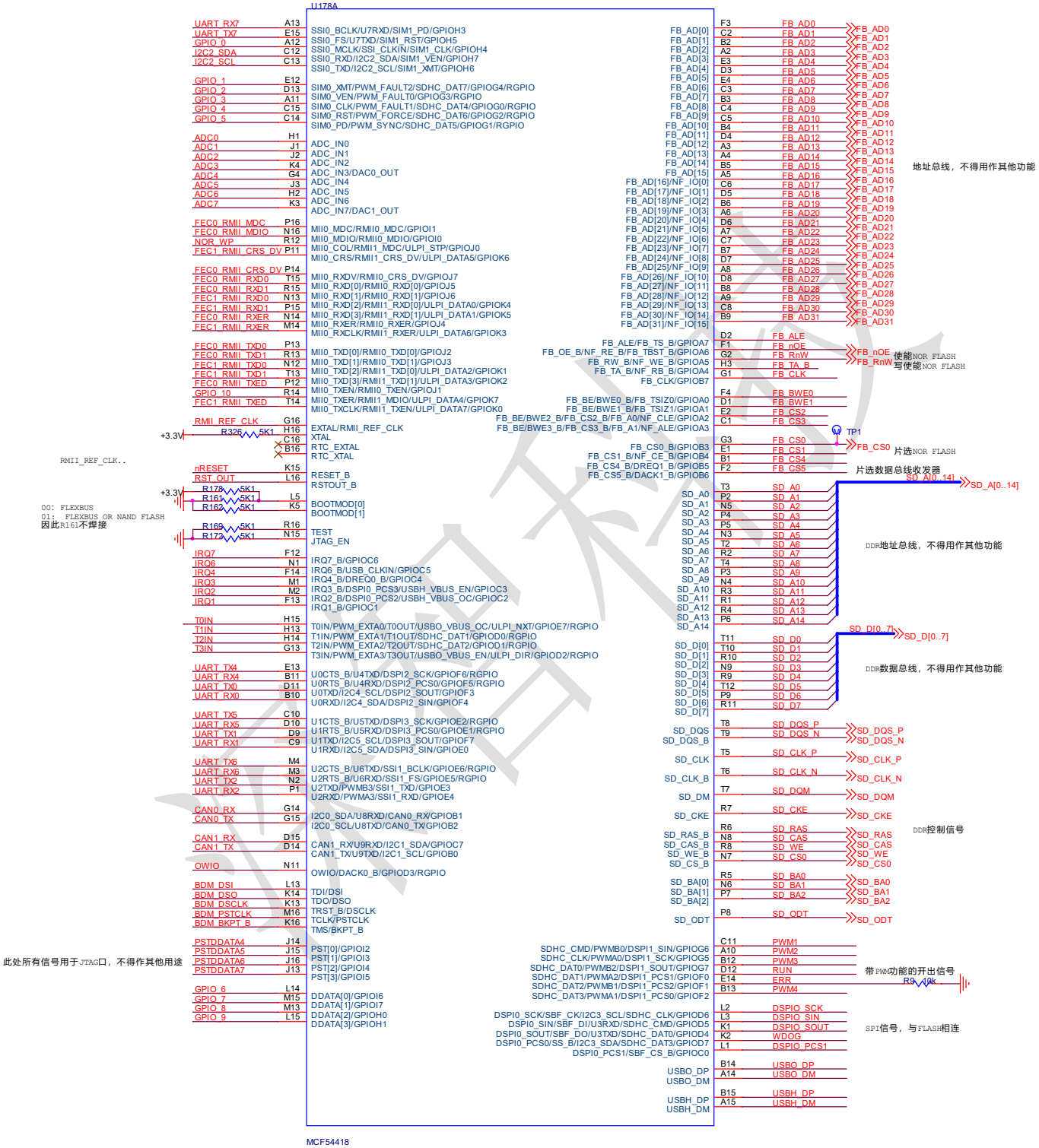
MCF54418核心板说明书

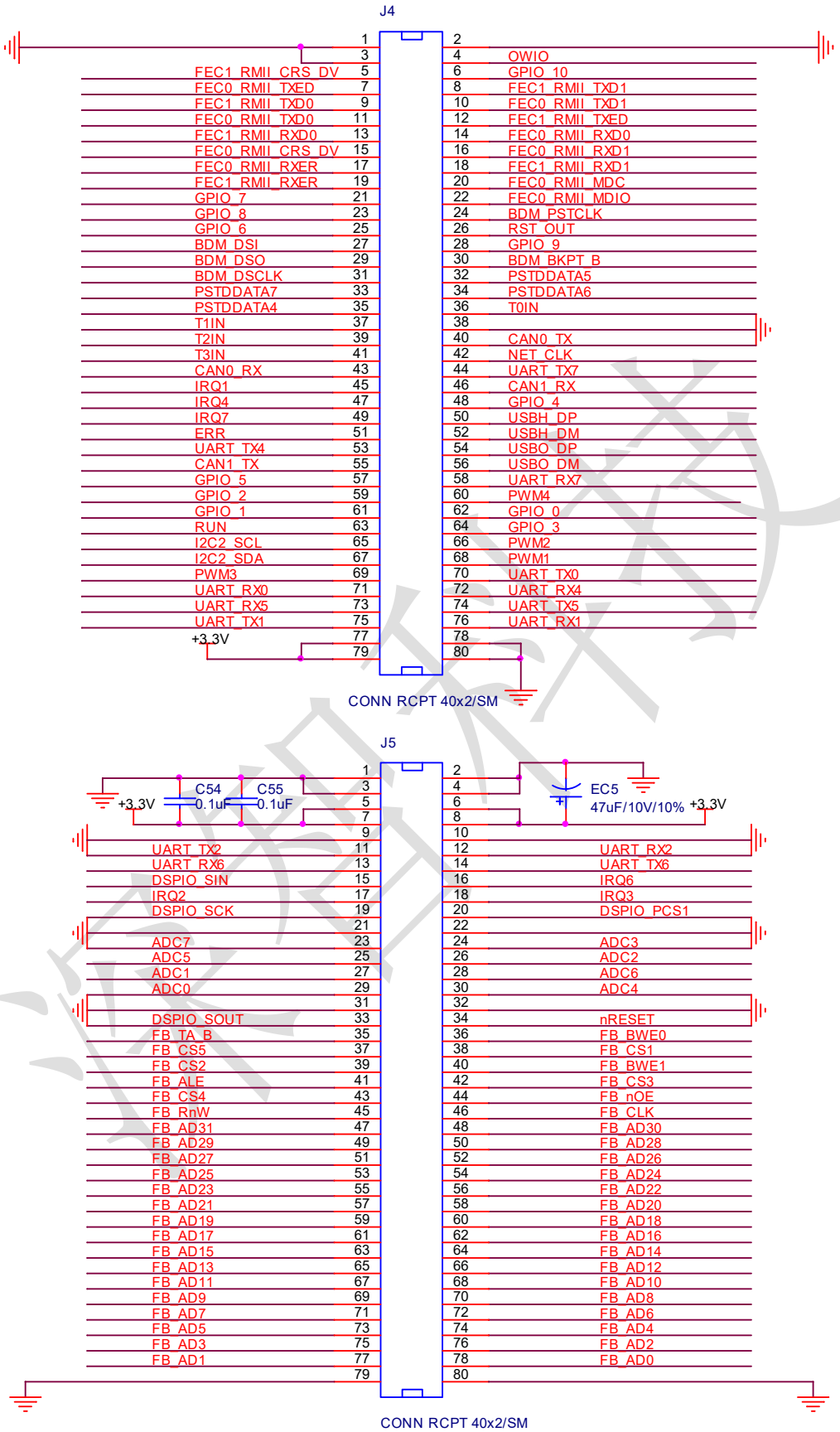
概述

MCF54418 核心板由 Freescale 的 ColdFire V4 Embedded Processors MCF54418 为核心，主频 250MHz，外置 128M DDR2 内存 MT47H128M8CF-25E IT:H，128M NORFLASH JS28F128J3D75 TSOP56，看门狗电路，可外接 PHY 芯片 DP83849IFVS、DM9000A 以太网芯片可扩展三路以太网通讯。

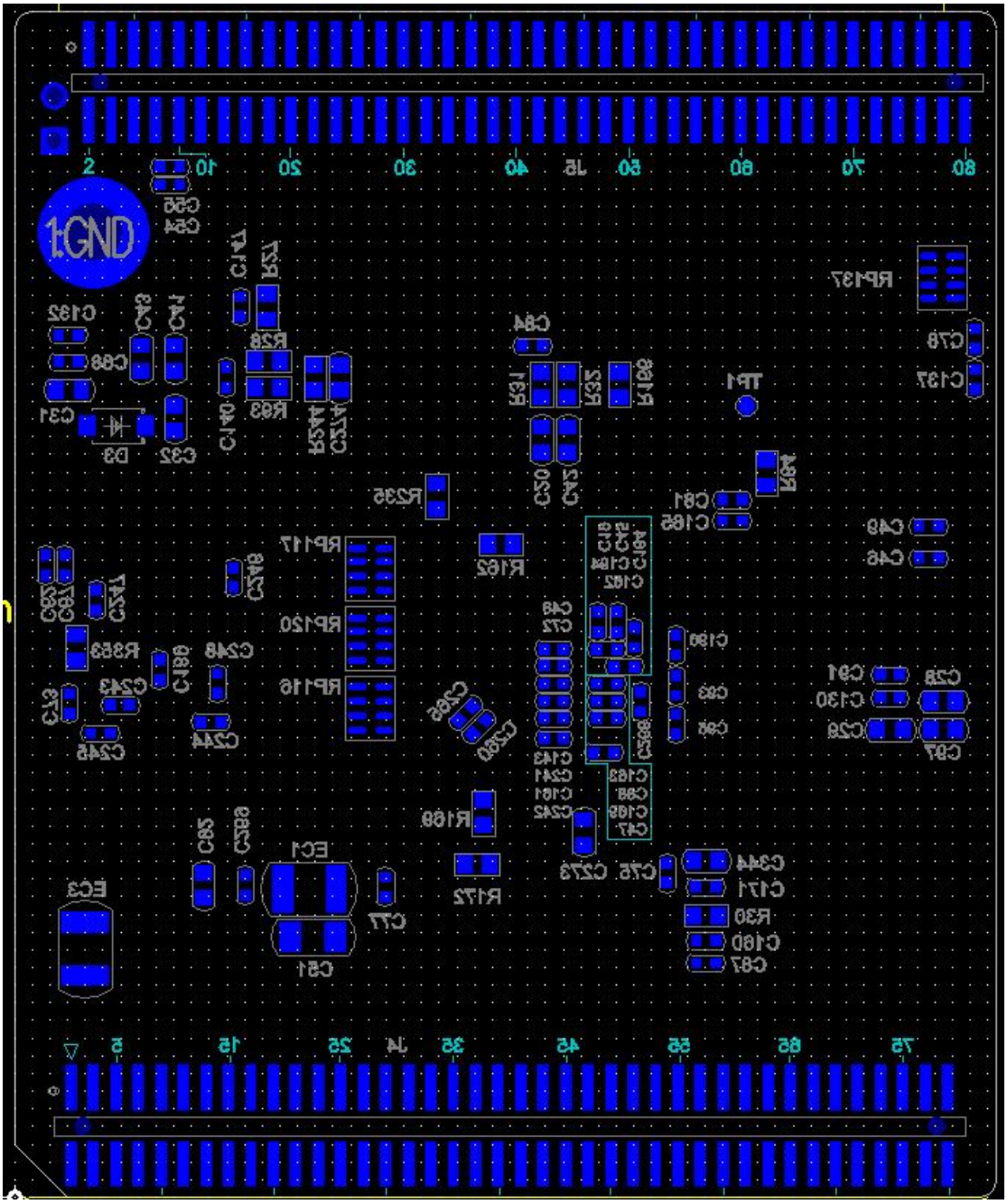
- Version 4 ColdFire® Core with EMAC and MMU
- Up to 385 Dhrystone 2.1 MIPS @ 250 MHz
- 8 Kbytes instruction cache and 8 Kbytes data cache
- 64 Kbytes internal SRAM dual-ported to processor local bus and other crossbar switch masters
- 64-channel DMA controller
- SDRAM controller supporting full-speed operation from a single x8 DDR2 component up to 250 MHz
- USB 2.0 host/device/On-the-Go controller
- Dual 10/100 Ethernet MACs with hardware CRC checking/generation, IEEE 1588-2002 support, and optional Ethernet switch
- Two FlexCAN modules
- Four 32-bit timers with DMA support
- Four programmable interrupt timers
- 8-channel, 16-bit motor control PWM timer
- Dual 12-bit ADCs with shared input channels and multiple conversion trigger sources
- Up to ten UARTs with single-wire mode support

1、接口图


U17A
MCF54418
地址总线，不得用作其他功能
使能NOR FLASH
写使能NOR FLASH
片选NOR FLASH
片选数据总线收发器
DDR地址总线，不得用作其他功能
DDR数据总线，不得用作其他功能
DDR控制信号
带PWM功能的开出信号
SPI信号，与FLASH相连
此处所有信号用于JTAG口，不得作其他用途
RMII_REF_CLK..
00: FLEXBUS
01: FLEXBUS OR NAND FLASH
因此R161不焊接


J4
1
3
FEC1_RMII_CRS_DV 5
FEC0_RMII_TXED 7
FEC1_RMII_TXD0 9
FEC0_RMII_TXD0 11
FEC1_RMII_RXD0 13
FEC0_RMII_CRS_DV 15
FEC0_RMII_RXER 17
FEC1_RMII_RXER 19
GPIO_7 21
GPIO_8 23
GPIO_6 25
BDM_DSI 27
BDM_DSO 29
BDM_DSCLK 31
PSTDDATA7 33
PSTDDATA4 35
T1IN 37
T2IN 39
T3IN 41
CAN0_RX 43
IRQ1 45
IRQ4 47
IRQ7 49
ERR 51
UART_TX4 53
CAN1_TX 55
GPIO_5 57
GPIO_2 59
GPIO_1 61
RUN 63
I2C2_SCL 65
I2C2_SDA 67
PWM3 69
UART_RX0 71
UART_RX5 73
UART_TX1 75
+3.3V 77
79
2
4 OWIO
6 GPIO_10
8 FEC1_RMII_TXD1
10 FEC0_RMII_TXD1
12 FEC1_RMII_TXED
14 FEC0_RMII_RXD0
16 FEC0_RMII_RXD1
18 FEC1_RMII_RXD1
20 FEC0_RMII_MDC
22 FEC0_RMII_MDIO
24 BDM_PSTCLK
26 RST_OUT
28 GPIO_9
30 BDM_BKPT_B
32 PSTDDATA5
34 PSTDDATA6
36 T0IN
38
40 CAN0_TX
42 NET_CLK
44 UART_TX7
46 CAN1_RX
48 GPIO_4
50 USBH_DP
52 USBH_DM
54 USBO_DP
56 USBO_DM
58 UART_RX7
60 PWM4
62 GPIO_0
64 GPIO_3
66 PWM2
68 PWM1
70 UART_TX0
72 UART_RX4
74 UART_TX5
76 UART_RX1
78
80
CONN RCPT 40x2/SM
J5
+3.3V
C54 0.1uF
C55 0.1uF
EC5 47uF/10V/10% +3.3V
UART_TX2 11
UART_RX6 13
DSPIO_SIN 15
IRQ2 17
DSPIO_SCK 19
21
ADC7 23
ADC5 25
ADC1 27
ADC0 29
31
DSPIO_SOUT 33
FB_TA_B 35
FB_CS5 37
FB_CS2 39
FB_ALE 41
FB_CS4 43
FB_RnW 45
FB_AD31 47
FB_AD29 49
FB_AD27 51
FB_AD25 53
FB_AD23 55
FB_AD21 57
FB_AD19 59
FB_AD17 61
FB_AD15 63
FB_AD13 65
FB_AD11 67
FB_AD9 69
FB_AD7 71
FB_AD5 73
FB_AD3 75
FB_AD1 77
79
2
4
6
8
10
12 UART_RX2
14 UART_TX6
16 IRQ6
18 IRQ3
20 DSPIO_PCS1
22
24 ADC3
26 ADC2
28 ADC6
30 ADC4
32
34 nRESET
36 FB_BWE0
38 FB_CS1
40 FB_BWE1
42 FB_CS3
44 FB_nOE
46 FB_CLK
48 FB_AD30
50 FB_AD28
52 FB_AD26
54 FB_AD24
56 FB_AD22
58 FB_AD20
60 FB_AD18
62 FB_AD16
64 FB_AD14
66 FB_AD12
68 FB_AD10
70 FB_AD8
72 FB_AD6
74 FB_AD4
76 FB_AD2
78 FB_AD0
80
CONN RCPT 40x2/SM

2、外形图



外形尺寸
55.5*67mm

3、引脚功能说明

J4 排针引脚定义

1	GND	地	2	GND	地
3	GND	地	4	OWIO	接 DS18B20
5	FEC1_RMII_CRS_DV		6	GPIO_10	
7	FEC0_RMII_TXED		8	FEC1_RMII_TXD1	
9	FEC1_RMII_TXD0		10	FEC0_RMII_TXD1	
11	FEC0_RMII_TXD0		12	FEC1_RMII_TXED	
13	FEC1_RMII_RXD0		14	FEC0_RMII_RXD0	
15	FEC0_RMII_CRS_DV		16	FEC0_RMII_RXD1	
17	FEC0_RMII_RXER		18	FEC1_RMII_RXD1	
19	FEC1_RMII_RXER		20	FEC0_RMII_MDC	
21	GPIO_7		22	FEC0_RMII_MDIO	
23	GPIO_8		24	BDM_PSTCLK	
25	GPIO_6		26	RST_OUT	
27	BDM_DSI		28	GPIO_9	
29	BDM_DSO		30	BDM_BKPT_B	
31	BDM_DSCLK		32	PSTDDATA5	
33	PSTDDATA7		34	PSTDDATA6	
35	PSTDDATA4		36	T0IN	
37	T1IN		38	GND	
39	T2IN		40	CAN0_TX	
41	T3IN		42	NET_CLK	
43	CAN0_RX		44	UART_TX7	
45	IRQ1		46	CAN1_RX	
47	IRQ4		48	GPIO_4	
49	IRQ7		50	USBH_DP	
51	ERR		52	USBH_DM	
53	UART_TX4		54	USBO_DP	
55	CAN1_TX		56	USBO_DM	
57	GPIO_5		58	UART_RX7	
59	GPIO_2		60	PWM4	
61	GPIO_1		62	GPIO_0	
63	RUN		64	GPIO_3	
65	I2C2_SCL		66	PWM2	
67	I2C2_SDA		68	PWM1	
69	PWM3		70	UART_TX0	
71	UART_RX0		72	UART_RX4	
73	UART_RX5		74	UART_TX5	
75	UART_TX1		76	UART_RX1	
77	+3.3V		78	GND	
79	+3.3V		80	GND	

J5 排针引脚定义

1	81	GND		2	82	GND	
3	83	GND		4	84	GND	
5	85	+3.3V		6	86	+3.3V	
7	87	+3.3V		8	88	+3.3V	
9	89	GND		10	90	GND	
11	91	UART_TX2		12	92	UART_RX2	
13	93	UART_RX6		14	94	UART_TX6	
15	95	DSPIO_SIN		16	96	IRQ6	
17	97	IRQ2		18	98	IRQ3	
19	99	DSPIO_SCK		20	100	DSPIO_PCS1	
21	101	GND		22	102	GND	
23	103	ADC7		24	104	ADC3	
25	105	ADC5		26	106	ADC2	
27	107	ADC1		28	108	ADC6	
29	109	ADC0		30	110	ADC4	
31	111	GND		32	112	GND	
33	113	DSPIO_SOUT		34	114	nRESET	
35	115	FB_TA_B		36	116	FB_BWE0	
37	117	FB_CS5		38	118	FB_CS1	
39	119	FB_CS2		40	120	FB_BWE1	
41	121	FB_ALE		42	122	FB_CS3	
43	123	FB_CS4		44	124	FB_nOE	
45	125	FB_RnW		46	126	FB_CLK	
47	127	FB_AD31		48	128	FB_AD30	
49	129	FB_AD29		50	130	FB_AD28	
51	131	FB_AD27		52	132	FB_AD26	
53	133	FB_AD25		54	134	FB_AD24	
55	135	FB_AD23		56	136	FB_AD22	
57	137	FB_AD21		58	138	FB_AD20	
59	139	FB_AD19		60	140	FB_AD18	
61	141	FB_AD17		62	142	FB_AD16	
63	143	FB_AD15		64	144	FB_AD14	
65	145	FB_AD13		66	146	FB_AD12	
67	147	FB_AD11		68	148	FB_AD10	
69	149	FB_AD9		70	150	FB_AD8	
71	151	FB_AD7		72	152	FB_AD6	
73	153	FB_AD5		74	154	FB_AD4	
75	155	FB_AD3		76	156	FB_AD2	
77	157	FB_AD1		78	158	FB_AD0	
79	159	GND		80	160	GND	