

SoM Pinout: F29H85x SOM (rev A)

MCU SoM Standard Revision: 0.81

Connector J1

MCU Function	MCU Pin	SoM Standard	Pin	Pin	SoM Standard	MCU Pin	MCU Function
EPWM4_B	GPIO28	PWMB	1	2	PWMB	GPIO88	EPWM14_B
EPWM4_A	GPIO27	PWMA	3	4	PWMA	GPIO26	EPWM14_A
EPWM3_B	GPIO5	PWM3B (b,d)	5	6	PWMB	GPIO21	EPWM11_B
EPWM3_A	GPIO4	PWM3A (b,d)	7	8	PWMA	GPIO20	EPWM11_A
EPWM2_B	GPIO3	PWM2B (b,d)	9	10	PWMB	GPIO17	EPWM9_B
EPWM2_A	GPIO2	PWM2A (b,d)	11	12	PWMA	GPIO100	EPWM9_A
EPWM1_B	GPIO1	PWM1B (b,d)	13	14	PWMB	GPIO13	EPWM7_B
EPWM1_A	GPIO0	PWM1A (b,d)	15	16	PWMA	GPIO12	EPWM7_A
-	GND	GND	17	18	SVD_IN (b)	SVD0	-
TDI	GPIO222	JTAG-TDI (a,b)	19	20	SVD_IN (b)	SVD0	-
TDO	GPIO223	JTAG-TDO (a,b)	21	22	JTAG-TCK (a,b)	TCK	TCK
-	EEPROM_I2CSCL	JTAG_I2CSCL (a,b)	23	24	JTAG-TMS (a,b)	TMS	TMS
-	EEPROM_I2CSDA	JTAG_I2CSDA (a,b)	25	26	15W_PD (b,e)	-	-
-	-	LPM_WAKE	27	28	3V3_OUT/SOM_DETECT (a,b)	3V3_OUT	-
XRSn	XRSn	XRSn	29	30	PMIC_WAKE1	PMIC	PMIC_WAKE1
UARTA_TX	GPIO42	UARTTX (a,b)	31	32	ERRORSTS/PMIC_SAFE_OUT1	PMIC	PMIC_SAFE_OUT1
UARTA_RX	GPIO43	UARTRX (a,b)	33	34	SVD_OUT_CAN	SVD0_OUT_CAN	-
MCAND_TX/LINB_TX	GPIO67	CANTX/LINTX	35	36	CANTX	GPIO46	MCANE_TX
MCAND_RX/LINB_RX	GPIO68	CANRX/LINRX	37	38	CANRX	GPIO47	MCANE_RX
SPIA_PTE	GPIO61	SPIPTE	39	40	ENCODER4/QEPH	B8/GPIO232/CMP11HP/CMP4P	OUTPUTXBAR3
SPIA_CLK	GPIO60	SPICLK (c)	41	42	ENCODER3/QEP5	GPIO35	OUTPUTXBAR12
SPIA_POCI	GPIO59	SPIPOCI (c)	43	44	ENCODER2/QEPB	GPIO98	OUTPUTXBAR16
SPIA_PICO	GPIO58	SPIPICO (c)	45	46	ENCODER1/QEPA	GPIO97	OUTPUTXBAR15
-	Rsvd	Rsv	47	48	SD2-C	E16/CMP6P/AIO212 (3)	SD2_C4
FSITXA_CLK	GPIO51	FSITX-CLK	49	50	SD2-D	E17/CMP6P/AIO213 (3)	SD2_D4
FSITXA_D1	GPIO50	FSITX-D1	51	52	SD2-D	E13/CMP11P/AIO211 (3)	SD2_D3
FSITXA_D0	GPIO49	FSITX-D0	53	54	SD3-C	C10/CMP8HP/AIO186 (3)	SD1_C1
FSIRXA_CLK	GPIO105	FSIRX-CLK	55	56	SD1-D	D6/B30/GPIO242/CMP1HP/CMP1HN	SD1_D4
FSIRXA_D1	GPIO53	FSIRX-D1	57	58	SD1-D	C8/GPIO238/CMP6HP/CMP12P	SD1_D3
FSIRXA_D0	GPIO103	FSIRX-D0	59	60	SD1-D	E4/A28/GPIO246/CMP8	SD1_D1
J1 GND				J1 GND			
I2CA_SCL	GPIO33	I2CSCL	61	62	SENT/PMIBUS_SDA (e)	GPIO22	PMBUS_A_SDA
I2CA_SDA	GPIO32	I2CSDA	63	64	SENT/PMIBUS_SCL (e)	GPIO10	PMBUS_A_SCL
OUTPUTXBAR1	GPIO34	ENCODER4/QEPI	65	66	SENT/PMIBUS_ALERT (e)	GPIO18	PMBUS_A_ALERT
OUTPUTXBAR2	GPIO37	ENCODER3/QEP5	67	68	PMIBUS_CTL	GPIO15	PMBUS_A_CTL
OUTPUTXBAR13	GPIO36	ENCODER2/QEPB	69	70	GPIO	GPIO95	GPIO95
OUTPUTXBAR8	C9/GPIO239/CMP7HP/CMP9P	ENCODER1/QEPA	71	72	GPIO	GPIO81 (5)	GPIO81
GPIO9 (LED4)	GPIO9 (6)	GPIO	73	74	GPIO	GPIO41	GPIO41
GPIO23 (LED3)	GPIO23 (6)	GPIO	75	76	GPIO	GPIO40 (c)	GPIO40
-	GND	GND	77	78	GND	GND	-
-	Rsvd	Rsv	79	80	Rsv	-	-
-	Rsvd	Rsv	81	82	Rsv	-	-
VREFHICDE	VREFHICDE	VREFHI2	83	84	Rsv	-	-
VREFHIAB	VREFHIAB	VREFHI1	85	86	Rsv	-	-
-	-	VREFLO	87	88	Rsv	-	-
Analog	E12/CMP10P	ADC	89	90	ADCIN15	A15/B15/C15/D15/E15/CMP4P/CMP12P	Analog
Analog	E10/CMP10P	ADC	91	92	ADCIN14	A14/B14/C14/D14/E14/CMP3P/CMP11P	Analog
Analog	E1/A25/CMP12P/CMP11P	ADC	93	94	ADC	E3/A27/CMP4P	Analog
Analog	E0/DACOUT2/A24/CMP6P/CMP12LP	ADC	95	96	ADC	E2/A26/CMP3P	Analog
Analog	D3/B27/CAL1/CMP8P/CMP10P	ADC4	97	98	ADC4	D11/CMP9LP	Analog
Analog	D2/B26/CAL0/CMP4P/CMP7N	ADC4	99	100	ADC4	D10/CMP8LP	Analog
Analog	C2/E30/CMP9P/CMP11N	ADC3	101	102	ADC4	D1/B25/CMP7P/CMP3P	Analog
Analog	C1/E29/CMP11P/CMP9P	ADC3	103	104	ADC4	D0/B24/CMP4P/CMP10P	Analog
Analog	C16/CMP6LP	ADC3	105	106	ADC3	C0/E28/CMP10P/CMP5P	Analog
Analog	C12/CMP12HP	ADC3	107	108	ADC3	C17/CMP7LP	Analog
Analog	B3/D27/CMP1P/CMP3N	ADC2	109	110	ADC2	B5/D31/CMP7P/CMP3N	Analog
Analog	B2/D26/CMP3P/CMP2P	ADC2	111	112	ADC2	B4/D30/CMP7	Analog
Analog	A9/GPIO227/CMP6HP	ADC1	113	114	ADC2	B1/C27/CMP3P/CMP12HN	Analog
Analog	A8/GPIO226/CMP5HP/CMP8P	ADC1	115	116	ADC2	B0/VDAC/C26/CMP3P/CMP1P	Analog
Analog	A1/C25/CMP7P/CMP4N	ADC1 (and/or DACB) (b,d)	117	118	ADC1 (b,d)	A7/E25/GPIO225/CMP9P/CMP2N	Analog
Analog	A0/DACOUT1/C24/CMP4P/CMP9P	ADC1 (and/or DACA) (b,d)	119	120	ADC1 (b,d)	A6/E24/GPIO224/CMP2P/CMP12N	Analog

Standard Notes:

- Pin also connects to XDS110ISO-EVM through emulator header.
- Pin also connects to XDS110ISO-EVM through J1.
- Pin also connects to DAC on XDS110ISO-EVM through emulator header.
- Pin also connects to debug header on XDS110ISO-EVM through J1.
- 5V tolerant input pin.

F29H85x SOM (rev A) Notes

- ADC differential pairs are identified using "P" and "N". See device datasheet for details.
- CMP55 pins support various connections to the CMP55 high- and low-comparator inputs. See device datasheet for details.
- Pin is input only. Output mode is not supported.
- Pin connects to PMIC SPI bus.
- May be optionally connected to PMIC SAFE_OUT1 pin through 0-ohm resistor.
- Connects to user LED.

Connector J2

MCU Function	MCU Pin	SoM Standard	Pin	Pin	SoM Standard	MCU Pin	MCU Function
-	-	ETH_PHY_CLK	1	2	ETH_TXD3	-	-
-	-	ETH_TX_EN	3	4	ETH_TXD2	-	-
-	-	ETH_TX_ERR	5	6	ETH_TXD1	-	-
-	-	ETH_INT	7	8	ETH_TXD0	-	-
-	-	ETH_COL	9	10	ETH_TX_CLK	-	-
-	-	ETH CRS	11	12	ETH_RMII_CLK	-	-
-	-	ETH_RX_DV	13	14	ETH_RXD3	-	-
-	-	ETH_RX_ERR	15	16	ETH_RXD2	-	-
-	-	ETH_MDIO_CLK	17	18	ETH_RXD1	-	-
-	-	ETH_MDIO_DATA	19	20	ETH_RXD0	-	-
MCANA_RX	B11/GPIO235/CMP6LP	CANRX	21	22	ETH_RX_CLK	-	-
MCANA_TX	B10/GPIO234/CMP5LP	CANTX	23	24	Rsvd	Rsvd	-
SD3_D4	E9/C31/CMP2P/CMP9N/AIO207 (3)	SD-D	25	26	UARTRX	GPIO77	UARTD_RX
SD3_C4	E8/C30/CMP2P/CMP10N/AIO206 (3)	SD-C	27	28	UARTTX	GPIO86	UARTD_TX
SD2_D2	E11/CMP11P/AIO209 (3)	SD-D	29	30	SPIPCO	GPIO91 (4)	SPID_PICO
SD2_C2	GPIO48	SD-C	31	32	SPIPOCI	GPIO92 (4)	SPID_POCI
SD1_D2	E7/A31/GPIO249/CMP5P	SD-D	33	34	SPICLK	GPIO93 (4)	SPID_CLK
SD1_C2	E6/A30/GPIO248/CMP5	SD-C	35	36	SPIPTE	GPIO94	SPID_PTE
-	Rsvd	Rsv	37	38	USB_DP	-	-
-	Rsvd	Rsv	39	40	USB_DM	-	-
-	Rsvd	Rsv	41	42	Rsv	Rsvd	-
-	Rsvd	Rsv	43	44	Rsv	Rsvd	-
-	-	PWMB	45	46	PWMB	GPIO96	EPWM18_B
-	-	PWMA	47	48	PWMA	GPIO101	EPWM18_A
-	-	PWMB	49	50	PWMB	GPIO31	EPWM16_B
-	-	PWMA	51	52	PWMA	GPIO52	EPWM16_A
EPWM8_B	C7/GPIO237/CMP5HP	PWMB	53	54	PWMB	GPIO19	EPWM10_B
EPWM8_A	C6/GPIO236/CMP12LP	PWMA	55	56	PWMA	GPIO78	EPWM10_A
EPWM6_B	GPIO221	PWMB	57	58	PWMB	GPIO57	EPWM17_B
EPWM6_A	GPIO14	PWMA	59	60	PWMA	GPIO56	EPWM17_A
J2 GND				J2 GND			
-	Rsvd	Rsv	61	62	Rsv	Rsvd	-
-	Rsvd	Rsv	63	64	Rsv	Rsvd	-
-	Rsvd	Rsv	65	66	Rsv	Rsvd	-
-	Rsvd	Rsv	67	68	Rsv	Rsvd	-
-	Rsvd	Rsv	69	70	Rsv	Rsvd	-
-	Rsvd	Rsv	71	72	Rsv	Rsvd	-
-	-	ADC	73	74	ADC	-	-
-	-	ADC	75	76	ADC	-	-
-	-	ADC	77	78	ADC	-	-
-	-	ADC	79	80	ADC	-	-
-	-	ADC	81	82	ADC	-	-
-	-	ADC	83	84	ADC	-	-
-	-	ADC	85	86	ADC	-	-
-	-	ADC	87	88	ADC	-	-
-	-	ADC	89	90	ADC	-	-
-	-	ADC	91	92	ADC	-	-
-	-	ADC	93	94	ADC	-	-
-	-	ADC	95	96	ADC	-	-
Analog	B7/E27/GPIO231/CMP10HP	ADC	97	98	ADC	A11/GPIO229/CMP8HP	Analog
Analog	B6/E26/GPIO230/CMP11N/CMP9HP	ADC	99	100	ADC	A10/GPIO228/CMP7HP	Analog
Analog	-	ADC	101	102	ADC	-	-
Analog	D16/CMP10LP	ADC	103	104	ADC	D13/CMP2P/CMP5N	Analog
-	D12/CMP5P/CMP10N	ADC	105	106	ADC	C13/CMP5LP	Analog
Analog	C11/CMP11HP	ADC	107	108	ADC	C5/CMP11LP	Analog
Analog	C4/CMP10LP	ADC	109	110	ADC	A13/CMP2P	Analog
Analog	C3/E31/CMP9LP	ADC	111	112	ADC	A12/CMP1P	Analog
Analog	B17/CMP10HP	ADC/R1_A3	113	114	ADC/R1_A1	B13/CMP8LP	Analog
Analog	B16/CMP9HP	ADC/R1_A2	115	116	ADC/R1_A0	B12/CMP7LP	Analog
Analog	A5/D29/CMP1N	ADC/R0_A3	117	118	ADC/R0_A1	A3/D25/CMP1	Analog
Analog	A4/D28/CMP1P/CMP2N	ADC/R0_A2	119	120	ADC/R0_A0	A2/D24/CMP1P/CMP9N	Analog

Standard Notes:

- Pin also connects to XDS110ISO-EVM through emulator header.
- Pin also connects to XDS110ISO-EVM through J1.
- Pin also connects to DAC on XDS110ISO-EVM through emulator header.
- Pin also connects to debug header on XDS110ISO-EVM through J1.
- 5V tolerant input pin.

F29H85x SOM (rev A) Notes

- ADC differential pairs are identified using "P" and "N". See device datasheet for details.
- CMPSS pins support various connections to the CMPSS high- and low-comparator inputs. See device datasheet for details.
- Pin is input only. Output mode is not supported.
- Pin connects to PMIC SPI bus.
- May be optionally connected to PMIC SAFE_OUT1 pin through 0-ohm resistor.
- Connects to user LED.

Connector J3

MCU Function	MCU Pin	SoM Standard	Pin	Pin	SoM Standard	MCU Pin	MCU Function
-	Rsvd		Rsv	1	PWMA	-	-
-	Rsvd		Rsv	3	PWMB	-	-
-	Rsvd		Rsv	5	PWMA	-	-
-	Rsvd		Rsv	7	PWMB	-	-
-	Rsvd		Rsv	9	PWMA	-	-
-	Rsvd		Rsv	11	PWMB	-	-
-	Rsvd		Rsv	13	PWMA	-	-
-	Rsvd		Rsv	15	PWMB	-	-
-	Rsvd		Rsv	17	PWMA	-	-
-	Rsvd		Rsv	19	PWMB	-	-
-	Rsvd		Rsv	21	PWMA	-	-
-	Rsvd		Rsv	23	PWMB	-	-
-	Rsvd		Rsv	25	PWMA	-	-
-	SVO_IN		Rsvd	27	PWMB	-	-
PMIC_SAFE_OUT2	PMIC	PMIC_SAFE_OUT2	Rsv	29	PWMA	-	-
PMIC_COMP2_IN-	PMIC	PMIC_COMP2_IN-	Rsv	31	PWMB	-	-
PMIC_COMP2_IN+	PMIC	PMIC_COMP2_IN+	Rsv	33	PWMA	-	-
PMIC_COMP1_IN-	PMIC	PMIC_COMP1_IN-	Rsv	35	PWMB	-	-
PMIC_COMP1_IN+	PMIC	PMIC_COMP1_IN+	Rsv	37	PWMA	-	-
PMIC_WAKE2	PMIC	PMIC_WAKE2	Rsv	39	PWMB	-	-
-	Rsvd		Rsv	41	PWMA	-	-
-	Rsvd		Rsv	43	PWMB	-	-
-	Rsvd		Rsv	45	PWMA	-	-
-	Rsvd		Rsv	47	PWMB	-	-
-	Rsvd		Rsv	49	Rsv	Rsvd	-
-	Rsvd		Rsv	51	Rsv	Rsvd	-
-	Rsvd		Rsv	53	CANTX	-	-
-	Rsvd		Rsv	55	CANRX	-	-
-	-		GPIO	57	UARTTX	-	-
GPIO247	ES/A29/GPIO247		GPIO	59	UARTRX	-	-
FSIRXC_D0	GPIO76	FSIRX-D0	Rsv	61	SPIPTE	-	-
FSIRXC_D1	GPIO127	FSIRX-D1	Rsv	63	SPICLK	-	-
FSIRXC_CLK	GPIO16	FSIRX-CLK	Rsv	65	SPIPOCI	-	-
FSITXB_D0	GPIO6	FSITX-D0	Rsv	67	SPIPICO	-	-
FSITXB_D1	GPIO7	FSITX-D1	Rsv	69	I2CSCL	-	-
FSITXB_CLK	GPIO8	FSITX-CLK	Rsv	71	I2CSDA	-	-
-	Rsvd		Rsv	73	Rsv	Rsvd	-
-	Rsvd		Rsv	75	ECAT_RX1_CLK/CANRX	GPIO69	ESC_RX1_CLK
-	Rsvd		Rsv	77	ECAT_RX1_DATA0/CANTX	GPIO63	ESC_RX1_DATA0
-	Rsvd		Rsv	79	ECAT_RX1_DATA1/CANRX	GPIO64	ESC_RX1_DATA1
-	Rsvd		Rsv	81	ECAT_RX1_DATA2/CANTX	GPIO65	ESC_RX1_DATA2
ESC_LED_LINK0_ACTIVE	D7/GPIO243	ECAT_LED_LINK0_ACTIVE	Rsv	83	ECAT_RX1_DATA3/CANRX	GPIO66	ESC_RX1_DATA3
ESC_LED_LINK1_ACTIVE	D8/GPIO244	ECAT_LED_LINK1_ACTIVE/LINRX	Rsv	85	Rsv	Rsvd	-
ESC_PHY0_LINKSTATUS	GPIO55	ECAT_PHY0_LINKSTATUS/LINTX	Rsv	87	ECAT_TX1_CLK/CANTX	GPIO44	ESC_TX1_CLK
ESC_PHY1_LINKSTATUS	B9/GPIO233/CMP12HP/CMP8P	ECAT_PHY1_LINKSTATUS/LINRX	Rsv	89	ECAT_TX1_DATA0/CANRX	GPIO75	ESC_TX1_DATA0
ESC_TX1_ENA	GPIO45	ECAT_TX1_EN/LINTX	Rsv	91	ECAT_TX1_DATA1/CANTX	GPIO74	ESC_TX1_DATA1
ESC_RX1_DV	GPIO70	ECAT_RX1_DV/LINRX	Rsv	93	ECAT_TX1_DATA2/CANRX	GPIO73	ESC_TX1_DATA2
ESC_RX1_ERR	GPIO71	ECAT_RX1_ERR/LINTX	Rsv	95	ECAT_TX1_DATA3/CANTX	GPIO72	ESC_TX1_DATA3
ESC_MDIO_CLK	GPIO62	ECAT_MDIO_CLK/LINRX	Rsv	97	Rsv	Rsvd	-
ESC_MDIO_DATA	GPIO39	ECAT_MDIO_DATA/LINTX	Rsv	99	ECAT_RX0_CLK/ETH_RX_CLK	GPIO24	ESC_RX0_CLK
ESC_PHY_RSTn	D9/C29/GPIO245/CMP6N/CMP3LP	ECAT_PHY_RST/ETH_MDIO_DATA	Rsv	101	ECAT_RX0_DATA0/ETH_RXD0	GPIO80	ESC_RX0_DATA0
ESC_LED_RUN	D4/B28/GPIO240/CMP8N/CMP5LP	ECAT_LED_RUN/ETH_MDIO_CLK	Rsv	103	ECAT_RX0_DATA1/ETH_RXD1	GPIO38	ESC_RX0_DATA1
ESC_LED_ERR	D5/B29/GPIO241/CMP4	ECAT_LED_ERR/ETH_RX_ERR	Rsv	105	ECAT_RX0_DATA2/ETH_RXD2	GPIO82	ESC_RX0_DATA2
ESC_I2C_SDA	GPIO29	ECAT_I2C_SDA/ETH_RX_DV	Rsv	107	ECAT_RX0_DATA3/ETH_RXD3	GPIO83	ESC_RX0_DATA3
ESC_I2C_SCL	GPIO30	ECAT_I2C_SCL/ETH_CRIS	Rsvd	110	ETH_RMII_CLK	Rsvd	-
ESC_RX0_ERR	GPIO79	ECAT_RX0_ERR/ETH_COL	Rsv	112	ECAT_TX0_CLK/ETH_TX_CLK	GPIO85	ESC_TX0_CLK
ESC_RX0_DV	GPIO25	ECAT_RX0_DV/ETH_INT	Rsv	114	ECAT_TX0_DATA0/ETH_TXD0	GPIO87	ESC_TX0_DATA0
ESC_TX0_ENA	GPIO84	ECAT_TX0_ENA/ETH_TX_ERR	Rsv	116	ECAT_TX0_DATA1/ETH_TXD1	GPIO11	ESC_TX0_DATA1
-	PHY_QSC	ECAT_PHY0_CLK/ETH_TX_EN	Rsv	118	ECAT_TX0_DATA2/ETH_TXD2	GPIO89	ESC_TX0_DATA2
-	PHY_QSC	ECAT_PHY1_CLK/ETH_PHY_CLK	Rsv	120	ECAT_TX0_DATA3/ETH_TXD3	GPIO90	ESC_TX0_DATA3

Standard Notes:

- Pin also connects to XDS110ISO-EVM through emulator header.
- Pin also connects to XDS110ISO-EVM through J1.
- Pin also connects to DAC on XDS110ISO-EVM through emulator header.
- Pin also connects to debug header on XDS110ISO-EVM through J1.
- 5V tolerant input pin.

F29H85x SOM (rev A) Notes

- ADC differential pairs are identified using "P" and "N". See device datasheet for details.
- CMPSS pins support various connections to the CMPSS high- and low-comparator inputs. See device datasheet for details.
- Pin is input only. Output mode is not supported.
- Pin connects to PMIC SPI bus.
- May be optionally connected to PMIC_SAFE_OUT1 pin through 0-ohm resistor.
- Connects to user LED.