/features are used in the demo and how each one of them behaves. Also included is a detailed description of the hardware configuration that must be used to run the example code demo out-of-the-box.

1.2 Starter Kit Contents

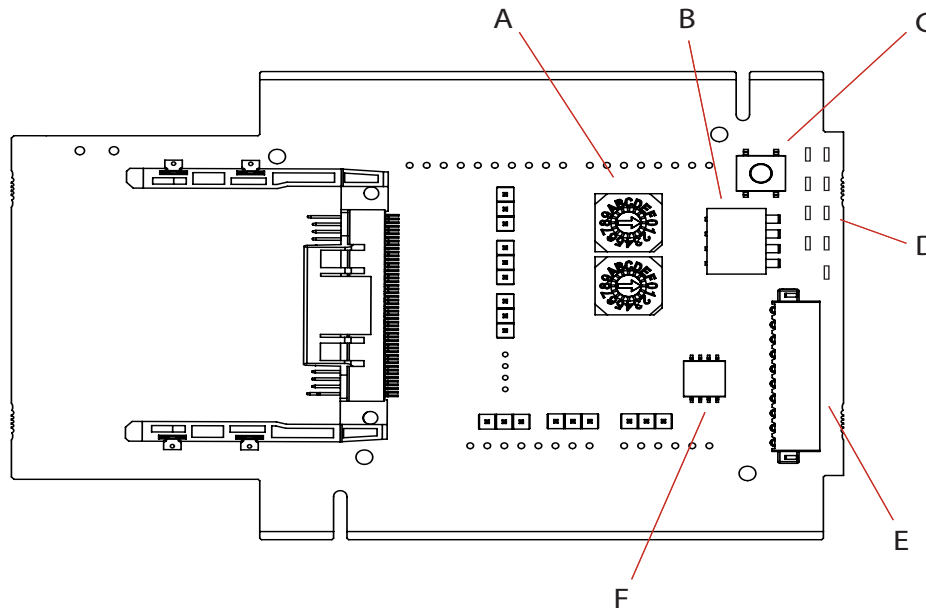- The TWR-ABCC SPI option board

1.3 Other Required Items

The following items are necessary, but not included in the starter kit:

- Anybus CompactCom module
- Zip file, available from the HMS website, containing the host application sample code
- Freescale TWR-P1025 evaluation board
- Network cables

1.4 Hardware Overview

Peripherals on the Option Board

Peripherals Information

Item	Name	Description
A	2 Hex switches (General Purpose)[a]	These general purpose rotary switches are read via I2C address 0x27. Hex 1: bit 0-3. Hex 2: bit 4-7.
B	Dip switch (General Purpose)[a]	This general purpose dip switch is read via I2C address 0x26, bits 0-3.
C	IRQ button[a]	Pressing this button generates an interrupt on IRQ_C. In the demo code, it is used to reset the CompactCom.
D	9 LEDs[a]	4 GP (General Purpose) LEDs, addressed via I2C address 0x26, bits 8-11. 2 MI (Module Identification) LEDs, addressed via I2C address 0x26, bits 12-13. 2 MD (Module Detection) LEDs, addressed via I2C address 0x26, bits 14-15. See the Anybus CompactCom 40 Hardware Design Guide for more information about the MI and MD pins. 1 POW (power) LED.
E	IO block[a]	General purpose IO, addressed via I2C address 0x27, bit 8-13.
F	Dip switch (Operating Mode)[a]	This operating mode dip switch is read via I2C address 0x26, bits 4-7.

a. For predefined help functions and more information, see the file "appl_adimap_board_io.c" in the example code.

Top Side Jumper Placement Guide
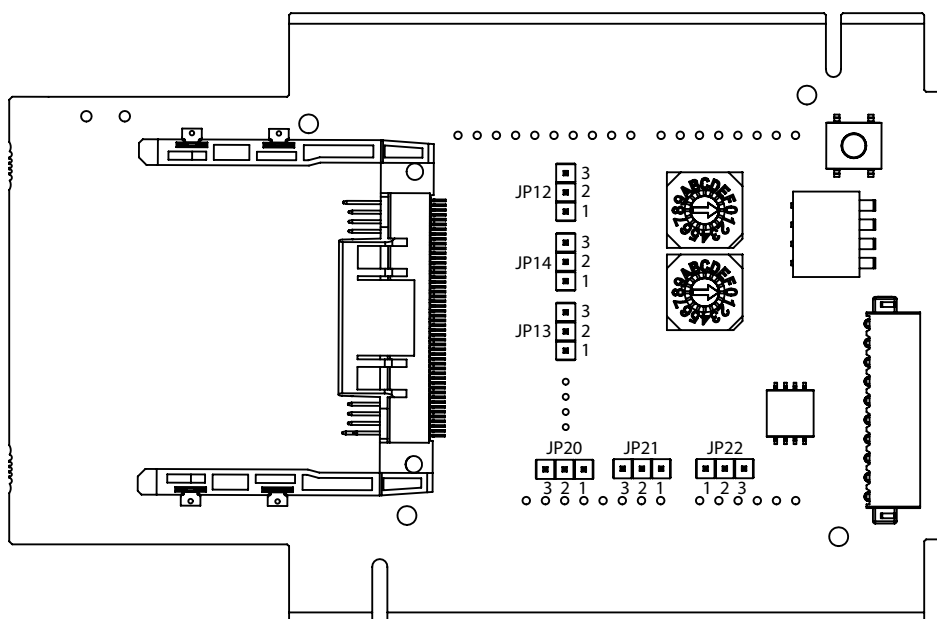
Jumper Information

Item	Description
JP12	TWR SPI Chip select selector. 1-2: SPI_SS1 2-3: SPI_SS0 (Default)
JP14	UART TX selector. 1-2: UART TX0 (Default för TWR-P1025) 2-3: UART TX2
JP13	UART RX selector. 1-2: UART RX0 (Default för TWR-P1025) 2-3: UART RX2
JP20	Gives the possibility to power an Arduino Uno R3 compatible platform with 3.3V. **This is not recommended.** 2-1: A_3V3 is shortened with DC/DC 3V3
JP21	Power inlet selector. 1-2: A_Vin; external 6-20 VDC supply allowed, but 7-12 VDC recommended 2-3: A_5V; 5 VDC supply from Arduino platform. May not be sufficient to run the CompactCom
JP22	Connect for external power supply. Optional. JP22.1: 6-20 VDC JP22.2: NC JP22.3: GND

Bottom Side Arduino R3 Interface Connectors
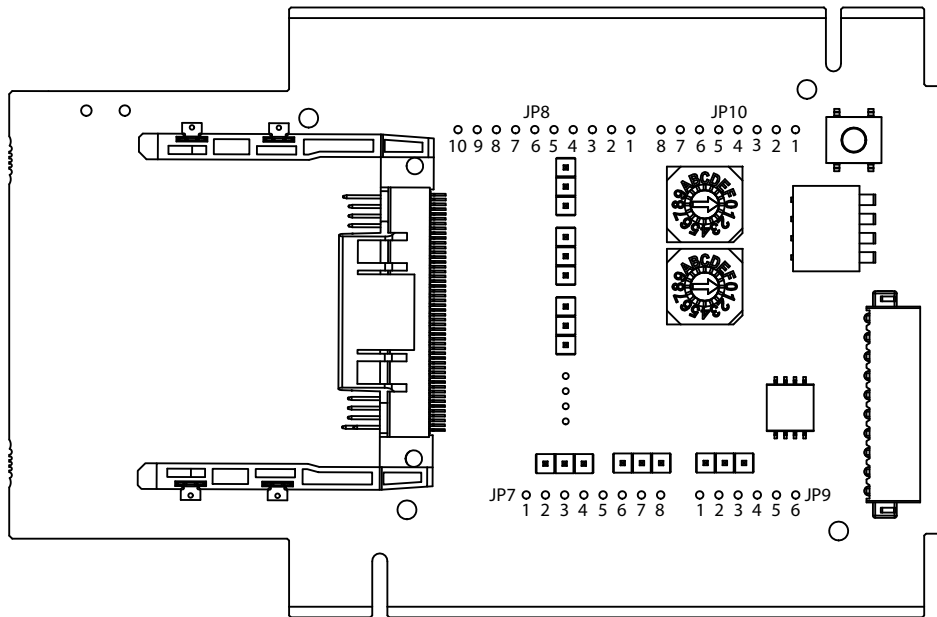
Arduino R3 Interface Pin Information

| Item	Description
JP7	1: NC (Not connected) 2: A_VCC 3: A_RESET 4: A_3V3 5: A_5V 6: GND 7: GND 8: A_Vin
JP8	1: RESTART_N 2: SYNC 3: SPI_SS_N[a] 4: SPI_MOSI[a] 5: SPI_MISO[a] 6: SPI_SCK[a] 7: GND 8: 3V3 9: I2C_SDA 10: I2C_SCL
JP9	(Not used)
JP10	1: A_RX[b] 2: A_TX[b] 3: OM3[c] 4: OM2[c] 5: OM1[c] 6: OM0[c] 7: IRQ_N 8: RST_N

a. The Anybus CompactCom is always slave.
b. A_TX/A_RX refers to the signals from the host CPU. A_TX is the signal from the host CPU to the CompactCom. A_RX is the signal from the CompactCom to the host CPU.
c. For information about the OM pins (OM0 - OM3), refer to the Anybus CompactCom Hardware Design Guide.

1.5 Assembly

Mount the Anybus CompactCom option board on the Freescale TWR-P1025 board according to the image below.

Note: On the CompactCom option card, one side is marked with a white line. Make sure that this side is inserted into the white colored connector on the Freescale tower system elevator module.
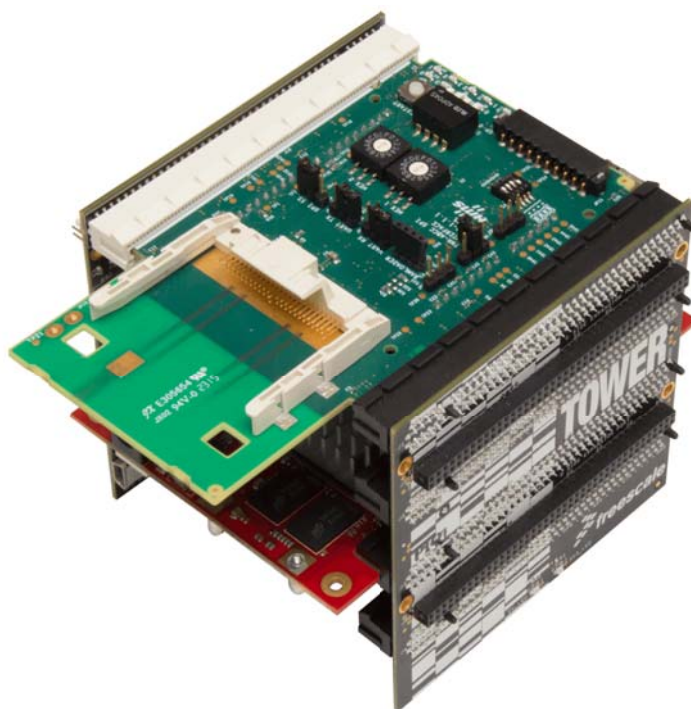
1.6 Version Information

This demo was built and verified on the following software and hardware versions:

- Freescale CodeWarrior DW_DSPA v10.4
- Freescale TWR-P1025 Rev C-04
- Anybus CompactCom Host Application Example Code Version 1.02.01
- Anybus CompactCom M40 Modbus-TCP Firmware version 1.04

1.7 Hardware Configuration

1.7.1 Freescale TWR-P1025 Hardware Configuration

The table below outlines all the necessary hardware changes that must be performed for proper configuration, in order to use the Anybus CompactCom option board in SPI operation mode with the Freescale TWR-P1025 board.

Jumper	Description
P1025 Jumper S1	Bit 0-3: OFF Bit 4-5: ON Bit 6: OFF Bit 7-8: ON Bit 9-10: OFF

1.8 Build and Run the Demo Application

IMPORTANT: Before proceeding to mount the board and run the demo, assure that all steps in the Hardware Configuration section above have been covered.

Failure to properly configure the hardware could result in damage to either the option card or the evaluation board!

Compile and run the project. For information about how to change or add to the code, see the Anybus CompactCom Host Application Implementation Guide, which can be downloaded from www.anybus.com.