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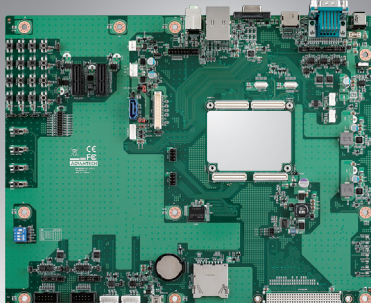Email & Skype: info@chipsmall.com Web: www.chipsmall.com

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ROM-DB3900

Development board for RISC RTX2.0 Module

Features

- Supports RTX2.0 CPU Module Board
- 3 display outputs. VGA, HDMI, 24-bit LVDS
- 1 SATA/SATA-DOM, 1 RJ-45, 1 USB 3.0, 1 USB 2.0 OTG, 2 CAN bus, 4 UART, 10 GPIO
- 2 PCIe slots, 1 system bus PC104 connector
- 2 MIPI interfaces for camera module
- Onboard eMMC Flash 4 GB, SD card, SIM card slot
- Supports HD Audio codec
- Supports system bus for extension application

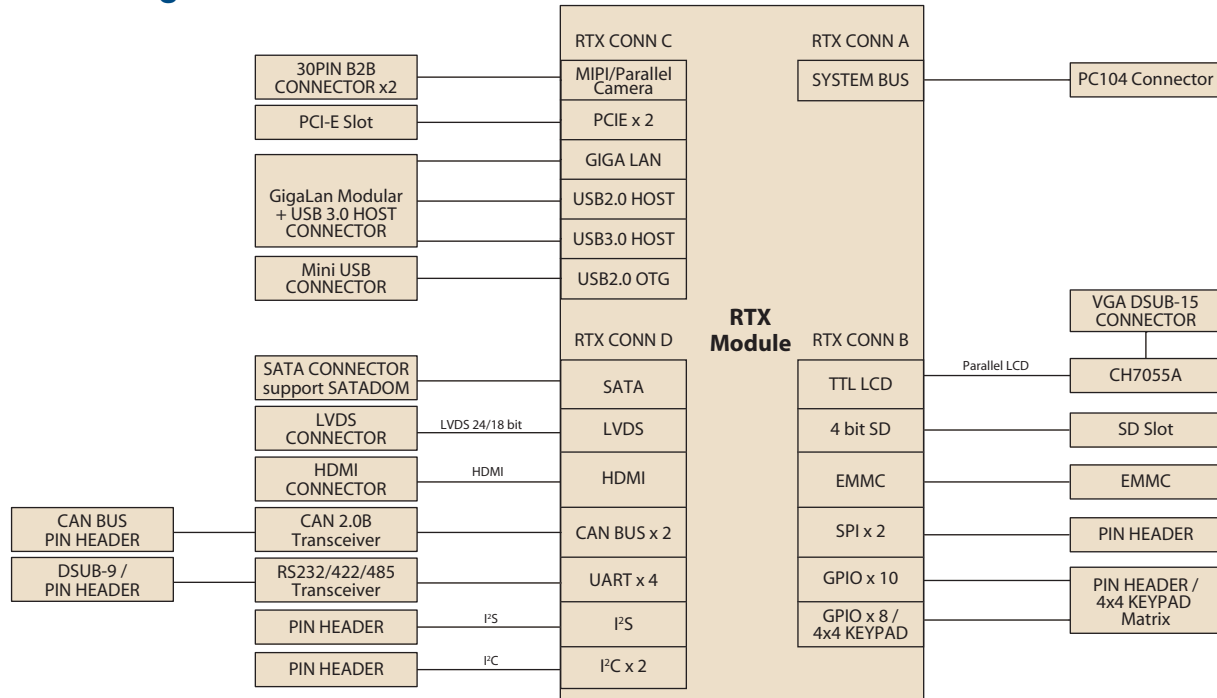RoHS COMPLIANT 2002/95/EC CE FCC

Introduction

ROM-DB3900 is an evaluation carrier board designed for the Advantech RTX2.0 module. It is compatible with the RTX2.0 module ROM-3420 and has a rich I/O interface for evaluation and development. It supports wide range operating temperature, and also supports two MIPI connectors for a camera module. ROM-DB3900 is an ideal development board for ruggedized applications, such as industrial control, automation control and HDMI systems.

ROM-DB3900 is released along with RISC RTX2.0 carrier board design documents: Carrier Board Design Guide, Layout, Schematic Checklist, and also the reference board schematics are ready for you to start your own carrier board design. With ROM-DB3900, you can easily learn the power of Advantech's RISC RTX2.0 module.

Specifications

Compatible Module		Advantech RTX2.0 CPU Module Series (67 x 67 mm)
Graphics	HDMI	1 HDMI TypeA
	LVDS	1 Single 18/24-bit LVDS
	VGA	1 D-Sub 15 with female connector
Ethernet	LAN	1 GbE with RJ45 connector
Storage	Flash	Onboard 4 GB eMMC
	SD	1 SD card slot
	SATA	1 SATAII Connector (with SATA-DOM support)
I/O	USB	1 USB mini Type B (OTG), 1 USD 2.0/3.0 Type A
	UART	4 4wires UART all support RS-232/422/485(2x DB9 connector and 2x box header)
	Audio	1 2 port phone jack, support Line-in , Line-out
	CAN	2 CAN 2.0B ports, Differential mode +5V
	GPIO	1 2x10 pin header
	I²C	2 I²C pin header
	SPI	2 SPI pin header
	Camera Input	2 MIPI/Parallel B2B connectors
	Keypad	18 pin headers (share with GPIO)
	I²S	1 pin header
Expansion	PCIe Slot	2 PCIe x1
	System bus	1 PC104 connector (Address : 31 bits , Data : 16 bits)
Power input	Power	19V DC Jack
Environment	Operating Temperature	0 ~ 60° C (32 ~ 140° F)
	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Physical Characteristics	Dimensions	305 x 244 mm (12" x 9.6")

Block Diagram

```
30PIN B2B                          RTX CONN C              RTX CONN A
CONNECTOR x2 ─────────────────     MIPI/Parallel           SYSTEM BUS ──────────── PC104 Connector
                                   Camera
PCI-E Slot ───────────────────     PCIE x 2

                                   GIGA LAN
GigaLan Modular
+ USB 3.0 HOST ───────────────     USB2.0 HOST
CONNECTOR
                                   USB3.0 HOST
Mini USB
CONNECTOR ────────────────────     USB2.0 OTG
                                                   RTX
                                                   Module                            VGA DSUB-15
                                   RTX CONN D              RTX CONN B                 CONNECTOR
SATA CONNECTOR                                                          Parallel LCD
support SATADOM ──────────────     SATA                    TTL LCD ──────────────── CH7055A

LVDS              LVDS 24/18 bit
CONNECTOR ────────────────────     LVDS                    4 bit SD ──────────────── SD Slot

HDMI              HDMI
CONNECTOR ────────────────────     HDMI                    EMMC ──────────────────── EMMC

CAN BUS           CAN 2.0B
PIN HEADER ─────  Transceiver ─    CAN BUS x 2             SPI x 2 ─────────────────  PIN HEADER

DSUB-9 /          RS232/422/485
PIN HEADER ─────  Transceiver ─    UART x 4                GPIO x 10 ───────────────  PIN HEADER /
                                                                                      4x4 KEYPAD
PIN HEADER ────── I²S ─────────    I²S                     GPIO x 8 /                 Matrix
                                                           4x4 KEYPAD
PIN HEADER ────── I²C ─────────    I²C x 2
```

Ordering Information

Part No.	Description
ROM-DB3900-SWA1E	Development board for RISC RTX2.0 Module series

Optional Accessories

Part No.	Description
EWM-W142F01E	802.11 b/g/n,AR9287,2T2R,Full size Mini PCIe
1750007050-01	WiFi RP-SMA short SMA Jack(9.5mm) to U.FL_100mm (WiFi Cable)
1750000318	EMI Antenna 2DBI 2.4GHz SMA CONN for ARK-3384 (WiFi Antenna)
EWM-C106FT01E	Cellular HSUPA/WCDMA/GPRS,Full Mini PCIe
1750007156-01	Cellular/GPS SMA Short JACK(9.5MM) L=100mm (3G Cable)
1750005865	Antenna L=10.9cm 50Ohm AN8921F-5701SM (3G Antenna)
9680015491	PCIe to miniPCIe adapter card
96PSA-A90W19V1-1	Adapter 100-240V 65W 19V
1700001524	for 3-pin USA standard power cord
170203183C	for 3-pin Europe standard power cord
170203180A	for 3-pin UK standard power cord
9696MX5300E	SYSTEM BUS to UART Board ROM-MX53

Packing List

Part No.	Description
9696ED2000E	debug adapter board
1700021882-01	LVDS backlight cable
1700021883-01	LVDS cable
1700021941-01	SATA power
1700004711	SATA signal
1700006911	USB OTG to Type A female
1700019077	USB OTG to Type A male
1701100300	F Cable IDE#3 10P-2.54/D-SUB 9P(M) 30cm for UART and CAN
1700022840-01	SPDIF to RCA cable for audio in and out
1700022373-01	Debug port cable for ROM-5420
1700019474	A Cable D-SUB 9P(F)/D-SUB 9P(F) RS232/RS485 100c