

## EM9283 通用开发评估底板手册



EM9283

EM9283

FreeScale iMX283

Window CE6.0

Microsoft

Visual Studio 2005

VS2005

EM9283

EM9283

“ ”

EM9283

40mm×40mm

60 0.8mm

4mm

EM9283

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EM9283

1

RS232,RS485

GPRS

20

160 160

2

EM9283

40Pin TFT LCD

3.5 ,4.3

TFT LCD

EM9283

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EM9283

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PDF

PCB

Protel

EM9283

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B 404#

610041

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# 1

EM9283 “ ”

2 60

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EM9283 PDF PCB

Protel

EM9283 EM9283 USB

(1) 6 6 5

	RS232	RS485	TTL	
COM1	-	-	-	USB ActiveSync
COM2	-	-	√	RTS/CTS GPRS
COM3	√	-	-	RS232C
COM4	-	√	-	
COM5	-	-	√	GPIO6 – GPIO7
COM6	-	-	√	GPIO8 – GPIO9
DBGCOM	√	-	-	

USB (1): EM9283 USB-OTG EM9283

USB-OTB PC USB-HOST



## 1.1 EM9283

### EM9283

17

CN1	2 HT508	COM4 RS485
CN2	USB A	USB
CN3	USB mini-AB	USB OTG
CN4	DB9	COM3 3 RS232C
CN5	DB9	COM_DBG 3 RS232C
CN6	2 2.5mm	3.7V
CN7	DC Power Jack	DC 5V
CN8	Micro SD	SD
CN9	IDC10	SDIO
CN10	IDC10	(AIN1,AIN2)
CN11	IDC10	5 5
CN12	40 FPC0.5mm	TFT LCD 4
CN13	IDC20	IO GPIO0~GPIO15
CN14	IDC10	COM2 3 TTL
CN15	IDC10	COM5 3 TTL
CN16	IDC10	COM6 3 TTL
CN17	IDC10	PWM PWM1~PWM4

1.

1#

2. IDC 2.54mm



## 1.2 EM9283

EM9283

EM9283

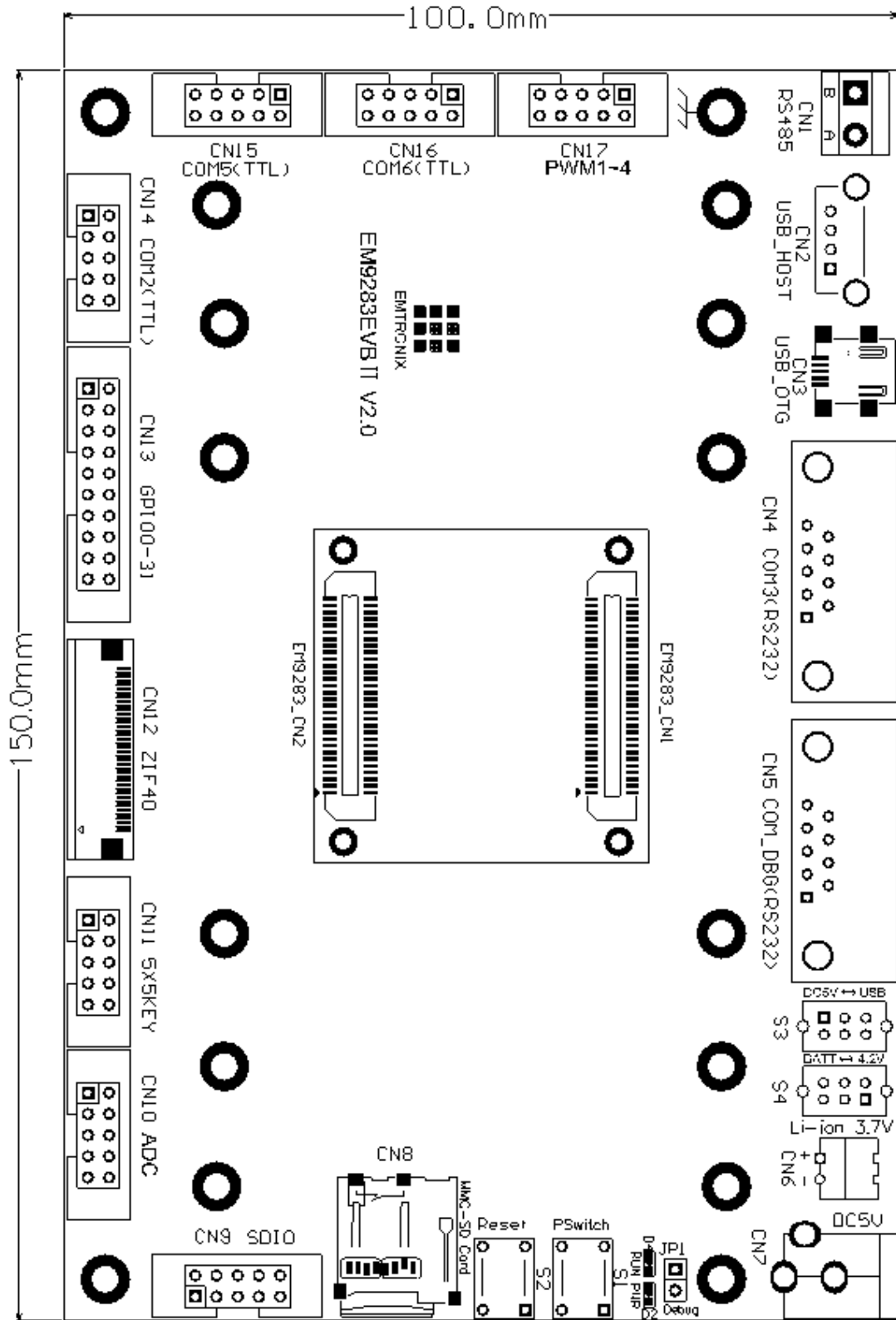
60 0.8mm

1

EM9283_CN1	60 0.8mm B2B (AXN360038S)	EM9283 CN1
EM9283_CN2	60 0.8mm B2B (AXN360038S)	EM9283 CN2
JP1	2 SIP	/
S1		
S2		
S3		5V USB
S4		



### 1.3



1 EM9283EVB





## 2

EM9283

1#

1#

#

## 2.1 TFT LCD

EM9283

TFT

LCD

CN12

LCD

CN12

TFT

PIN#			
1	GND	P	
2	DCLK	O	Stream Pixel Clock
3	HSYNC#	O	
4	VSYNC#	O	
5	GND	P	
6-11	R0 – R5	O	6-bit R0 LSB R5 MSB
12	GND	P	
13-18	G0 – G5	O	6-bit G0 LSB G5 MSB
19	GND	P	
20-25	B0 – B5	O	6-bit B0 LSB B5 MSB
26	GND	P	
27	DE	O	
28-29	+3.3V	P	3.3V
30	BLIGHT#	O	PWM
31	-		
32	GND	P	
33-34	+5.0V	P	5V



35	GND	P		
36	Xm	I	X	-
37	Xp	I	X	+
38	Ym	I	Y	-
39	Yp	I	Y	+
40	GND	P		

## 2.2 5 5

EM9283

CN11

3 3 5 5

EM9283

CN11

		PIN#	PIN#		
KOUT0		1	2	KEYIN0	
KOUT1		3	4	KEYIN1	
KOUT2		5	6	KEYIN2	
KOUT3	GPIO17	7	8	KEYIN3	GPIO16
KOUT4	GPIO 19	9	10	KEYIN4	GPIO18

## 2.3 RS232C

EM9283

CN4 CN5 RS232C

DB9

CN4 COM3

	PIN#	PIN#	
	1	6	
COM3_RX	2	7	
COM3_TX	3	8	
	4	9	
GND	5		



## CN5 COM\_DBG

	PIN#	PIN#	
	1	6	
COMDBG_RX	2	7	
COMDBG_TX	3	8	
	4	9	
GND	5		

CN5

EM9283

PC

115200 8-N-1

EM9283

## 2.4 TTL

EM9283

CN14

9

TTL

COM2

		PIN#	PIN#		
DCD2#	GPIO5	1	2	DSR2#	GPIO2
RXD2		3	4	RTS2#	GPIO1
TXD2		5	6	CTS2#	GPIO0
DTR2#	GPIO3	7	8	RI2#	GPIO4
GND		9	10	VCC	+3.3V

CN14

COM2

3.3V

TTL

COM2

GPRS 3G

3

RXD/TXD/GND

RTS2# CTS2#

Modem

modem

GPIO

CN15 CN16

3.3V TTL

COM5

COM6

3



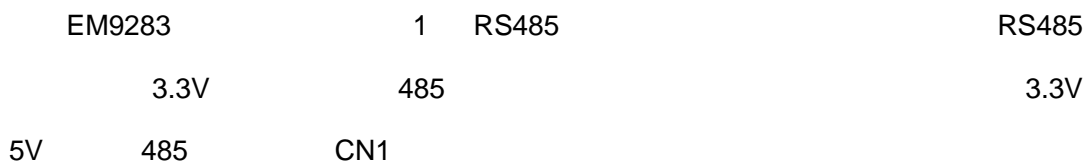
CN15

	PIN#	PIN#	
	1	2	
RXD5 GPIO6	3	4	
TXD5 GPIO7	5	6	
	7	8	
GND	9	10	VCC +3.3V

CN16

	PIN#	PIN#	
	1	2	
RXD6 GPIO8	3	4	
TXD6 GPIO9	5	6	
	7	8	
GND	9	10	VCC +3.3V

## 2.5 RS485



PIN#				
1	DATA-	COM4	RS485	-
2	DATA+	COM4	RS485	+

## 2.6 USB





CN2 USB A

PIN#			
1	+5V	USB	500mA
2	USB_HD-	USB	-
3	USB_HD+	USB	+
4	GND		

## 2.7 USB OTG

CN3 USB OTG ActiveSync  
 USB EM9283 USB  
 OTG EM9283  
 CN3 USB OTG miniAB

PIN#			
1	USB		500mA
2	USB_DD-	USB	-
3	USB_DD+	USB	+
4	USB_ID	USB	
5	GND		

EM9283 USB OTG OTG USB PC  
 USB USB OTG  
 EM9283 Host Device OTG USB  
 U CN3 miniB  
 USB\_ID EM9283 USB OTG Host

## 2.8 A/D

EM9283 12bit AD CN10  
 CN10



		PIN#	PIN#	
		1	2	
AIN0	0	3	4	
AIN1	1	5	6	
		7	8	
GND		9	10	VCC +3.3V

## 2.9 SDIO

EM9283 Micro SD CN8 Micro SD (TF  
 ) SD SDIO SD  
 IDC CN9 EM9283 SD GPIO  
 SD SDIO CN9

		PIN#	PIN#	
SD_DET	GPIO20	1	2	SD_PWR GPIO21
SD_CMD	GPIO22	3	4	SD_CLK GPIO23
SD_D0	GPIO24	5	6	SD_D1 GPIO25
SD_D2	GPIO26	7	8	SD_D3 GPIO27
GND		9	10	VCC +3.3V

## 2.10 PWM

CN17 PWM EM9283 4 PWM

		PIN#	PIN#	
PWM1	GPIO28	1	2	PWM2 GPIO29
PWM3	GPIO30	3	4	PWM4 GPIO31
GND		9	10	VCC +3.3V



## 2.11

CN6

CN6

EM9283

CN6

PIN#		
1	VCC	+3.7V
2	GND	

EM9283

EM9283

## 2.12

CN7

EM9283

PIN#		
1	VCC	+5V
2	GND	

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EM9283

EM9283



### 3 EM9283

EM9283\_CN1    EM9283\_CN2    60

EM9283    CN1    CN2

EM9283\_CN1

	CN1		
	PIN	PIN	
+5V	1	2	+5V
+5V	3	4	+5V
+5V	5	6	+5V
GND	7	8	GND
GND	9	10	GND
GND	11	12	GND
LI-ION_BATT	13	14	LI-ION_BATT
LI-ION_BATT	15	16	LI-ION_BATT
VDD4P2 4.2V	17	18	VDD4P2 4.2V
VDD4P2 4.2V	19	20	VDD4P2 4.2V
	21	22	VDDIO_3V3 3.3V
	23	24	VDDIO_3V3 3.3V
PSWITCH	25	26	RSTIN#
USB0_OTG_ID	27	28	DBGSL#
USB0_OTG_DP	29	30	USB0_OTG_VBUS
USB0_OTG_DM	31	32	USB0_OTG_VBUS
USB1_HDP	33	34	USB1_VBUS
USB1_HDM	35	36	USB1_VBUS
DBG_RXD	37	38	DBG_TXD
RXD2 COM2	39	40	TXD2 COM2
GPIO0 / CTS2#	41	42	GPIO1 / RTS2#
GPIO2 / DSR2#	43	44	GPIO3 / DTR2#
GPIO4 / RI2#	45	46	GPIO5 / DCD2#
RXD3 COM3	47	48	TXD3 COM3
RXD4 COM4	49	50	TXD4 COM4
GPIO6 / RXD5	51	52	GPIO7 / TXD5
GPIO8 / RXD6	53	54	GPIO9 / TXD6
GPIO10 / I2C_SCL	55	56	GPIO11 / I2C_SDA
GPIO12 / SPI_MISO	57	58	GPIO13 / SPI_MOSI
GPIO14 / SPI_SCLK	59	60	GPIO15 / SPI_CS0N





## EM9283\_CN2

			CN2				
			PIN	PIN			
XM	X	-	1	2	YM	Y	-
XP	X	+	3	4	YP	Y	+
AIN1			5	6	AIN0		
GND			7	8	GND		
LCD_B2	LSB		9	10	LCD_B3		
LCD_B4			11	12	LCD_B5		
LCD_B6			13	14	LCD_B7	MSB	
LCD_G2	LSB		15	16	LCD_G3		
LCD_G4			17	18	LCD_G5		
LCD_G6			19	20	LCD_G7	MSB	
LCD_R2	LSB		21	22	LCD_R3		
LCD_R4			23	24	LCD_R5		
LCD_R6			25	26	LCD_R7	MSB	
GND			27	28	GND		
LCD_VSYNC	LCD		29	30	LCD_HSYNC	LCD	
LCD_DOTCLK	LCD		31	32	LCD_DEN	LCD	
GND			33	34	GND		
			35	36			
LCD_PWR	LCD		37	38	LCD_BKLIGHT	LCD	
GPIO31 / PWM4			39	40	GPIO30 / PWM3		
GPIO29 / PWM2			41	42	GPIO28 / PWM1		
GPIO27 / SD_D3			43	44	GPIO26 / SD_D2		
GPIO25 / SD_D1			45	46	GPIO24 / SD_D0		
GPIO23 / SD_CLK			47	48	GPIO22 / SD_CMD		
GPIO21 / SD_PWR			49	50	GPIO20 / SD_DET		
GPIO19 / KEYOUT4			51	52	GPIO18 / KEYIN4		
GPIO17 / KEYOUT3			53	54	GPIO16 / KEYIN3		
KEYOUT2			55	56	KEYIN2		
KEYOUT1			57	58	KEYIN1		
KEYOUT0			59	60	KEYIN0		



# 4

## 4.1

EM9283

JP1

JP1

JP1

## 4.2

EM9283

LED

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D2	PWR	5V USB
D4	RUN	
D5	RXD4	RS485
D6	TXD4	RS485

## 4.3

EM9283

S2

S3

S1	PSwitch	Power  Power 2
S2	Reset	5V USB EM9283 Reset Reset



## 4.4

S3	USB USB_OTG 5V USB DC5V
S4	4.2V 4.2V 3.7V 4.2V DCDC BATT CN6



# 5

1. EM9283 USB 5V +5V/1A 5V EM9283

2. EM9283

3. EM9283 4  $\Phi 3$   
6  $\Phi 3$   
4.3 3.5 TFT LCD

4. EM9283 4  $\Phi 2$  EM9283

5. PDF PCB Protel

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V1.0	EM9283EVBII V2.0	EM9283	2012-11