Pin Map

ESP32 Open IoT and IIoT Gateways (P01 & P02)

CGE2 rev. 4.1

Element	Connection
LED	
Power LED7 (blue)	+3V3
ETHERNET LED1 (green)	ETH_LED3/PHY_AD3
RGB programmable LED5 (red)	Q6
RGB programmable LED5 (blue)	Q5
RGB programmable LED5 (green)	Q4
74HC595BQ shift register	
VCC	+3V3
Q7S	Q7S
Q0	Q0
Q1	Q1
Q2	Q2
Q3	RS485_TER_EN2

Element	Connection
Q4	Q4
Q5	Q5
Q6	Q6
Q7	RS485_TER_EN1
MR/	CHIP_PU (pull up)
OE/	GND
DS	SERIAL_REG_DATA
SHCP	SHCP
STCP	STCP (pull down)
GND	GND
TPAD	GND
MAX481CSA_1 UART RS485 transceiver	
DI	UART1_TX
DE	UART1_DIR
RE/	UART1_DIR
RO	UART1_RX
A	A_1
B	B_1
MAX481CSA_2 UART RS485 transceivers	
DI	UART2_TX
DE	UART2_DIR
RE/	UART2_DIR

Element	Connection
RO	UART2_RX
A	A_2
B	B_2
ST3232BTR RS232 driver and receiver	
C1+	C1 (100 nF)
C1-	C1 (100 nF)
C2+	C2 (100 nF)
C2-	C2 (100 nF)
T1IN	UART1_TX
T2IN	UART2_TX
R1OUT	UART1_RX
R2OUT	UART2_RX
V+	C3 (100 nF)
V-	C4 (100 nF)
T1OUT	TXD1
T2OUT	TXD2
R1IN	RXD1
R2IN	RXD2
USBLC6-2SC6 ESD protection	
VCC	USB_V

Element	Connection
GND	GND
IO1_A	DATA-
IO1_B	CONSOLE_RX
IO2_A	DATA+
IO2_B	CONSOLE_TX
MicroUSB type B	
V_BUS	USB_V
D-	DATA- (CONSOLE_RX)
D+	DATA+ (CONSOLE_TX)
ID	GND
GND	GND
M24C02-RMC6TG_1 I2C EEPROM	
E0	GND
E1	GND
E2	+3V3
VSS	GND
VCC	+3V3
WC/	GND
SCL	I2C_SCL

Element	Connection
SDA	I2C_SDA
M24C02-RMC6TG_2 I2C EEPROM	
E0	+3V3
E1	+3V3
E2	GND
VSS	GND
VCC	+3V3
WC/	GND
SCL	I2C_SCL (pull up)
SDA	I2C_SDA (pull up)
GD25Q64CSIGTR QSPI FLASH	
CS#	SPICS0
SO	SPIQ
WP#	SPIWP
VSS	GND
VCC	VDD_SDIO
HOLD#	SPIHD
SCLK	SPICLK
SI	SPID

Element	Connection
IP101GRI ETHERNET transceivers	
MDC	ETH_MDC
MDIO	ETH_MDIO
MDI_TP	TXD+
MDI_TN	TXD-
MDI_RP	RXD+
MDI_RN	RXD-
X2	-
X1	GND
RESET_N	ETH_RESET_N (pull up)
ISET	ETH_ISET (pull down)
LED0/PHY_AD0	ETH_LED0/PHY_AD0 (pull up)
LED3/PHY_AD3	ETH_LED3/PHY_AD3 (pull down)
TEST_ON	-
REGOUT	C21 (100 nF), C35 (10 uF)
VDDIO	+3V3
AVDD33	+3V3
GND	GND
TXEN	ETH_TX_EN
TXER/FXSD	-
TXCLK/50M_CLKI	ETH_CLK_IN

Element	Connection
TXD0	ETH_TXD0
TXD1	ETH_TXD1
TXD2	-
TXD3	-
RXDV/CRS_DV/FX_HEN	ETH_RX_CRS_DV
RXCLK/50M_CLKO	-
RXD0	ETH_RXD0
RXD1	ETH_RXD1
RXD2	-
RXD3	-
RXER/INTR_32	-
COL/RMII	ETH_COL/RMII (pull up)
CRS/LEDMOD	-
ESP32-DOWD	
VDDA_1	+3V3
LNA_IN	ANT
VDD3P3_1	VDD3P3 (+3V3)
VDD3P3_2	VDD3P3 (+3V3)
SENSOR_VP (GPI36)	USB_DETECT (pull down)
SENSOR_CAPP (GPI37)	UART2_RX
SENSOR_CAPN (GPI38)	GPI_38
SENSOR_VN (GPI39)	P_DETECT (pull up)

Element	Connection
CHIP_PU	CHIP_PU (pull up)
VDET_1 (GPI34)	BUTTON_IN (pull up)
VDET_2 (GPI35)	UART1_RX
32K_XP (GPIO32)	UART1_TX
32K_XN (GPIO33)	SHCP
GPIO25	ETH_RXD0
GPIO26	ETH_RXD1
GPIO27	ETH_RX_CRS_DV
MTMS (GPIO14)	UART1_DIR
MTDI (GPIO12)	UART2_DIR
VDD3P3_RTC	+3V3
MTCK (GPIO13)	I2C_SDA (pull up)
MTDO (GPIO15)	STCP (pull down)
GPIO2	I2C_SCL (pull up)
GPIO0	ETH_CLK_IN, SPICS1
GPIO4	SERIAL_REG_DATA
GPIO16	ETH_CLK
VDD_SDIO	VDD_SDIO
GPIO17	SPICS1
SD_DATA_2 (GPIO9)	SPIHD
SD_DATA_3 (GPIO10)	SPIWP

Element	Connection
SD_CMD (GPIO11)	SPICS0
SD_CLK (GPIO6)	SPICLK
SD_DATA_0 (GPIO7)	SPIQ
SD_DATA_1 (GPIO8)	SPID
GPIO5	UART2_TX
GPIO18	ETH_MDIO
GPIO23	ETH_MDC
VDD3P3_CPU	+3V3
GPIO19	ETH_TXD0
GPIO22	ETH_TXD1
U0RXD (GPIO3)	CONSOLE_RX
U0TXD (GPIO1)	CONSOLE_TX
GPIO21	ETH_TX_EN
VDDA_2	+3V3
XTAL_N	XTAL_N
XTAL_P	XTAL_P
VDDA_3	+3V3
CAP2	CAP2
CAP1	CAP1
GND	GND

Optional

Element	Connection
Expander	
1	FGC
2	-
3	CHIP_PU (pull up)
4	Q7S
5	SHCP
6	STCP (pull down)
7	Q2
8	BUT_EXT
9	GPI_38
10	+3V3
11	I2C_SCL (pull up)
12	I2C_SDA (pull up)
13	GND
14	GND
15	-
16	FGC
Programmer	
1	CONSOLE_RX
2	CONSOLE_TX
3	+3V3
4	CHIP_PU

Element	Connection
5	GND
6	P_DETECT
7	-
8	-
9	BOOT
10	I2C_SCL
870-62WS5128 QSPI RAM	
CS#	SPICS1
SO	SPIQ
WP#	SPIWP
VSS	GND
VCC	VDD_SDIO
HOLD#	SPIHD
SCLK	SPICLK
SI	SPID
Secure element	
SCL	I2C_SCL (pull up)
SDA	I2C_SDA (pull up)
VCC	+3V3
IO	-

Element	Connection
GND	GND
SI7006-A20/SI7020-A20 humidity and temperature sensor	
SDA	I2C_SDA (pull up)
GND	GND
DNC1	-
SCL	I2C_SCL (pull up)
VDD	+3V3
DNC2	-
HTS221 humidity and temperature sensor	
VDD	+3V3
CS	+3V3
GND	GND
SCL/SPC	I2C_SCL (pull up)
SDA/SDI/SDO	I2C_SDA (pull up)
DRDY	-
LSM6DS33 accelerometer and gyro	
GND	GND
GND	GND
RES	GND
RES	GND

Element	Connection
RES	GND
RES	GND
INT1	-
INT2	-
CS	+3V3
SDO	-
SDA	I2C_SDA (pull up)
SCL	I2C_SCL (pull up)
VDDIO	+3V3
VDD	+3V3
RES	GND
NC	-
LIS3DH accelerometer	
VDD_IO	+3V3
NC	-
NC	-
SCL/SPC	I2C_SCL (pull up)
GND	GND
SDA/SDI/SDO	I2C_SDA (pull up)
SDO/SAO	-
CS	+3V3
INT2	-
RES	GND
INT1	-
GND	GND

Element	Connection
ADC3	-
VDD	+3V3
ADC2	-
ADC1	-
IP101GRI ETHERNET transceivers	
ETH_RESET_N	Q1

Created 2024-06-20 13:29:18 UTC
Updated 2025-10-01 12:27:22 UTC by Michał Grabski