



## **EM9287 Brief Information**

# 1 Specification

- iMX287-454MHz
- 128MB DDR2 / 128MB NANDFLASH
- 2 100M/10M Ethernet Ports
- 2 USB Host Ports
- 1 USB-OTG
- 32 GPIOs, 3.3V TTL, Input Mode on Power Up
- 7 UART ports:

"/dev/..."	Description
ttyS1	From imx287, RTS/CTS, 3.3V TTL Level
ttyS2	From imx287, 3-wire, RS232 Level $\pm 9V$
ttyS3	From imx287, 3-wire, 3.3V TTL Level
ttyS4	From imx287, 3-wire, 3.3V TTL Level
ttyS5	From imx287, 3-wire, 3.3V TTL Level, multiplexed with GPIO
ttyS6	Low speed UART, BR $\leq$ 19200bps, 8-bit only, 3-wire, multiplexed with GPIO
ttyS7	
ttyAM0	console, 115200bps、8-N-1

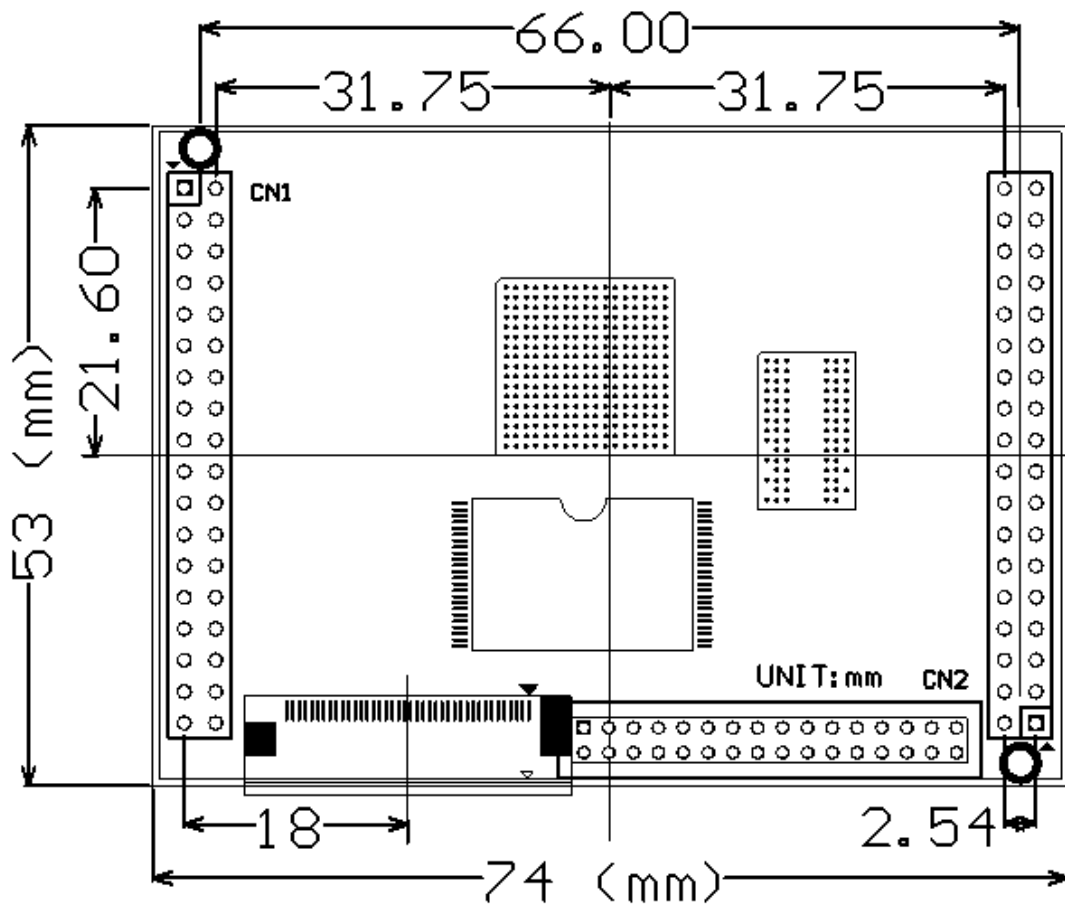
- 1 I2C, multiplexed with GPIO
- 1 SPI, multiplexed with GPIO
- 4 PWM Channels, multiplexed with GPIO
- 2 CAN, multiplexed with GPIO
- 2 Pair of Event In/Out, multiplexed with GPIO
- TFT LCD Interface
- 4-wire Touch Screen Ready
- 2 AD Channels from iMX28, 12-bit, single-end, range 0 – 3V
- Power Supply (Voltage):  $+5V \pm 5\%$

- Power Supply (Current)

Consumption	Eth Configure	CPU Load	Others
170mA	-	1%	No USB
200mA	+eth0	1%	No USB
230mA	+eth0, +eth1	1%	No USB
340mA	+eth0, +eth1	98%	No USB

- Temperature: -10°C - 60°C, (-40°C - 80°C option)
- Module Size: 74mm × 53mm
- 2 36-pin 0.1" Pitch Connectors for Normal Signals
- 1 FPC0.5-40Connectors for LCD and TSC Signals

## 2 Size and Pins



EM9287 Outline Size (2.54mm = 1")



## Signal Pins in CN1

Pin Name and Description	CN1		Pin Name and Description
	PIN	PIN	
LINK1n, enet0 Link, Active Low	1	2	SPEED1n, enet0 Speed, Active Low
TPTX1+, enet0 TX	3	4	TPTX1-, enet0 TX
TPRX1+, enet0 RX	5	6	TPRX1-, enet0 RX
VDD_CMT1, enet0 common	7	8	VDD_CMT2, enet1 common
TPTX2+, enet1 TX	9	10	TPTX2-, enet1TX
TPRX2+, enet1 RX	11	12	TPRX2-, enet1 RX
LINK2n, enet1 Link, Active Low	13	14	SPEED2n, enet1 Speed, Active Low
USB1_HD+, USB1 Host	15	16	USB1_HD-, USB1 Host
AIN1, Analog Input, 0 – 3V	17	18	AIN2, Analog Input, 0 – 3V
ttyS1_RXD	19	20	ttyS1_TXD
ttyS2_RXD, RS232 Level	21	22	ttyS2_TXD, RS232 Level
ttyS3_RXD	23	24	ttyS3_TXD
ttyS4_RXD	25	26	ttyS4_TXD
GPIO0 / ttyS1_CTS#, Active Low	27	28	GPIO1 / ttyS1_RTS#, Active Low
GPIO2 / ttyS3_CTS#, Active Low	29	30	GPIO3 / ttyS3_RTS#, Active Low
GPIO4 / ttyS4_CTS#, Active Low	31	32	GPIO5 / ttyS4_RTS#, Active Low
GPIO6 / PWM1	33	34	GPIO7 / PWM2
GPIO8 / CAN1_RXD	35	36	GPIO9 / CAN1_TXD

## Signal Pins in CN2

Pin Name and Description	CN2		Pin Name and Description
	PIN	PIN	
+5V, Power Input	1	2	+5V, Power Input
USB2_OTG_VBUS	3	4	RSTIN#, External Reset, Active Low
GND, Power Ground	5	6	GND, Power Ground
USB_OTG_D+	7	8	USB_OTG_D-
USB_OTG_UID	9	10	BATT3V
Console RX, RS232 Level	11	12	Console TX, RS232 Level
USB2_HD+, USB2 Host	13	14	USB2_HD-, USB2 Host
GPIO10 / ttyS5_RXD	15	16	GPIO11 / ttyS5_TXD
GPIO12 / ttyS6_RXD	17	18	GPIO13 / ttyS6_TXD
GPIO14 / ttyS7_RXD	19	20	GPIO15 / ttyS7_TXD
GPIO16 / NET0_EVENT_IN	21	22	GPIO17 / NET0_EVENT_OUT
GPIO18 / NET1_EVENT_IN	23	24	GPIO19 / NET1_EVENT_OUT
GPIO20 / PWM3	25	26	GPIO21 / PWM4
GPIO22 / I2C_SDA	27	28	GPIO23 / I2C_SCL
GPIO24	29	30	GPIO25
GPIO26	31	32	GPIO27
GPIO28 / SPI_MISO	33	34	GPIO29 / SPI_MOSI
GPIO30 / SPI_SCLK	35	36	GPIO31 / SPI_CS0N

## Signal Pins in CN3

PIN#	Pin Name	Dir	Signal Description
1	GND	P	Power Ground
2	DCLK	O	Stream Pixel Clock
3	HSYNC#	O	Horizontal Sync, Active Low
4	VSYNC#	O	Vertical Sync, Active Low
5	GND	P	Power Ground
6-11	<b>R0 – R5</b>	<b>O</b>	<b>6-bit Red, R0 = LSB, R5 = MSB</b>
12	GND	P	Power Ground
13-18	<b>G0 – G5</b>	<b>O</b>	<b>6-bit Green, G0 = LSB, G5 = MSB</b>
19	GND	P	Power Ground
20-25	<b>B0 – B5</b>	<b>O</b>	<b>6-bit Blue, B0 = LSB, B5 = MSB</b>
26	GND	P	Power Ground
27	DE	O	Display Enable
28-29	+3.3V	P	3.3V Output < 200mA
30	BLIGHT#	O	Back Light Control, Active Low
31	-	O	Reserved
32	GND	P	Power Ground
33-34	+5.0V	P	5VOutput < 200mA
35	GND	P	Power Ground
36	Xm	I	Touch Screen, X-axis differential input minus
37	Xp	I	Touch Screen, X-axis differential input plus
38	Ym	I	Touch Screen, Y-axis differential input minus
39	Yp	I	Touch Screen, Y-axis differential input plus
40	GND	P	Power Ground

### 3 Application

