

## FEATURES

- TI AM335x Application Processor
  - **Up to 1GHz ARM Cortex A8 MPU**
  - NEON SIMD Coprocessor
  - 32 KB L1 Program Cache
  - 32 KB L1 Data Cache
  - 256 KB L2 Cache
  - 64 KB RAM
  - 176 KB boot ROM
  - JTAG Emulation/Debug
- AM335x Processor Choices
  - AM3359 (PRU's, 3D and EtherCat)
  - AM3358 (PRU's and 3D)
  - AM3357 (PRU's and EtherCat)
  - AM3356 (PRU's)
  - AM3354 (3D)
  - AM3352
- **Up To 1 GB DDR3 or 256 MB DDR2 CPU RAM**
- Up to 1 GB Parallel NAND FLASH
- 8 MB Serial NOR FLASH
- 2 Programmable Real-time Units (PRUs) – Processor Dependent
- Integrated Power Management
- SGX530 3D Graphics Accelerator – Processor Dependent
- Watchdog Timer
- Real-time clock
- Power Reset and Clock Management (PRCM)
- Crypto Hardware Accelerators (AES, SHA, PKA, RNG)



## STANDARD DDR3 SO-DIMM-204 INTERFACE

- 2 10/100/1000 Mbps EMACs
- 24-bit WXGA LCD Interface
- Touch Screen Controller
- 8 Channel, 12-bit SAR ADC
- 2 CAN Interfaces
- 6 UARTs
- 2 USB Ports
- 2 4-Channel McASPs
- 3 MMC/SD/SDIO
- 2 SPI, 2 I2C, GPIO
- eHRPWM, eQEP
- Single 3.3V to 5.0V Input Power Supply

## APPLICATIONS

- Embedded Instrumentation
- Industrial Automation
- Industrial Instrumentation
- Medical Instrumentation
- Weighing Scales
- Closed Loop Motor Control

## BENEFITS

- Rapid Development / Deployment
- Multiple Connectivity and Interface Options
- Rich User Interfaces
- High System Integration
- High Level OS Support
  - Linux Kernel
  - QNX
  - Windows CE Ready

## DESCRIPTION

The MityARM-335x series of highly configurable, small form-factor processor cards features one of Texas Instruments Sitara AM335x Processors. The module includes NAND FLASH and DDR2 or DDR3 RAM memory subsystems. A MityARM-335x provides a complete and flexible CPU infrastructure for highly integrated embedded systems.

The onboard AM335x processor provides Cortex-A8 32-bit RISC processor with a NEON SIMD coprocessor. This MPU is capable of running a rich set of real-time operating systems containing software applications programming interfaces (APIs) expected by modern system designers. The ARM architecture supports several operating systems, including Linux, QNX, and Windows CE.

In addition to the Cortex-A8, the AM335x family also offers available dual Programmable Real-Time Units (PRUs) when using the AM3356, AM3357, AM3358 or AM3359 processors. These PRUs are 200MHz RISC processors that run independently of the main Cortex-A8 CPU and have access to all the on-chip peripherals as well as all external memory. These can be used for any purpose; typical applications include the implementation of custom, industrial serial or Ethernet protocols such as PROFIBUS or EtherCAT. In addition, the PRUs can continue to run while the core CPU is in sleep mode in order to monitor for system wakeup events.

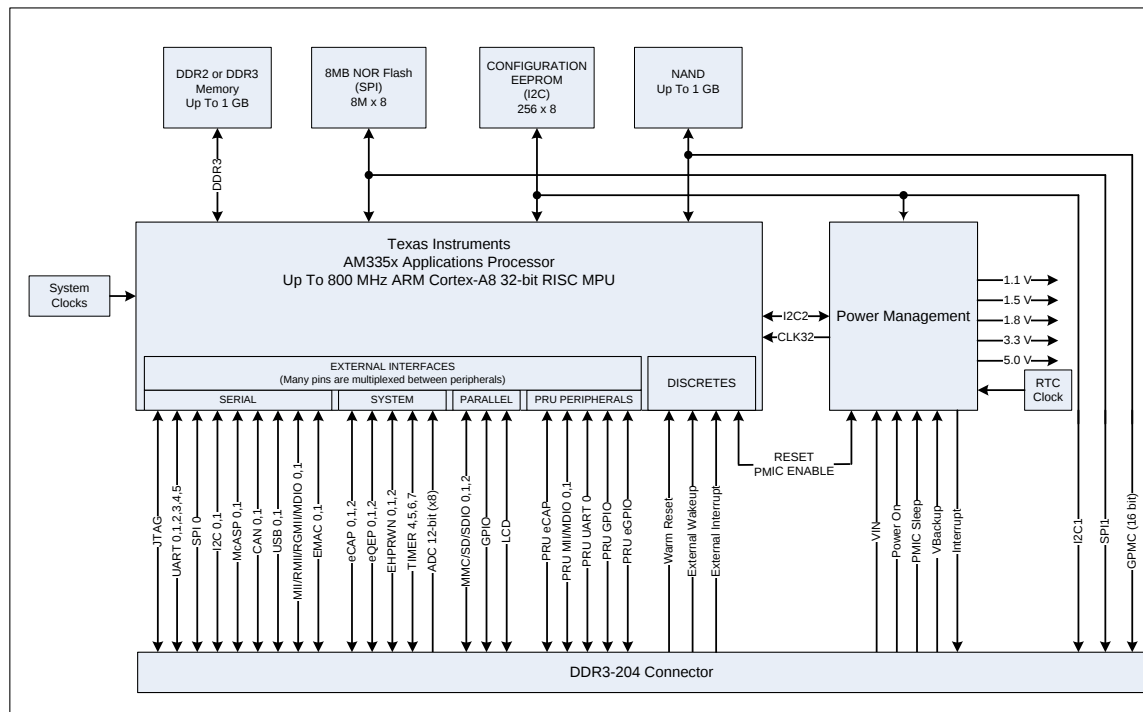


Figure 1 MityARM-335x Block Diagram

Figure 1 provides a top level block diagram of the MityARM-335x processor card. As shown in the figure, the primary interface to the MityARM-335x is through a standard DDR3 SO-DIMM-204 card edge interface. The interface provides power, synchronous serial connectivity, and many other interfaces provided by the Sitara processor. Details of the SO-DIMM-204 connector interface are included in the SO-DIMM-204 Interface Description, below.

## **MityARM-335x Onboard DDR Memory Options**

### **DDR2 Memory Option**

The AM335x processor includes one dedicated 16 bit DDR SDRAM memory interface. The MityARM-335x can include up to 256 MB of DDR2 RAM integrated on board the module. The memory bus interface is capable of burst transfer rates of 800 MB / second.

### **DDR3 Memory Option**

The AM335x processor includes one dedicated 16 bit DDR SDRAM memory interface. The MityARM-335x includes up to 1 GB of DDR3 RAM integrated on board the module. The memory bus interface is capable of burst transfer rates of 1200 MB / second.

## **MityARM-335x Onboard Storage Memory**

### **NAND FLASH (Optional)**

Up to 1GB of on-board NAND FLASH memory is connected to the AM335x processor using the general purpose memory controller (GPMC) bus. The FLASH memory is 8 bits wide and is connected to the first chip select line of the GPMC (CE0). The FLASH memory is typically used to store the following types of data:

- Bootloaders
- ARM Linux / Windows CE / QNX embedded root file-system
- runtime ARM software
- runtime application data (non-volatile storage)

The GPMC bus is also accessible on the SO-DIMM-204 connector. It can be used to access external memories such as SDRAM, SRAM, NOR flash, NAND flash, or memory-mapped ASICs and FPGAs. The interface is a maximum of 16-bits wide, but can also be used for 8-bit access.

### **NOR FLASH (Optional)**

8 MB of on-board NOR FLASH memory is connected to the AM335x using the Serial Peripheral Interface (SPI1). The AM335x provides up to 2 SPI interfaces with both interfaces available on the SO-DIMM connector.

### **Configuration EEPROM**

The MityARM-335x contains a 256 x 8-bit EEPROM that is used to hold configuration data for the module. The EEPROM is connected to the AM335x using the I2C1 interface available on AM335x.

## External Interfaces

The AM335x makes extensive use of functional pin multiplexing to provide a highly configurable device that can be tailored to a multitude of applications. A list of the interfaces/functions that are available to the user is provided below.

- 2 Universal Serial Bus (USB) 2.0 High-Speed On the Go ports
- 2 Controller-Area Network (CAN) ports
- 2 Multichannel Audio Serial Ports (McASP)
- 2 Industrial Gigabit Ethernet MAC's (10/100/1000 Mbps)
- 3 MMC/SD/SDIO ports
- 8 input, 12 bit A/D Converter
- LCD Controller
- 3 Enhanced Capture (eCAP) Modules
- 3 Enhanced High-Resolution PWM (eHRPWN) modules
- 3 32-bit Enhanced Quadrature Pulse Encoder (eQPE) modules
- 4 Timers
- 2 Serial Peripheral (SPI) ports
  - SPI Port 1 is also connected to the on-board NOR FLASH memory
- 6 Universal Asynchronous Receive/Transmit (UART) ports
- 2 Inter-Integrated Circuit (I2C) ports
  - I2C Port 1 is also connected to the on-board EEPROM and PMIC
- General Purpose Memory Controller (GPMC) interface
  - A subset of this interface is also connected to the on-board NAND FLASH
- JTAG/Debugger port

Additionally, most of the pin multiplexed signals can be configured as general purpose I/O signals with interrupt capability.

### Software and Application Development Support

Users of the AM335x are encouraged to develop applications using the MityARM-335x software development kit provided by Critical Link LLC. The SDK is an expansion of the TI platform support package for the AM335x and includes an implementation of an OpenEmbedded board support package providing an Angstrom based Linux root filesystem/distribution and compatible gcc compiler tool-chain with debugger.

### Growth Options

The AM335x has been designed to support several upgrade options. These options include various speed grades, memory configurations, and operating temperature specifications including commercial and industrial temperature ranges. The available options are listed in the section below containing ordering information. For additional ordering information and details regarding these options, or to inquire about a particular configuration not listed below, please contact a Critical Link sales representative.

### ABSOLUTE MAXIMUM RATINGS

If Military/Aerospace specified cards are required, please contact the Critical Link Sales Office or unit Distributors for availability and specifications.

Maximum Supply Voltage, Vcc                      5.2 V

Storage Temperature Range                      -65 to 80C

### OPERATING CONDITIONS

|                              |               |
|------------------------------|---------------|
| Commercial Temperature Range | 0°C to 70°C   |
| Industrial Temperature Range | -40°C to 85°C |

### SO-DIMM-204 Interface Description

The primary interface connector for the MityARM-335x is the SO-DIMM card edge interface which contains 4 classes of signals:

- Power (PWR)
- Dedicated signals mapped to the on-board Power Management device (PM)
- Dedicated signals mapped to the AM335xZCZ device (335D)
- Multi-function signals mapped to the AM335xZCZ device (335M)

Table 1 contains a summary of the MityARM-335x pin mapping.

Note that not all signals/mux options are available with all AM335x processor options (i.e. PRU's) and the I2C1 and I2C2 interface signals/mux options cannot be changed as they are used for dedicated functions on the MityARM-335x module.

**Table 1 SO-DIMM Pin-Out**

| PIN             | Class | Signal     | PMIC Pin | AM3359 Pin | Power Domain | Signal Option | Signal Option | Signal Option     | Signal Option          | Signal Option       | Signal Option      | Signal Option      | Signal Option |
|-----------------|-------|------------|----------|------------|--------------|---------------|---------------|-------------------|------------------------|---------------------|--------------------|--------------------|---------------|
| 1               | PWR   | VIN        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 2               | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 3               | PWR   | VIN        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 4               | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 5               | PWR   | VIN        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 6               | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 7               | PWR   | VIN        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 8               | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 9               | PWR   | VIN        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 10              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 11              | PWR   | VIN        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 12              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 13              | PWR   | VIN        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 14              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 15              | PWR   | VIN        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 16              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 17              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 18              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 19              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 20              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 21 <sup>2</sup> | PWR   | VIO_3P3    | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 22 <sup>2</sup> | PWR   | VIO_1P8    | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 23 <sup>2</sup> | PWR   | VIO_3P3    | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 24 <sup>2</sup> | PWR   | VIO_1P8    | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 25 <sup>2</sup> | PWR   | VIO_3P3    | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 26 <sup>2</sup> | PWR   | VIO_1P8    | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 27 <sup>2</sup> | PWR   | VIO_3P3    | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 28 <sup>2</sup> | PWR   | VIO_1P8    | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 29              | 335M  | LCD_DATA0  | -        | R1         | 3.3V         | lcd_data0     | gpmc_a0       | pr1_mii_mt0_clk   | ehrpwm2A               | pr1_pru1_pru_r30_0  | pr1_pru1_pru_r31_0 | gpio2_6            |               |
| 30              | PWR   | LED_RTN    | -        | -          |              |               |               |                   |                        |                     |                    |                    |               |
| 31              | 335M  | LCD_DATA1  | -        | R2         | 3.3V         | lcd_data1     | gpmc_a1       | pr1_mii0_txen     | ehrpwm2B               | pr1_pru1_pru_r30_1  | pr1_pru1_pru_r31_1 | gpio2_7            |               |
| 32 <sup>1</sup> | PM    | PWR_ON     | 33       | -          | 3.3V         |               |               |                   |                        |                     |                    |                    |               |
| 33              | 335M  | LCD_DATA2  | -        | R3         | 3.3V         | lcd_data2     | gpmc_a2       | pr1_mii0_txd3     | ehrpwm2_tripzone_input | pr1_pru1_pru_r30_2  | pr1_pru1_pru_r31_2 | gpio2_8            |               |
| 34              | PWR   | VBACKUP    | 27       | -          |              |               |               |                   |                        |                     |                    |                    |               |
| 35              | 335M  | LCD_DATA3  | -        | R4         | 3.3V         | lcd_data3     | gpmc_a3       | pr1_mii0_txd2     | ehrpwm0_synco          | pr1_pru1_pru_r30_3  | pr1_pru1_pru_r31_3 | gpio2_9            |               |
| 36              | PM    | PMIC_SLEEP | 37       | -          | 3.3V         |               |               |                   |                        |                     |                    |                    |               |
| 37              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 38              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 39              | 335M  | LCD_DATA4  | -        | T1         | 3.3V         | lcd_data4     | gpmc_a4       | pr1_mii0_txd1     | eQEP2A_in              | pr1_pru1_pru_r30_4  | pr1_pru1_pru_r31_4 | gpio2_10           |               |
| 40              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 41              | 335M  | LCD_DATA5  | -        | T2         | 3.3V         | lcd_data5     | gpmc_a5       | pr1_mii0_txd0     | eQEP2B_in              | pr1_pru1_pru_r30_5  | pr1_pru1_pru_r31_5 | gpio2_11           |               |
| 42              | PWR   | GND        | -        | -          | -            |               |               |                   |                        |                     |                    |                    |               |
| 43              | 335M  | LCD_DATA6  | -        | T3         | 3.3V         | lcd_data6     | gpmc_a6       | pr1_edio_data_in6 | eQEP2_index            | pr1_edio_data_out_6 | pr1_pru1_pru_r30_6 | pr1_pru1_pru_r31_6 | gpio2_12      |
| 44              | PWR   | VDDS_HV2   | -        | P10        | VDDSH_V2     | VDDSHV2       |               |                   |                        |                     |                    |                    |               |

| PIN | Class | Signal         | PMIC Pin | AM3359 Pin | Power Domain | Signal Option  | Signal Option  | Signal Option          | Signal Option      | Signal Option      | Signal Option       | Signal Option          | Signal Option |
|-----|-------|----------------|----------|------------|--------------|----------------|----------------|------------------------|--------------------|--------------------|---------------------|------------------------|---------------|
| 45  | 335M  | LCD_DATA7      | -        | T4         | 3.3V         | lcd_data7      | gpmc_a7        | pr1_edio_data_in7      | eQEP2_strobe       | pr1_edio_data_out7 | pr1_pru1_pru_r30_7  | pr1_pru1_pru_r31_7     | gpio2_13      |
| 46  | PWR   | VDDSH_V2       | -        | P11        | VDDSH_V2     | VDDSHV2        |                |                        |                    |                    |                     |                        |               |
| 47  | 335M  | LCD_DATA8      | -        | U1         | 3.3V         | lcd_data8      | gpmc_a12       | ehrpwm1_tripzone_input | mcasp0_acllkx      | uart5_txd          | pr1_mii0_rxd3       | uart2_ctsn             | gpio2_14      |
| 48  | PWR   | VDDSH_V4       | -        | H14        | VDDSH_V4     | VDDSHV4        |                |                        |                    |                    |                     |                        |               |
| 49  | 335M  | LCD_DATA9      | -        | U2         | 3.3V         | lcd_data9      | gpmc_a13       | ehrpwm0_synco          | mcasp0_fsx         | uart5_rxd          | pr1_mii0_rxd2       | uart2_rtsn             | gpio2_15      |
| 50  | PWR   | VDDSH_V4       | -        | J14        | VDDSH_V4     | VDDSHV4        |                |                        |                    |                    |                     |                        |               |
| 51  | 335M  | LCD_DATA10     | -        | U3         | 3.3V         | lcd_data10     | gpmc_a14       | ehrpwm1A               | mcasp0_axr0        | pr1_mii0_rxd1      | uart3_ctsn          | gpio2_16               |               |
| 52  | PM    | PMIC_INT_N     | 45       | -          | 3.3V         |                |                |                        |                    |                    |                     |                        |               |
| 53  | 335M  | LCD_DATA11     | -        | U4         | 3.3V         | lcd_data11     | gpmc_a15       | ehrpwm1B               | mcasp0_ahclkx      | mcasp0_axr2        | pr1_mii0_rxd0       | uart3_rtsn             | gpio2_17      |
| 54  | PWR   | GND            | -        | -          | -            |                |                |                        |                    |                    |                     |                        |               |
| 55  | PWR   | GND            | -        | -          | -            |                |                |                        |                    |                    |                     |                        |               |
| 56  | PWR   | GND            | -        | -          | -            |                |                |                        |                    |                    |                     |                        |               |
| 57  | 335M  | LCD_DATA12     | -        | V2         | 3.3V         | lcd_data12     | gpmc_a16       | eQEP1A_in              | mcasp0_aclkr       | mcasp0_axr2        | pr1_mii0_rxlink     | uart4_ctsn             | gpio0_8       |
| 58  | 335M  | GPMC_A0        | -        | R13        | 3.3V         | gpmc_a0        | gmii2_txen     | rgmii2_tctl            | rmii2_txen         | gpmc_a16           | pr1_mii_mt1_clk     | ehrpwm1_tripzone_input | gpio1_16      |
| 59  | 335M  | LCD_DATA13     | -        | V3         | 3.3V         | lcd_data13     | gpmc_a17       | eQEP1B_in              | mcasp0_fsr         | mcasp0_axr3        | pr1_mii0_rxer       | uart4_rtsn             | gpio0_9       |
| 60  | 335M  | GPMC_A1        | -        | V14        | 3.3V         | gpmc_a1        | gmii2_rxdv     | rgmii2_rctl            | mmc2_dat0          | gpmc_a17           | pr1_mii1_txd3       | ehrpwm0_synco          | gpio1_17      |
| 61  | 335M  | LCD_DATA14     | -        | V4         | 3.3V         | lcd_data14     | gpmc_a18       | eQEP1_index            | mcasp0_axr1        | uart5_rxd          | pr1_mii_mr0_clk     | uart5_ctsn             | gpio0_10      |
| 62  | 335M  | GPMC_A2        | -        | U14        | 3.3V         | gpmc_a2        | gmii2_txd3     | rgmii2_td3             | mmc2_dat1          | gpmc_a18           | pr1_mii1_txd2       | ehrpwm1A               | gpio1_18      |
| 63  | 335M  | LCD_DATA15     | -        | T5         | 3.3V         | lcd_data15     | gpmc_a19       | eQEP1_strobe           | mcasp0_ahclkx      | mcasp0_axr3        | pr1_mii0_rxdv       | uart5_rtsn             | gpio0_11      |
| 64  | 335M  | GPMC_A3        | -        | T14        | 3.3V         | gpmc_a3        | gmii2_txd2     | rgmii2_td2             | mmc2_dat2          | gpmc_a19           | pr1_mii1_txd1       | ehrpwm1B               | gpio1_19      |
| 65  | 335M  | LCD_PCLK       | -        | V5         | 3.3V         | lcd_pclk       | gpmc_a10       | pr1_mii0_crs           | pr1_edio_data_in4  | pr1_edio_data_out4 | pr1_pru1_pru_r30_10 | pr1_pru1_pru_r31_10    | gpio2_24      |
| 66  | 335M  | GPMC_A4        | -        | R14        | 3.3V         | gpmc_a4        | gmii2_txd1     | rgmii2_td1             | rmii2_txd1         | gpmc_a20           | pr1_mii1_txd0       | eQEP1A_in              | gpio1_20      |
| 67  | 335M  | LCD_VSYNC      | -        | U5         | 3.3V         | lcd_vsync      | gpmc_a8        | pr1_edio_data_in2      | pr1_edio_data_out2 | pr1_pru1_pru_r30_8 | pr1_pru1_pru_r31_8  | gpio2_22               |               |
| 68  | 335M  | GPMC_A5        | -        | V15        | 3.3V         | gpmc_a5        | gmii2_txd0     | rgmii2_td0             | rmii2_txd0         | gpmc_a21           | pr1_mii1_rxd3       | eQEP1B_in              | gpio1_21      |
| 69  | 335M  | LCD_HSYNC      | -        | R5         | 3.3V         | lcd_hsync      | gpmc_a9        | pr1_edio_data_in3      | pr1_edio_data_out3 | pr1_pru1_pru_r30_9 | pr1_pru1_pru_r31_9  | gpio2_23               |               |
| 70  | 335M  | GPMC_A6        | -        | U15        | 3.3V         | gpmc_a6        | gmii2_txclk    | rgmii2_tclk            | mmc2_dat4          | gpmc_a22           | pr1_mii1_rxd2       | eQEP1_index            | gpio1_22      |
| 71  | 335M  | LCD_AC_BIAS_EN | -        | R6         | 3.3V         | lcd_ac_bias_en | gpmc_a11       | pr1_mii1_crs           | pr1_edio_data_in5  | pr1_edio_data_out5 | pr1_pru1_pru_r30_11 | pr1_pru1_pru_r31_11    | gpio2_25      |
| 72  | 335M  | GPMC_A7        | -        | T15        | 3.3V         | gpmc_a7        | gmii2_rxclk    | rgmii2_rclk            | mmc2_dat5          | gpmc_a23           | pr1_mii1_rxd1       | eQEP1_strobe           | gpio1_23      |
| 73  | PWR   | GND            | -        | -          | -            |                |                |                        |                    |                    |                     |                        |               |
| 74  | PWR   | GND            | -        | -          | -            |                |                |                        |                    |                    |                     |                        |               |
| 75  | 335D  | GPMC_AD0       | -        | U7         | 3.3V         | gpmc_ad0       |                |                        |                    |                    |                     |                        |               |
| 76  | 335M  | GPMC_A8        | -        | V16        | 3.3V         | gpmc_a8        | gmii2_rxd3     | rgmii2_rd3             | mmc2_dat6          | gpmc_a24           | pr1_mii1_rxd0       | mcasp0_acllkx          | gpio1_24      |
| 77  | 335D  | GPMC_AD1       | -        | V7         | 3.3V         | gpmc_ad1       |                |                        |                    |                    |                     |                        |               |
| 78  | 335M  | GPMC_A9        | -        | U16        | 3.3V         | gpmc_a9        | gmii2_rxd2     | rgmii2_rd2             | mmc2_dat7          | gpmc_a25           | pr1_mii_mr1_clk     | mcasp0_fsx             | gpio1_25      |
| 79  | 335D  | GPMC_AD2       | -        | R8         | 3.3V         | gpmc_ad2       |                |                        |                    |                    |                     |                        |               |
| 80  | 335M  | GPMC_A10       | -        | T16        | 3.3V         | gpmc_a10       | gmii2_rxd1     | rgmii2_rd1             | rmii2_rxd1         | gpmc_a26           | pr1_mii1_rxdv       | mcasp0_axr0            | gpio1_26      |
| 81  | 335D  | GPMC_AD3       | -        | T8         | 3.3V         | gpmc_ad3       |                |                        |                    |                    |                     |                        |               |
| 82  | 335M  | GPMC_A11       | -        | V17        | 3.3V         | gpmc_a11       | gmii2_rxd0     | rgmii2_rd0             | rmii2_rxd0         | gpmc_a27           | pr1_mii1_rxer       | mcasp0_axr1            | gpio1_27      |
| 83  | 335D  | GPMC_AD4       | -        | U8         | 3.3V         | gpmc_ad4       |                |                        |                    |                    |                     |                        |               |
| 84  | 335M  | GPMC_CLK       | -        | V12        | VDDSH_V2     | gpmc_clk       | lcd_memory_clk | gpmc_wait1             | mmc2_clk           | pr1_mii1_crs       | pr1_mdio_mdclk      | mcasp0_fsr             | gpio2_1       |
| 85  | 335D  | GPMC_AD5       | -        | V8         | 3.3V         | gpmc_ad5       |                |                        |                    |                    |                     |                        |               |
| 86  | 335D  | GPMC_BEN0_CLE  | -        | T6         | 3.3V         | gpmc_ben0_cle  |                |                        |                    |                    |                     |                        |               |
| 87  | 335D  | GPMC_AD6       | -        | R9         | 3.3V         | gpmc_ad6       |                |                        |                    |                    |                     |                        |               |
| 88  | 335D  | GPMC_ADV_NALE  | -        | R7         | 3.3V         | gpmc_advn_a1e  |                |                        |                    |                    |                     |                        |               |

| PIN | Class | Signal        | PMIC Pin | AM3359 Pin | Power Domain | Signal Option | Signal Option  | Signal Option | Signal Option     | Signal Option          | Signal Option               | Signal Option       | Signal Option |
|-----|-------|---------------|----------|------------|--------------|---------------|----------------|---------------|-------------------|------------------------|-----------------------------|---------------------|---------------|
| 89  | 335D  | GPMC_AD7      | -        | T9         | 3.3V         | gpmc_ad7      |                |               |                   |                        |                             |                     |               |
| 90  | 335D  | GPMC_OEN_RE_N | -        | T7         | 3.3V         | gpmc_oen_re_n |                |               |                   |                        |                             |                     |               |
| 91  | PWR   | GND           | -        | -          | -            |               |                |               |                   |                        |                             |                     |               |
| 92  | PWR   | GND           | -        | -          | -            |               |                |               |                   |                        |                             |                     |               |
| 93  | 335M  | GPMC_AD8      | -        | U10        | VDDSH V2     | gpmc_ad8      | lcd_data23     | mmc1_dat0     | mmc2_dat4         | ehrpwm2A               | pr1_mii_mt0_clk             | gpio0_22            |               |
| 94  | 335M  | GPMC_CSN3     | -        | T13        | VDDSH V2     | gpmc_csn3     | mmc2_cmd       | pr1_mii0_crs  | pr1_mdio_data     | EMU4                   | gpio2_0                     |                     |               |
| 95  | 335M  | GPMC_AD9      | -        | T10        | VDDSH V2     | gpmc_ad9      | lcd_data22     | mmc1_dat1     | mmc2_dat5         | ehrpwm2B               | pr1_mii0_col                | gpio0_23            |               |
| 96  |       | No Connect    |          |            |              |               |                |               |                   |                        |                             |                     |               |
| 97  | 335M  | GPMC_AD10     | -        | T11        | VDDSH V2     | gpmc_ad10     | lcd_data21     | mmc1_dat2     | mmc2_dat6         | ehrpwm2_tripzone_input | pr1_mii0_txen               | gpio0_26            |               |
| 98  | 335D  | GPMC_WE_N     | -        | U6         | 3.3V         | gpmc_wen      |                |               |                   |                        |                             |                     |               |
| 99  | 335M  | GPMC_AD11     | -        | U12        | VDDSH V2     | gpmc_ad11     | lcd_data20     | mmc1_dat3     | mmc2_dat7         | ehrpwm0_synco          | pr1_mii0_txd3               | gpio0_27            |               |
| 100 | 335D  | GPMC_WAIT0    | -        | T17        | 3.3V         | gpmc_wait0    |                |               |                   |                        |                             |                     |               |
| 101 | 335M  | GPMC_AD12     | -        | T12        | VDDSH V2     | gpmc_ad12     | lcd_data19     | mmc1_dat4     | mmc2_dat0         | eQEP2A_in              | pr1_mii0_txd2               | pr1_pru0_pru_r30_14 | gpio1_12      |
| 102 | 335M  | GPMC_BEN1     | -        | U18        | 3.3V         | gpmc_be1n     | gmii2_col      | gpmc_csn6     | mmc2_dat3         | gpmc_dir               | pr1_mii1_rxlink             | mcasp0_aclkr        | gpio1_28      |
| 103 | 335M  | GPMC_AD13     | -        | R12        | VDDSH V2     | gpmc_ad13     | lcd_data18     | mmc1_dat5     | mmc2_dat1         | eQEP2B_in              | pr1_mii0_txd1               | pr1_pru0_pru_r30_15 | gpio1_13      |
| 104 | 335D  | GPMC_WP_N     | -        | U17        | 3.3V         | gpmc_wpn      |                |               |                   |                        |                             |                     |               |
| 105 | 335M  | GPMC_AD14     | -        | V13        | VDDSH V2     | gpmc_ad14     | lcd_data17     | mmc1_dat6     | mmc2_dat2         | eQEP2_index            | pr1_mii0_txd0               | pr1_pru0_pru_r31_14 | gpio1_14      |
| 106 |       | No Connect    |          |            |              |               |                |               |                   |                        |                             |                     |               |
| 107 | 335M  | GPMC_AD15     | -        | U13        | VDDSH V2     | gpmc_ad15     | lcd_data16     | mmc1_dat7     | mmc2_dat3         | eQEP2_strobe           | pr1_ecap0_ecap_capin_apwm_o | pr1_pru0_pru_r31_15 | gpio1_15      |
| 108 |       | No Connect    |          |            |              |               |                |               |                   |                        |                             |                     |               |
| 109 | PWR   | GND           | -        | -          | -            |               |                |               |                   |                        |                             |                     |               |
| 110 | PWR   | GND           | -        | -          | -            |               |                |               |                   |                        |                             |                     |               |
| 111 | 335M  | GPMC_CSN2     | -        | V9         | 3.3V         | gpmc_csn2     | gpmc_be1n      | mmc1_cmd      | pr1_edio_data_in7 | pr1_edio_data_out7     | pr1_pru1_pru_r30_13         | pr1_pru1_pru_r31_13 | gpio1_31      |
| 112 | 335M  | GMII1_RXD0    | -        | M16        | 3.3V         | gmii1_rxd0    | rmii1_rxd0     | rgmii1_rd0    | mcasp1_ahclcx     | mcasp1_ahclkr          | mcasp1_aclkr                | mcasp0_axr3         | gpio2_21      |
| 113 | 335M  | GPMC_CSN1     | -        | U9         | 3.3V         | gpmc_csn1     | gpmc_clk       | mmc1_clk      | pr1_edio_data_in6 | pr1_edio_data_out6     | pr1_pru1_pru_r30_12         | pr1_pru1_pru_r31_12 | gpio1_30      |
| 114 | 335M  | GMII1_RXD1    | -        | L15        | 3.3V         | gmii1_rxd1    | rmii1_rxd1     | rgmii1_rd1    | mcasp1_axr3       | mcasp1_fsr             | eQEP0_strobe                | mmc2_clk            | gpio2_20      |
| 115 | 335D  | USB0_VBUS     | -        | P15        |              | USB0_VBUS     |                |               |                   |                        |                             |                     |               |
| 116 | 335M  | GMII1_RXD2    | -        | L16        | 3.3V         | gmii1_rxd2    | uart3_txd      | rgmii1_rd2    | mmc0_dat4         | mmc1_dat3              | uart1_rin                   | mcasp0_axr1         | gpio2_19      |
| 117 | 335D  | USB0_ID       | -        | P16        |              | USB0_ID       |                |               |                   |                        |                             |                     |               |
| 118 | 335M  | GMII1_RXD3    | -        | L17        | 3.3V         | gmii1_rxd3    | uart3_rxd      | rgmii1_rd3    | mmc0_dat5         | mmc1_dat2              | uart1_dtrn                  | mcasp0_axr0         | gpio2_18      |
| 119 | 335D  | USB1_VBUS     | -        | T18        |              | USB1_VBUS     |                |               |                   |                        |                             |                     |               |
| 120 | 335M  | GMII1_RXCLK   | -        | L18        | 3.3V         | gmii1_rxcclk  | uart2_txd      | rgmii1_rclk   | mmc0_dat6         | mmc1_dat1              | uart1_dsrn                  | mcasp0_fsx          | gpio3_10      |
| 121 | 335D  | USB1_DP       | -        | R17        |              | USB1_DP       |                |               |                   |                        |                             |                     |               |
| 122 | 335M  | GMII1_RXDV    | -        | J17        | 3.3V         | gmii1_rxdv    | lcd_memory_clk | rgmii1_rctl   | uart5_txd         | mcasp1_aclkx           | mmc2_dat0                   | mcasp0_aclkr        | gpio3_4       |
| 123 | 335D  | USB1_DM       | -        | R18        |              | USB1_DM       |                |               |                   |                        |                             |                     |               |
| 124 |       | No Connect    |          |            |              |               |                |               |                   |                        |                             |                     |               |
| 125 | 335D  | USB1_CE       | -        | P18        |              | USB1_CE       |                |               |                   |                        |                             |                     |               |
| 126 | 335M  | GMII1_TXCLK   | -        | K18        | 3.3V         | gmii1_txclk   | uart2_rxd      | rgmii1_tclk   | mmc0_dat7         | mmc1_dat0              | uart1_dcdn                  | mcasp0_aclkx        | gpio3_9       |
| 127 | PWR   | GND           | -        | -          | -            |               |                |               |                   |                        |                             |                     |               |
| 128 | 335M  | GMII1_TXD0    | -        | K17        | 3.3V         | gmii1_txd0    | rmii1_txd0     | rgmii1_td0    | mcasp1_axr2       | mcasp1_aclkr           | eQEP0B_in                   | mmc1_clk            | gpio0_28      |
| 129 | 335D  | USB1_ID       | -        | P17        |              | USB1_ID       |                |               |                   |                        |                             |                     |               |
| 130 | 335M  | GMII1_TXD1    | -        | K16        | 3.3V         | gmii1_txd1    | rmii1_txd1     | rgmii1_td1    | mcasp1_fsr        | mcasp1_axr1            | eQEP0A_in                   | mmc1_cmd            | gpio0_21      |
| 131 | 335D  | USB0_DM       | -        | N18        |              | USB0_DM       |                |               |                   |                        |                             |                     |               |
| 132 | 335M  | GMII1_TXD2    | -        | K15        | 3.3V         | gmii1_txd2    | dcan0_rx       | rgmii1_td2    | uart4_txd         | mcasp1_axr0            | mmc2_dat2                   | mcasp0_ahclcx       | gpio0_17      |

| PIN | Class | Signal        | PMIC Pin | AM3359 Pin | Power Domain | Signal Option | Signal Option    | Signal Option | Signal Option | Signal Option      | Signal Option       | Signal Option       | Signal Option |
|-----|-------|---------------|----------|------------|--------------|---------------|------------------|---------------|---------------|--------------------|---------------------|---------------------|---------------|
| 133 | 335D  | USB0_DP       | -        | N17        |              | USB0_DP       |                  |               |               |                    |                     |                     |               |
| 134 | 335M  | GMI11_TXD3    | -        | J18        | 3.3V         | gmii1_txd3    | dcan0_tx         | rgmii1_td3    | uart4_rxd     | mcasp1_fsx         | mmc2_dat1           | mcasp0_fsr          | gpio0_16      |
| 135 | 335D  | USB0_CE       | -        | M15        |              | USB0_CE       |                  |               |               |                    |                     |                     |               |
| 136 | 335M  | GMI11_TXEN    | -        | J16        | 3.3V         | gmii1_txen    | rmii1_txen       | rgmii1_tctl   | timer4        | mcasp1_axr0        | eQEP0_index         | mmc2_cmd            | gpio3_3       |
| 137 | 335M  | USB1_DRVVBUS  | -        | F15        | 3.3V         | USB1_DRV_VBUS | gpio3_13         |               |               |                    |                     |                     |               |
| 138 | 335M  | GMI11_COL     | -        | H16        | 3.3V         | gmii1_col     | rmii2_refclk     | spi1_sclk     | uart5_rxd     | mcasp1_axr2        | mmc2_dat3           | mcasp0_axr2         | gpio3_0       |
| 139 | 335M  | USB0_DRVVBUS  | -        | F16        | 3.3V         | USB0_DRV_VBUS | gpio0_18         |               |               |                    |                     |                     |               |
| 140 |       | No Connect    |          |            |              |               |                  |               |               |                    |                     |                     |               |
| 141 | 335M  | MDC           | -        | M18        | 3.3V         | mdio_clk      | timer5           | uart5_txd     | uart3_rtsn    | mmc0_sdwp          | mmc1_clk            | mmc2_clk            | gpio0_1       |
| 142 |       | No Connect    |          |            |              |               |                  |               |               |                    |                     |                     |               |
| 143 | 335M  | MDIO          | -        | M17        | 3.3V         | mdio_data     | timer6           | uart5_rxd     | uart3_ctsn    | mmc0_sdc           | mmc1_cmd            | mmc2_cmd            | gpio0_0       |
| 144 | 335M  | MCASP0_AXR1   | -        | D13        | 3.3V         | mcasp0_axr1   | eQEP0_index      | mcasp1_axr0   | EMU3          | pr1_pru0_pru_r30_6 | pr1_pru0_pru_r31_6  | gpio3_20            |               |
| 145 | 335M  | RMII1_REFCLK  | -        | H18        | 3.3V         | rmii1_refclk  | xdma_event_intr2 | spi1_cs0      | uart5_txd     | mcasp1_axr3        | mmc0_pow            | mcasp1_ahclkx       | gpio0_29      |
| 146 | PWR   | GND           | -        | -          | -            |               |                  |               |               |                    |                     |                     |               |
| 147 | 335D  | I2C1_SDA      | -        | H17        | 3.3V         | I2C1_SDA      |                  |               |               |                    |                     |                     |               |
| 148 | 335M  | MCASP0_FSR    | -        | C13        | 3.3V         | mcasp0_fsr    | eQEP0B_in        | mcasp0_axr3   | mcasp1_fsx    | EMU2               | pr1_pru0_pru_r30_5  | pr1_pru0_pru_r31_5  | gpio3_19      |
| 149 | 335D  | I2C1_SCL      | -        | J15        | 3.3V         | I2C1_SCL      |                  |               |               |                    |                     |                     |               |
| 150 | 335M  | MCASP0_ACLKR  | -        | B12        | 3.3V         | mcasp0_aclkr  | eQEP0A_in        | mcasp0_axr2   | mcasp1_aclkx  | mmc0_sdwp          | pr1_pru0_pru_r30_4  | pr1_pru0_pru_r31_4  | gpio3_18      |
| 151 | 335M  | MMC0_CMD      | -        | G18        | VDDSH V4     | mmc0_cmd      | gpmc_a25         | uart3_rtsn    | uart2_txd     | dcan1_rx           | pr1_pru0_pru_r30_13 | pr1_pru0_pru_r31_13 | gpio2_31      |
| 152 | 335M  | MCASP0_ACLKX  | -        | A13        | 3.3V         | mcasp0_aclkx  | ehrpwm0A         | spi1_sclk     | mmc0_sdc      | pr1_pru0_pru_r30_0 | pr1_pru0_pru_r31_0  | gpio3_14            |               |
| 153 | 335M  | MMC0_CLK      | -        | G17        | VDDSH V4     | mmc0_clk      | gpmc_a24         | uart3_ctsn    | uart2_rxd     | dcan1_tx           | pr1_pru0_pru_r30_12 | pr1_pru0_pru_r31_12 | gpio2_30      |
| 154 | 335M  | MCASP0_AHCLKX | -        | A14        | 3.3V         | mcasp0_ahclkx | eQEP0_strobe     | mcasp0_axr3   | mcasp1_axr1   | EMU4               | pr1_pru0_pru_r30_7  | pr1_pru0_pru_r31_7  | gpio3_21      |
| 155 | 335M  | MMC0_DAT0     | -        | G16        | VDDSH V4     | mmc0_dat0     | gpmc_a23         | uart5_rtsn    | uart3_txd     | uart1_rin          | pr1_pru0_pru_r30_11 | pr1_pru0_pru_r31_11 | gpio2_29      |
| 156 | 335D  | EXTINT_N      | -        | B18        | 3.3V         | nNMI          |                  |               |               |                    |                     |                     |               |
| 157 | 335M  | MMC0_DAT1     | -        | G15        | VDDSH V4     | mmc0_dat1     | gpmc_a22         | uart5_ctsn    | uart3_rxd     | uart1_dtrn         | pr1_pru0_pru_r30_10 | pr1_pru0_pru_r31_10 | gpio2_28      |
| 158 | 335D  | WARMRST_N     | -        | A10        | 3.3V         | nRESETIN_OUT  |                  |               |               |                    |                     |                     |               |
| 159 | 335M  | MMC0_DAT2     | -        | F18        | VDDSH V4     | mmc0_dat2     | gpmc_a21         | uart4_rtsn    | timer6        | uart1_dsrn         | pr1_pru0_pru_r30_9  | pr1_pru0_pru_r31_9  | gpio2_27      |
| 160 | 335M  | EMU0          | -        | C14        | 3.3V         | EMU0          | gpio3_7          |               |               |                    |                     |                     |               |
| 161 | 335M  | MMC0_DAT3     | -        | F17        | VDDSH V4     | mmc0_dat3     | gpmc_a20         | uart4_ctsn    | timer5        | uart1_dcdn         | pr1_pru0_pru_r30_8  | pr1_pru0_pru_r31_8  | gpio2_26      |
| 162 | 335M  | EMU1          | -        | B14        | 3.3V         | EMU1          | gpio3_8          |               |               |                    |                     |                     |               |
| 163 | PWR   | GND           | -        | -          | -            |               |                  |               |               |                    |                     |                     |               |
| 164 | PWR   | GND           | -        | -          | -            |               |                  |               |               |                    |                     |                     |               |
| 165 | 335M  | UART0_CTSN    | -        | E18        | 3.3V         | uart0_ctsn    | uart4_rxd        | dcan1_tx      | I2C1_SDA      | spi1_d0            | timer7              | pr1_edc_sync0_out   | gpio1_8       |
| 166 | 335D  | TCK           | -        | A12        | 3.3V         | TCK           |                  |               |               |                    |                     |                     |               |
| 167 | 335M  | UART0_RTSN    | -        | E17        | 3.3V         | uart0_rtsn    | uart4_txd        | dcan1_rx      | I2C1_SCL      | spi1_d1            | spi1_cs0            | pr1_edc_sync1_out   | gpio1_9       |
| 168 | 335D  | TDI           | -        | B11        | 3.3V         | TDI           |                  |               |               |                    |                     |                     |               |
| 169 | 335M  | UART0_TXD     | -        | E16        | 3.3V         | uart0_txd     | spi1_cs1         | dcan0_rx      | I2C2_SCL      | eCAP1_in_PWM1_out  | pr1_pru1_pru_r30_15 | pr1_pru1_pru_r31_15 | gpio1_11      |
| 170 | 335D  | TDO           | -        | A11        | 3.3V         | TDO           |                  |               |               |                    |                     |                     |               |
| 171 | 335M  | UART0_RXD     | -        | E15        | 3.3V         | uart0_rxd     | spi1_cs0         | dcan0_tx      | I2C2_SDA      | eCAP2_in_PWM2_out  | pr1_pru1_pru_r30_14 | pr1_pru1_pru_r31_14 | gpio1_10      |
| 172 | 335D  | TMS           | -        | C11        | 3.3V         | TMS           |                  |               |               |                    |                     |                     |               |

| PIN | Class | Signal            | PMIC Pin | AM3359 Pin | Power Domain | Signal Option     | Signal Option | Signal Option     | Signal Option          | Signal Option       | Signal Option       | Signal Option       | Signal Option |
|-----|-------|-------------------|----------|------------|--------------|-------------------|---------------|-------------------|------------------------|---------------------|---------------------|---------------------|---------------|
| 173 | 335M  | UART1_RXD         | -        | D16        | 3.3V         | uart1_rxd         | mmc1_sdwp     | dcan1_tx          | I2C1_SDA               | pr1_uart0_rxd       | pr1_pru1_pru_r31_16 | gpio0_14            |               |
| 174 | 335D  | TRSTN             | -        | B10        | 3.3V         | nTRST             |               |                   |                        |                     |                     |                     |               |
| 175 | 335M  | UART1_TXD         | -        | D15        | 3.3V         | uart1_txd         | mmc2_sdwp     | dcan1_rx          | I2C1_SCL               | pr1_uart0_txd       | pr1_pru0_pru_r31_16 | gpio0_15            |               |
| 176 | PWR   | VREFN             | -        | A9         | 1.8V         | VREFN             |               |                   |                        |                     |                     |                     |               |
| 177 | 335M  | I2C0_SDA          | -        | C17        | 3.3V         | I2C0_SDA          | timer4        | uart2_ctsn        | eCAP2_in_PWM2_out      | gpio3_5             |                     |                     |               |
| 178 | PWR   | VREFP             | -        | B9         | 1.8V         | VREFP             |               |                   |                        |                     |                     |                     |               |
| 179 | 335M  | I2C0_SCL          | -        | C16        | 3.3V         | I2C0_SCL          | timer7        | uart2_rtsn        | eCAP1_in_PWM1_out      | gpio3_6             |                     |                     |               |
| 180 | 335D  | EXT_WAKEUP        | -        | C5         | 1.8V         | EXT_WAKEUP        |               |                   |                        |                     |                     |                     |               |
| 181 | PWR   | GND               | -        | -          | -            |                   |               |                   |                        |                     |                     |                     |               |
| 182 | PWR   | GND               | -        | -          | -            |                   |               |                   |                        |                     |                     |                     |               |
| 183 | 335M  | SPI0_D0           | -        | B17        | 3.3V         | spi0_d0           | uart2_txd     | I2C2_SCL          | ehrpwm0B               | pr1_uart0_rts_n     | pr1_edio_latch_in   | EMU3                | gpio0_3       |
| 184 | 335D  | AIN0              | -        | B6         | 1.8V         | AIN0              |               |                   |                        |                     |                     |                     |               |
| 185 | 335M  | SPI0_D1           | -        | B16        | 3.3V         | spi0_d1           | mmc1_sdwp     | I2C1_SDA          | ehrpwm0_tripzone_input | pr1_uart0_rxd       | pr1_edio_data_in0   | pr1_edio_data_out_0 | gpio0_4       |
| 186 | 335D  | AIN1              | -        | C7         | 1.8V         | AIN1              |               |                   |                        |                     |                     |                     |               |
| 187 | 335M  | SPI0_SCLK         | -        | A17        | 3.3V         | spi0_sclk         | uart2_rxd     | I2C2_SDA          | ehrpwm0A               | pr1_uart0_cts_n     | pr1_edio_sof        | EMU2                | gpio0_2       |
| 188 | 335D  | AIN2              | -        | B7         | 1.8V         | AIN2              |               |                   |                        |                     |                     |                     |               |
| 189 | 335M  | SPI0_CS1          | -        | C15        | 3.3V         | spi0_cs1          | uart3_rxd     | eCAP1_in_PWM1_out | mmc0_pow               | xdma_event_intr2    | mmc0_sdc            | EMU4                | gpio0_6       |
| 190 | 335D  | AIN3              | -        | A7         | 1.8V         | AIN3              |               |                   |                        |                     |                     |                     |               |
| 191 | 335M  | SPI0_CS0          | -        | A16        | 3.3V         | spi0_cs0          | mmc2_sdwp     | I2C1_SCL          | ehrpwm0_synci          | pr1_uart0_txd       | pr1_edio_data_in1   | pr1_edio_data_out_1 | gpio0_5       |
| 192 | 335D  | AIN4              | -        | C8         | 1.8V         | AIN4              |               |                   |                        |                     |                     |                     |               |
| 193 | 335D  | SPI1_SCLK         | -        | C18        | 3.3V         | spi1_sclk         |               |                   |                        |                     |                     |                     |               |
| 194 | 335D  | AIN5              | -        | B8         | 1.8V         | AIN5              |               |                   |                        |                     |                     |                     |               |
| 195 | 335D  | SPI1_D0_MOSI      | -        | B13        | 3.3V         | spi1_d0           |               |                   |                        |                     |                     |                     |               |
| 196 | 335D  | AIN6              | -        | A8         | 1.8V         | AIN6              |               |                   |                        |                     |                     |                     |               |
| 197 | 335D  | SPI1_D1_MISO      | -        | D12        | 3.3V         | spi1_d1           |               |                   |                        |                     |                     |                     |               |
| 198 | 335D  | AIN7              | -        | C9         | 1.8V         | AIN7              |               |                   |                        |                     |                     |                     |               |
| 199 | PWR   | GND               | -        | -          | -            |                   |               |                   |                        |                     |                     |                     |               |
| 200 | PWR   | GND               | -        | -          | -            |                   |               |                   |                        |                     |                     |                     |               |
| 201 | 335M  | XDMA_EVENT_I_NTR1 | -        | D14        | 3.3V         | xdma_event_i_ntr1 | tlckin        | clkout2           | timer7                 | pr1_pru0_pru_r31_16 | EMU3                | gpio0_20            |               |
| 202 | PWR   | AGND              | -        | -          | -            |                   |               |                   |                        |                     |                     |                     |               |
| 203 | 335M  | XDMA_EVENT_I_NTR0 | -        | A15        | 3.3V         | xdma_event_i_ntr0 | timer4        | clkout1           | spi1_cs1               | pr1_pru1_pru_r31_16 | EMU2                | gpio0_19            |               |
| 204 | PWR   | AGND              | -        | -          | -            |                   |               |                   |                        |                     |                     |                     |               |

Note 1: The PowerOn pin (32) has a pull-up resistor on the module so it can be left floating if user control is not desired.

Note 2: Please reference Table 2 for information on the maximum current supply of these voltage outputs.

## ELECTRICAL CHARACTERISTICS

Table 2: Electrical Characteristics

| Symbol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Parameter                                 | Conditions                  | Min | Typ  | Max  | Units |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------|-----|------|------|-------|
| <b>VIN</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Voltage supply, volt input.               |                             | 3.2 | 3.3  | 5.2  | Volts |
| <b>I<sub>VIO_3P3</sub></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Max current draw <sup>3</sup>             | 3.3 volt IO output          |     |      | 500  | mA    |
| <b>I<sub>VIO_1P8</sub></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Max current draw <sup>3</sup>             | 1.8 volt IO output          |     |      | 500  | mA    |
| <b>I<sub>3.3</sub></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Quiescent Current draw <sup>1</sup>       | 3.3 volt input, <b>DDR2</b> | -   | 240  | -    | mA    |
| <b>I<sub>3.3-max</sub></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Max current draw <sup>1</sup>             | 3.3 volt input, <b>DDR2</b> | -   | 520  | TBS  | mA    |
| <b>I<sub>3.3</sub></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Quiescent Current draw <sup>1</sup>       | 3.3 volt input, <b>DDR3</b> | -   | 300  | -    | mA    |
| <b>I<sub>3.3-max</sub></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Max current draw <sup>1</sup>             | 3.3 volt input, <b>DDR3</b> | -   | 520  | TBS  | mA    |
| <b>I<sub>VBackup</sub></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | VBACKUP Current draw <sup>2</sup>         | 3.3 VIN applied to SoM      | -   | <1   | 1    | uA    |
| <b>I<sub>VBackup-Active</sub></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | VBACKUP Current draw                      | PMIC RTC active             | -   | 10.2 | -    | uA    |
| <b>FCPU</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CPU internal clock Frequency (PLL output) |                             | 275 | 800  | 1000 | MHz   |
| <b>FEMIF</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | GPWC bus frequency                        |                             | -   |      | -    | MHz   |
| <ol style="list-style-type: none"> <li>1. Power utilization of the MityARM-335x is heavily dependent on end-user application. Major factors include: ARM CPU PLL configuration, CPU Utilization, and external DDR2/3 RAM utilization.</li> <li>2. VBACKUP current measurement limited by test equipment, current consumption was less than 1 micro amp.</li> <li>3. The MityARM-335x module provides both 1.8V (Pins 22, 24, 26 and 28) and 3.3V (Pins 21, 23, 25 and 27) output supplies from the module. These outputs are sequenced from the PMIC and the maximum power output specified should not be exceeded as these supplies also power the module itself.</li> </ol> |                                           |                             |     |      |      |       |

## ORDERING INFORMATION

The following table lists the standard module configurations. For shipping status, availability, and lead time of these or other configurations please contact your Critical Link representative.

Table 3: Standard Model Numbers

| Model          | ARM Speed | NOR | NAND Flash | RAM        | Operating Temp |
|----------------|-----------|-----|------------|------------|----------------|
| 3359-GX-226-RC | 720 MHz   | 8MB | 256MB      | 256MB DDR2 | 0°C to 70°C    |
| 3359-GX-226-RL | 720 MHz   | 8MB | 256MB      | 256MB DDR2 | -40°C to 70°C  |
| 3354-HX-X38-RI | 800 MHz   | N/A | 512MB      | 512MB DDR3 | -40°C to 85°C  |
| 3354-GX-X38-RC | 720 MHz   | N/A | 512MB      | 512MB DDR3 | 0°C to 70°C    |
| 3354-GX-XX7-RC | 720 MHz   | N/A | N/A        | 256MB DDR3 | 0°C to 70°C    |
| 3352-GX-X27-RC | 720 MHz   | N/A | 256MB      | 256MB DDR3 | 0°C to 70°C    |

Note: TI's AM335x Silicon Revision 1.0 has maximum frequency of 720MHz

## MECHANICAL INTERFACE

A mechanical outline of the MityARM-335x is illustrated in Figure 2, below.

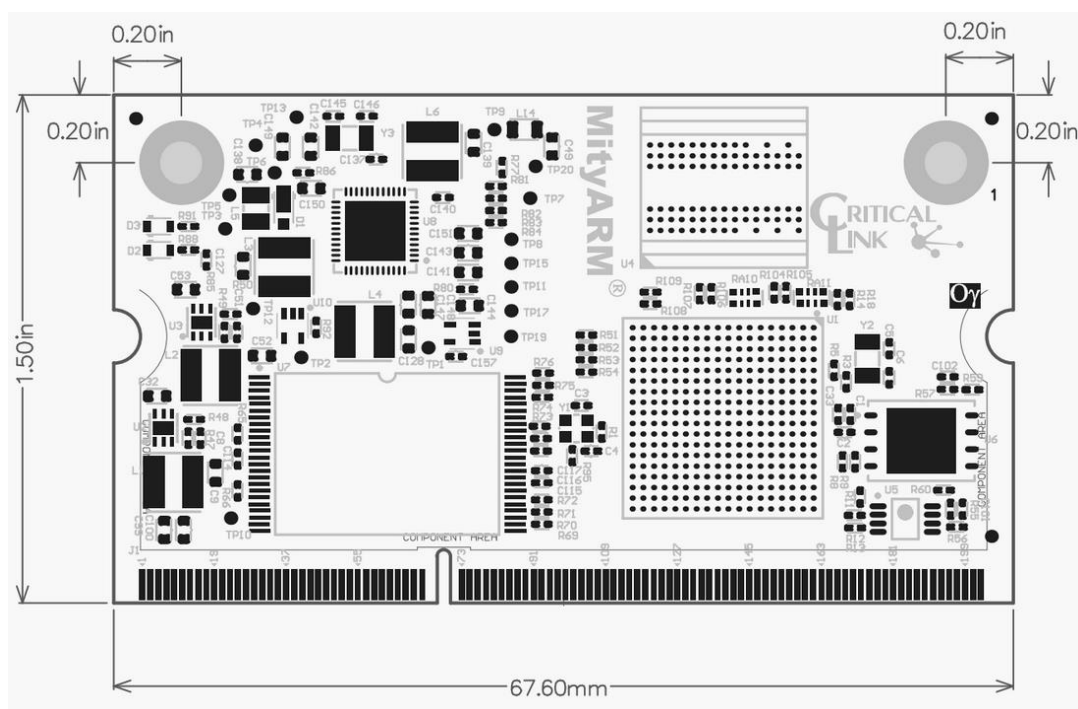


Figure 2 MityARM-335x Mechanical Outline

## REVISION HISTORY

| Date        | Change Description                                                                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1-NOV-2011  | Draft Spec.                                                                                                                                         |
| 16-NOV-2011 | Pre-release updates.                                                                                                                                |
| 3-DEC-2011  | Add mechanical outline.                                                                                                                             |
| 7-DEC-2011  | Supplemented pin descriptions.<br>Added External interfaces.<br>Added on board storage description<br>New block diagram showing third I2C interface |
| 13-DEC-2011 | Corrected pin list (pins 30,32,34,52)                                                                                                               |
| 8-FEB-2012  | Update photo, remove 3359-EX-227-RC from orderable parts list.                                                                                      |
| 20-MAR-2012 | Remove preliminary markings and update input voltage level.                                                                                         |
| 10-JUL-2012 | Part number correction and add MIL-STD-810F.                                                                                                        |
| 3-MAR-2013  | Change to MityARM-335x Processor Card and DDR3 support.                                                                                             |
| 27-MAR-2013 | Add notes about I2C interface availability and VIO output current maximums                                                                          |
| 8-JUL-2013  | Update maximum CPU speed to 1GHZ and update available module numbers.                                                                               |

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QQ          800077892  
Skype       ameyasales1 ameyasales2

➤ Customer Service :

Email       service@ameya360.com

➤ Partnership :

Tel          +86 (21) 64016692-8333  
Email       mkt@ameya360.com