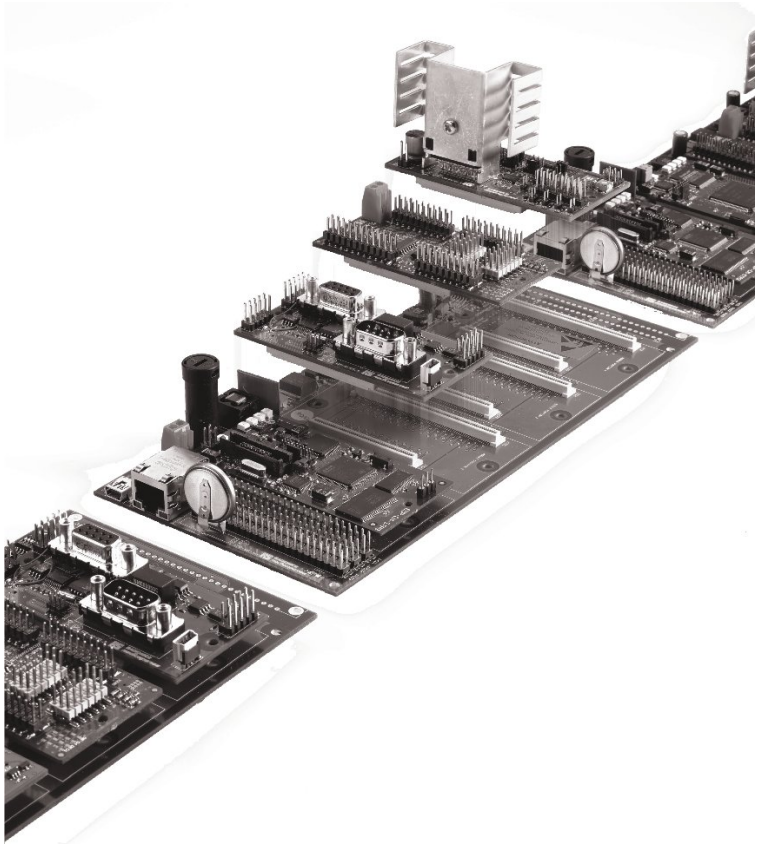
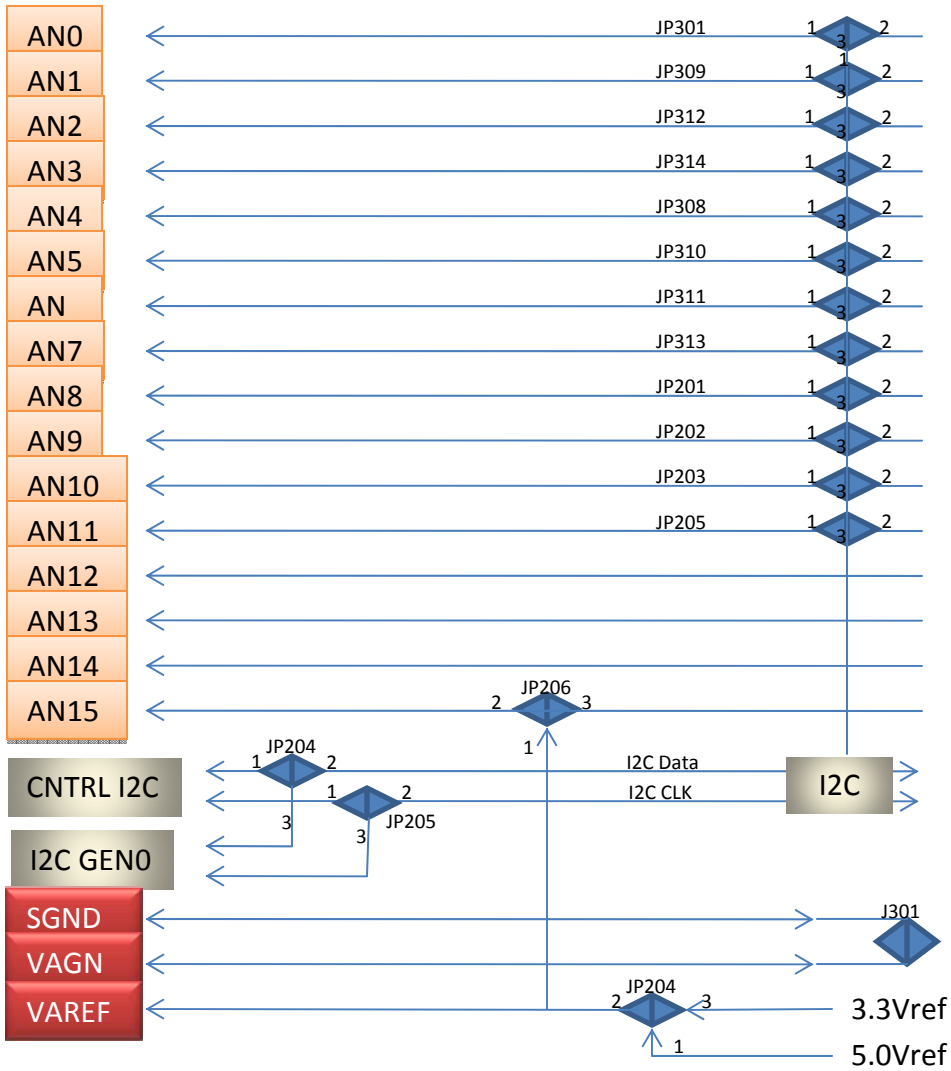
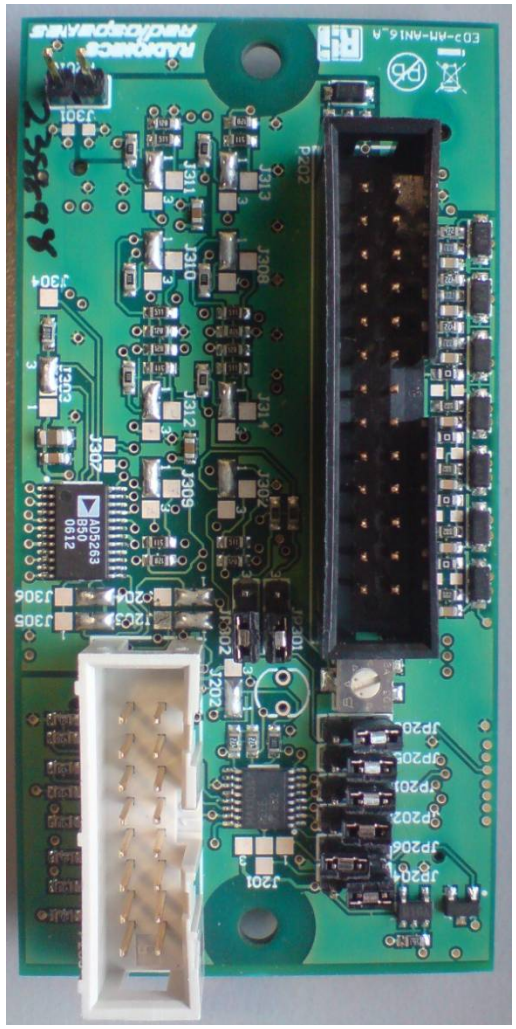
Mapping Aid For RS-EDP Platform



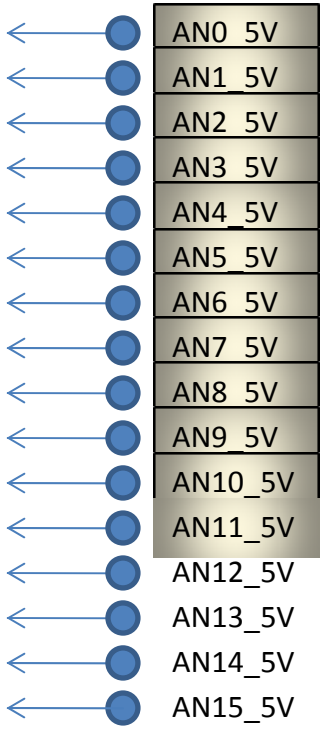
STR912 Rev. 01

AN16 - Analogue Module to RS-EDP Backplane



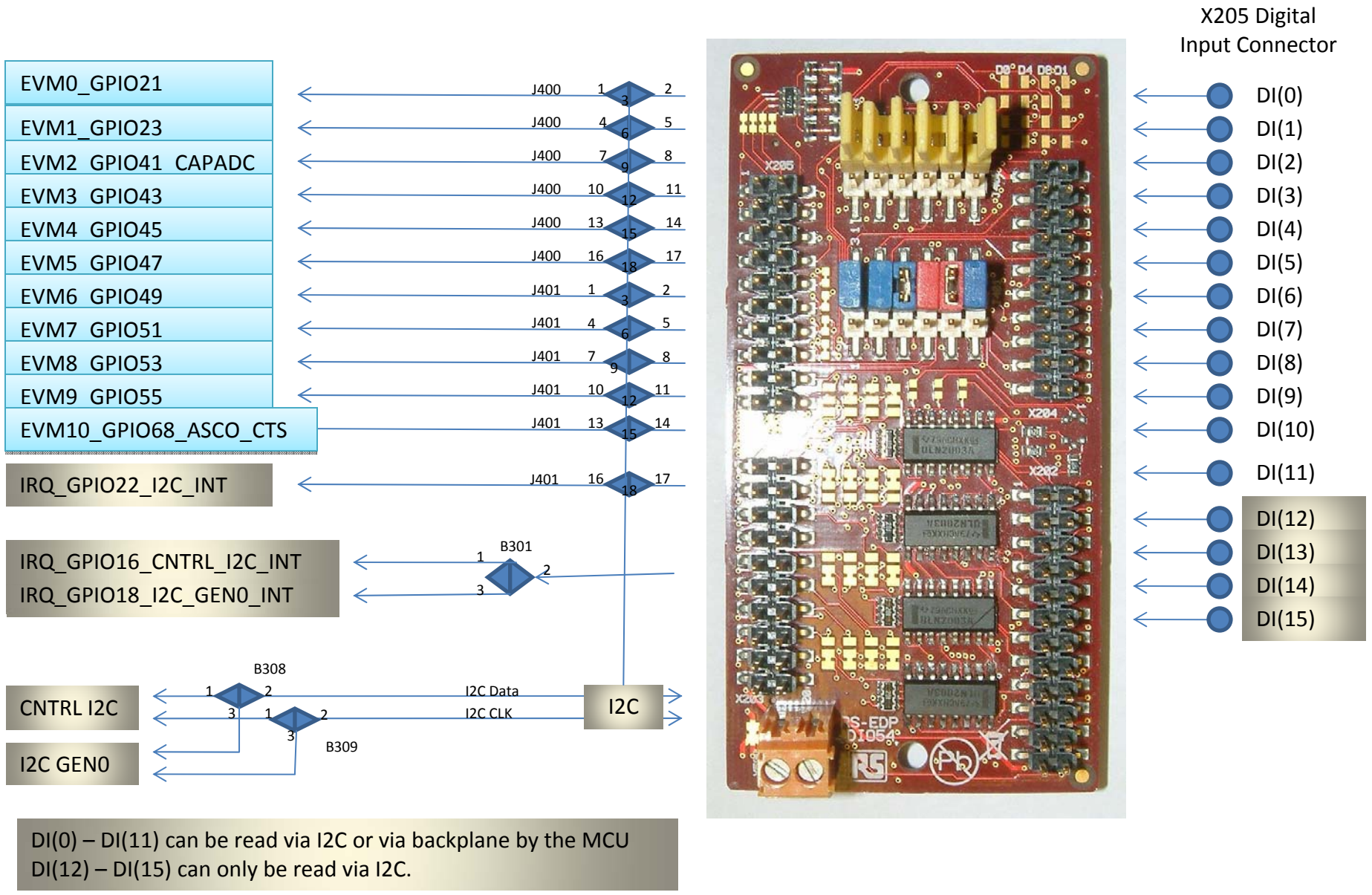


P202 Analogue Input Connector



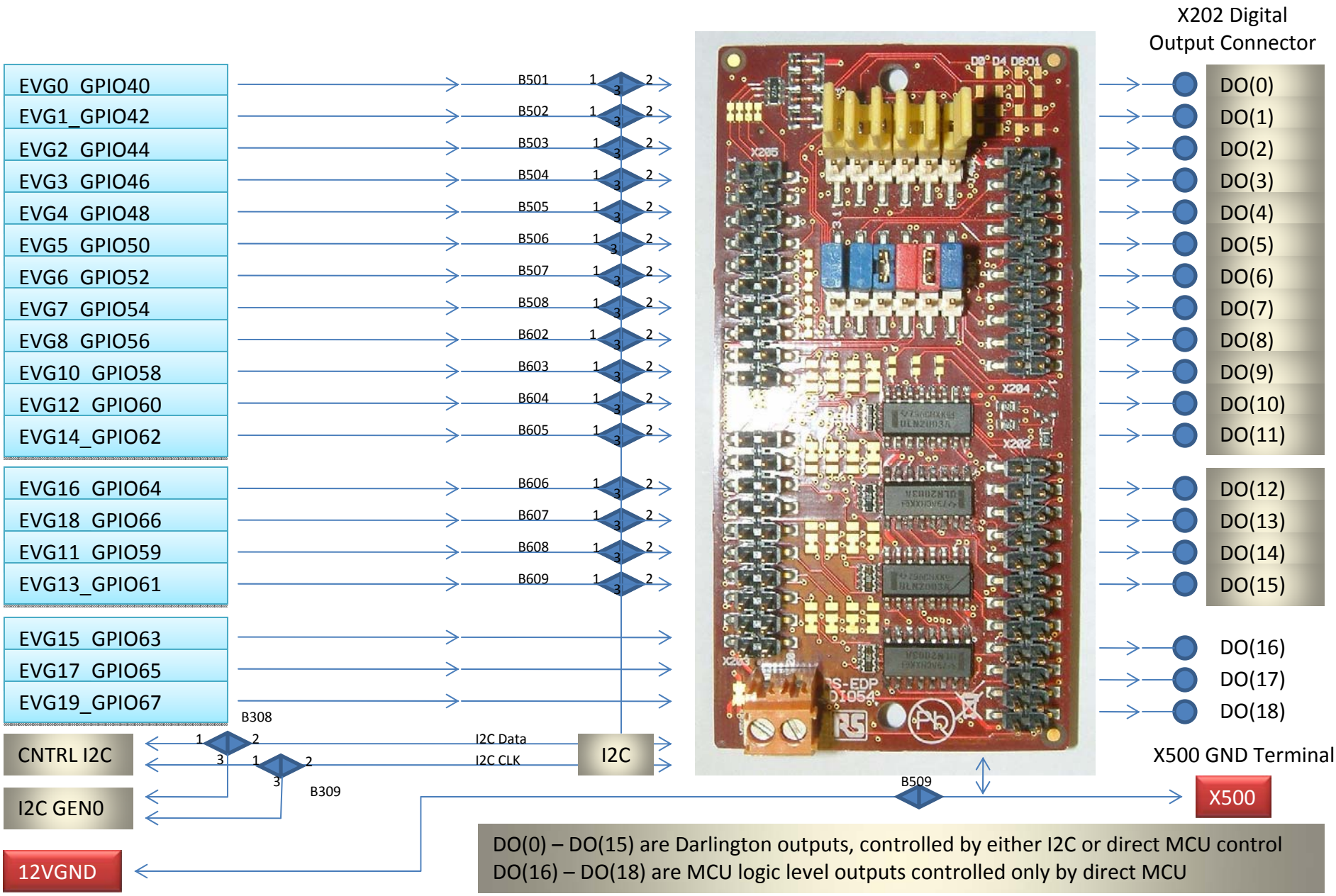
I2C bus can only read inputs AN0_5V to AN11_5V

DIO54 - Digital I/O Module Inputs to RS-EDP Backplane

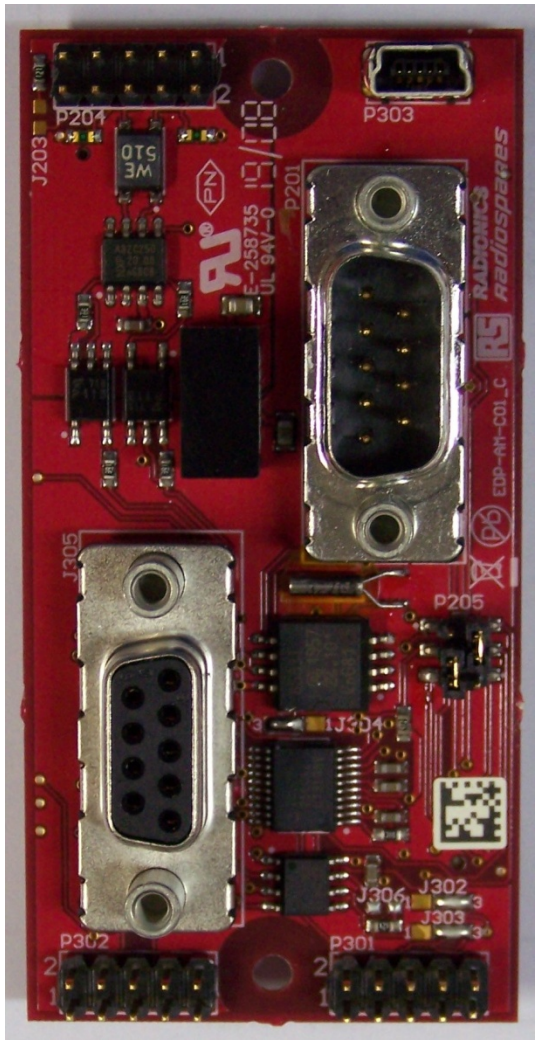


DI(0) – DI(11) can be read via I2C or via backplane by the MCU
DI(12) – DI(15) can only be read via I2C.

DIO54 - Digital I/O Module Outputs to RS-EDP Backplane



CO1 - Communications Module to RS-EDP Backplane



ASC0TX_TTL
ASC0RX_TTL

ASC1TX_TTL
ASC1RX_TTL
ASC1RX_TTL_ASC0DSR
(RS485 Enable)

USBDEV+
USBDEV-

CAN0H
CAN0L

CAN0TX
CAN0RX
CAN1TX
CAN1RX

IRQ_GPIO16_CNTRL_I2C_INT
CNTRL I2C

VDDBAT

J305 & J302
UART0 RS232
ASC0TX
ASC0RX

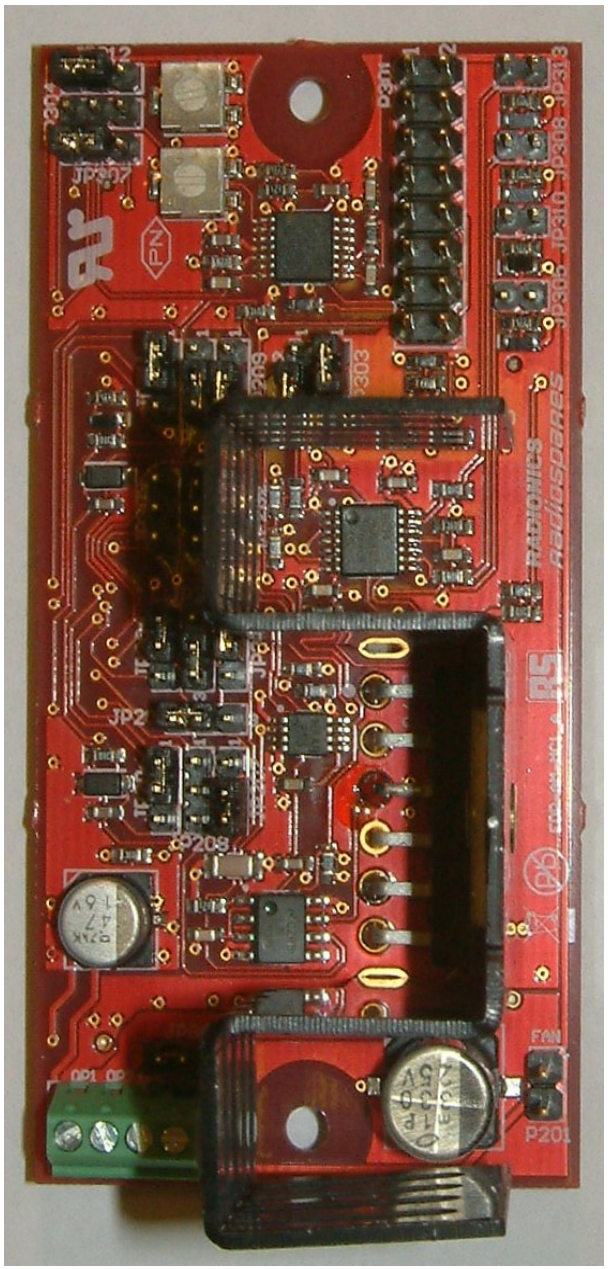
P301 UART1
RS485 or RS232
J303
J302
RS232
RS485
ASC1TX
ASC1RX

P303 – Mini USB
D+
D-

P201 Straight
through CAN
CAN0H
CAN0L

P204 Isolated CAN
CANH
CANL

MC1 - Motor Drive Module to RS-EDP Backplane



EVG19_GPIO6		External Fault	
EVG17_GPIO6		Fault RESET Switch	
EVM7_GPIO51	JP309	Closed Switch	
EVG8_GPIO56			
EVM2_GPIO41_CAPADC	JP314	Open Switch	
EVM9_GPIO55			
EVM5_GPIO47	JP302	Tacho/Encoder0	
EVG6_GPIO52			
EVM6_GPIO49	JP306	Encoder1	
EVG7_GPIO54			
EVG3_GPIO46	JP311	Motor Run/Stop	
EVG18_GPIO6			
EVM4_GPIO45	JP208	Motor Direction Input	
EVG16_GPIO6			
EVG1_GPIO42	JP206	Motor Direction Output	
EVG5_GPIO50			
GPIO0	JP209	Brake	
GPIO1			
EVG0_GPIO40	JP204	CPU PWM0 Out	
EVG4_GPIO48			
CPUDACO0_GPIO17	JP202	Current Trip Level	
CPUDACO1_GPIO19			
EVM8_GPIO53	JP201	Current Trip Int	
EVG12_GPIO60			
AN4 / AN14	JP304	VTACH	
AN0 / AN10	JP307	VSENSE	
AN2 / AN12	JP312	VDCLINK	

P301
- External Fault
- Fault Reset Switch
- Closed Switch
- Open Switch

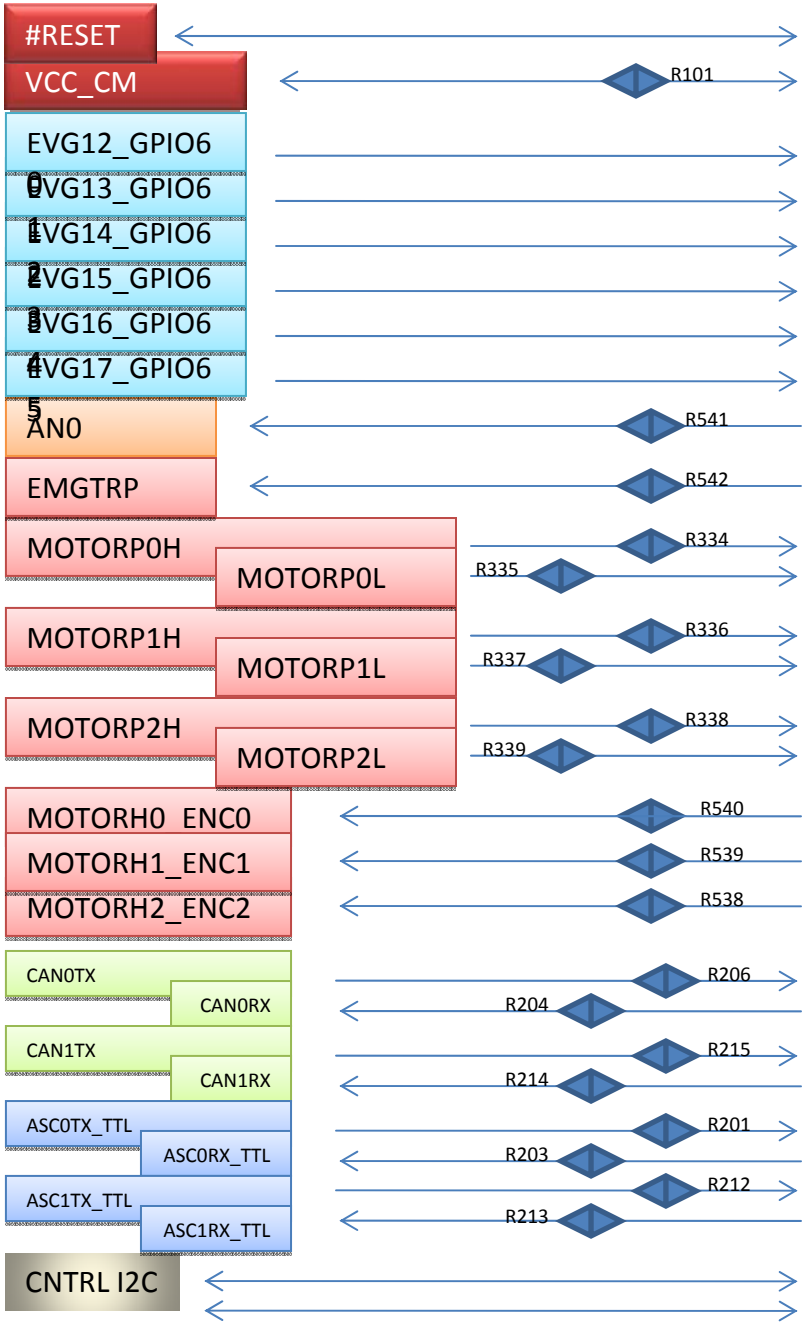
P301 (JP303)
- Tacho Pulses
- Encoder0 Hall0
- Encoder1 Hall1

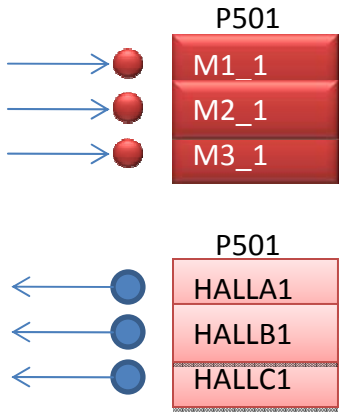
P301
- Motor Run/Stop
- Motor Direction

P302
- Motor+ OP1
- Motor - OP2

P301
- VTACH

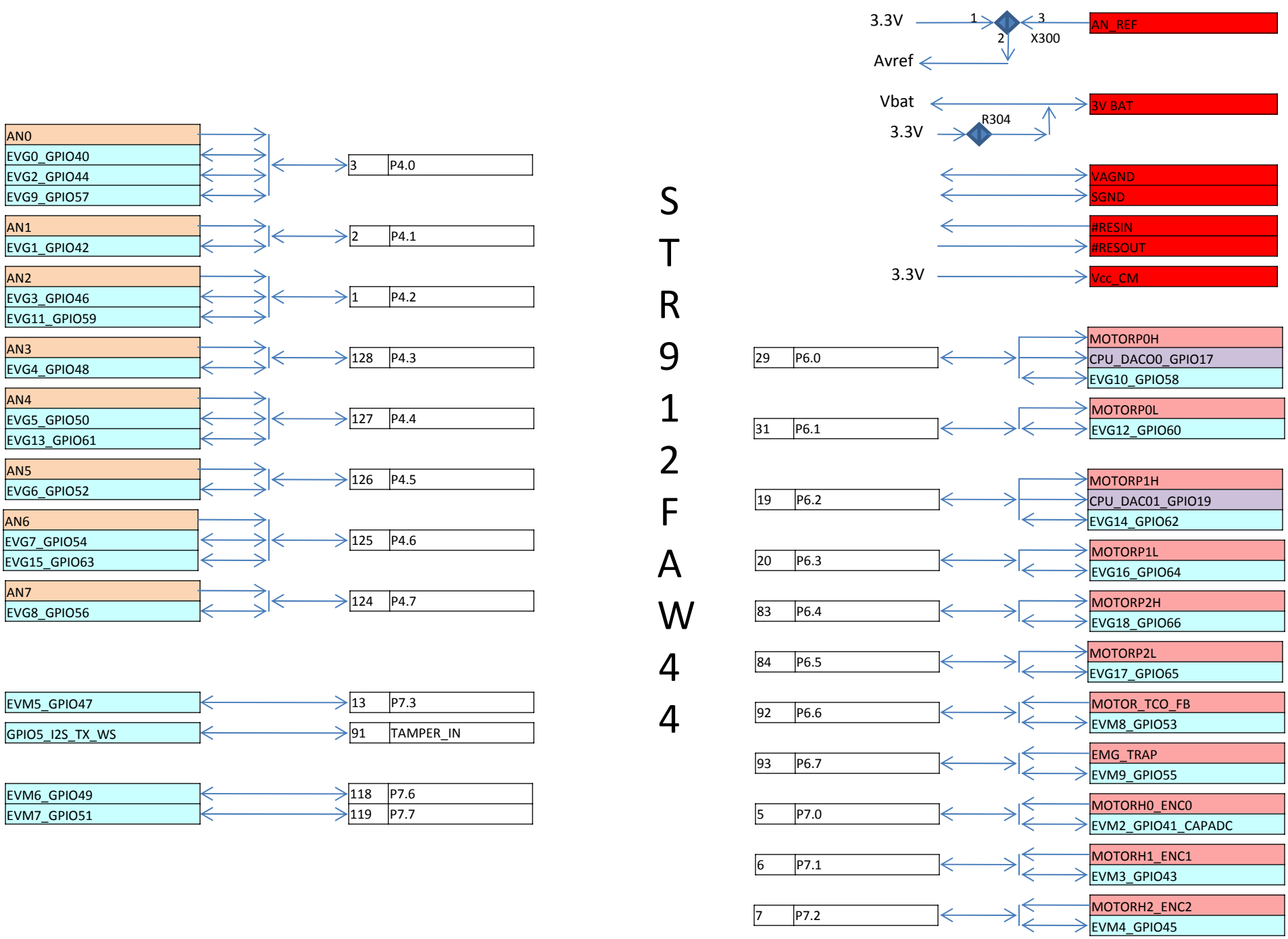
MC2 - Motor Drive Module to RS-EDP Backplane





MC2 Module is a twin motor drive module.

Output connections are only shown for the motor under control from an external Command Module, via the backplane.


AN0
EVG0_GPIO40
EVG2_GPIO44
EVG9_GPIO57
3
P4.0
AN1
EVG1_GPIO42
2
P4.1
AN2
EVG3_GPIO46
EVG11_GPIO59
1
P4.2
AN3
EVG4_GPIO48
128
P4.3
AN4
EVG5_GPIO50
EVG13_GPIO61
127
P4.4
AN5
EVG6_GPIO52
126
P4.5
AN6
EVG7_GPIO54
EVG15_GPIO63
125
P4.6
AN7
EVG8_GPIO56
124
P4.7
EVM5_GPIO47
13
P7.3
GPIO5_I2S_TX_WS
91
TAMPER_IN
EVM6_GPIO49
EVM7_GPIO51
118
P7.6
119
P7.7
S
T
R
9
1
2
F
A
W
4
4
3.3V
1
2
3
X300
AN_REF
Avref
Vbat
3V BAT
R304
3.3V
VAGND
SGND
#RESIN
#RESOUT
3.3V
Vcc_CM
29
P6.0
MOTORP0H
CPU_DACO0_GPIO17
EVG10_GPIO58
31
P6.1
MOTORP0L
EVG12_GPIO60
19
P6.2
MOTORP1H
CPU_DAC01_GPIO19
EVG14_GPIO62
20
P6.3
MOTORP1L
EVG16_GPIO64
83
P6.4
MOTORP2H
EVG18_GPIO66
84
P6.5
MOTORP2L
EVG17_GPIO65
92
P6.6
MOTOR_TCO_FB
EVM8_GPIO53
93
P6.7
EMG_TRAP
EVM9_GPIO55
5
P7.0
MOTORH0_ENC0
EVM2_GPIO41_CAPADC
6
P7.1
MOTORH1_ENC1
EVM3_GPIO43
7
P7.2
MOTORH2_ENC2
EVM4_GPIO45

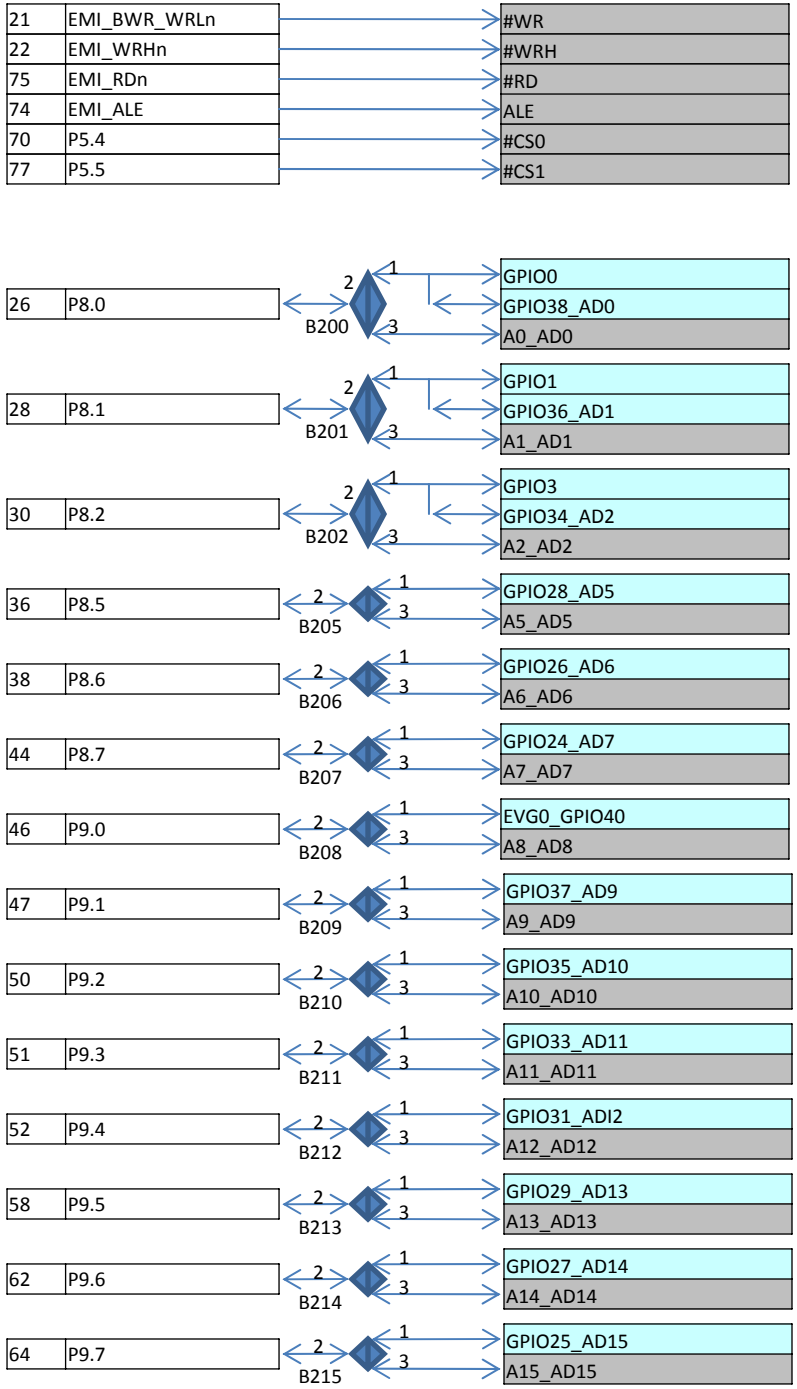
Note: On the STR9 module, the external 1M byte SRAM is mapped in to the external memory space. The options to select Ax_ADx pins (B200 – B215) is not required to use this SRAM.

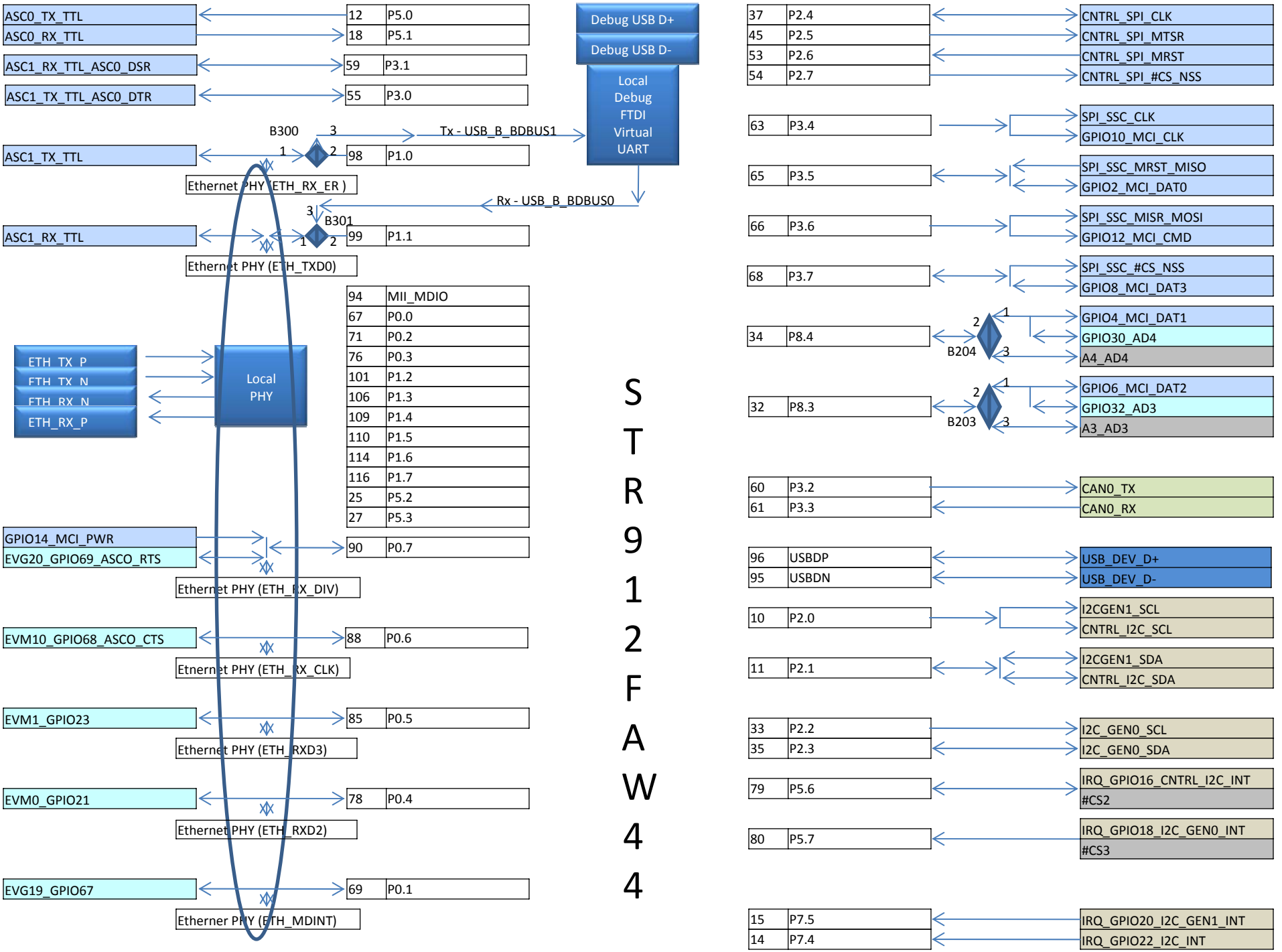
The link options only provide the option to put this external bus onto the RS-EDP back plane . You would only do this if you have an external module that requires mapping into the external address space of the STR9 device.

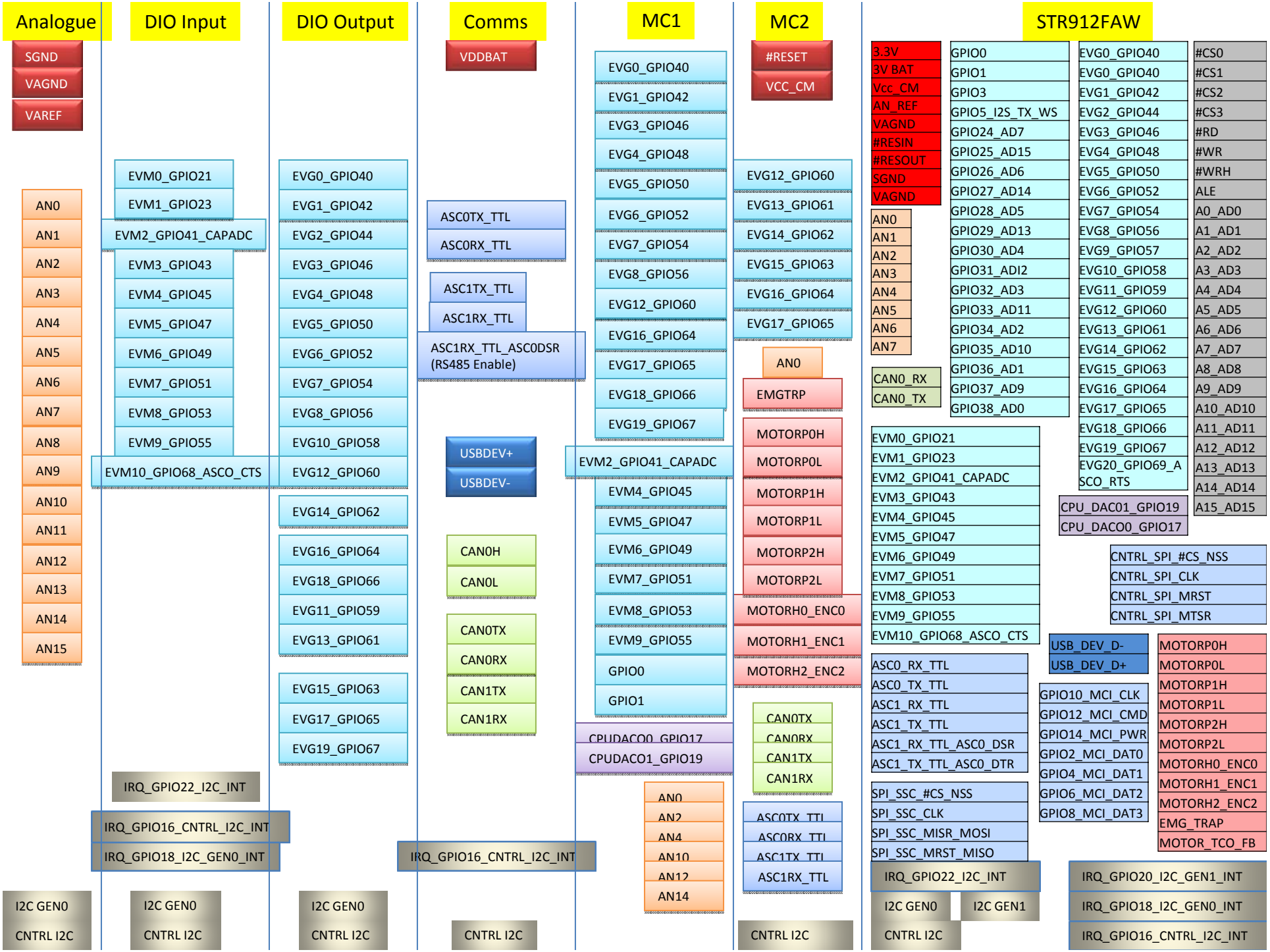
If you intend to use the on board SRAM and do NOT have an external module that requires mapping into the external bus then simply leave these jumpers open.

Note the A3_AD3 and A4_AD4 are shown on the next foil as the pins are shared with GPIO4_MCI_DAT1 and GPIO6_MCI_DAT2 which form part of the smart card interface.

STR912FAW44




ASC0_TX_TTL
ASC0_RX_TTL
ASC1_RX_TTL_ASC0_DSR
ASC1_TX_TTL_ASC0_DTR
ASC1_TX_TTL
ASC1_RX_TTL
GPIO14_MCI_PWR
EVG20_GPIO69_ASCO_RTS
EVM10_GPIO68_ASCO_CTS
EVM1_GPIO23
EVM0_GPIO21
EVG19_GPIO67
12 P5.0
18 P5.1
59 P3.1
55 P3.0
98 P1.0
99 P1.1
90 P0.7
88 P0.6
85 P0.5
78 P0.4
69 P0.1
B300
B301
Tx - USB_B_BDBUS1
Rx - USB_B_BDBUS0
Debug USB D+
Debug USB D-
Local Debug FTDI Virtual UART
Ethernet PHY (ETH_RX_ER)
Ethernet PHY (ETH_TXD0)
Ethernet PHY (ETH_RX_DIV)
Etnernet PHY (ETH_RX_CLK)
Ethernet PHY (ETH_RXD3)
Ethernet PHY (ETH_RXD2)
Etherner PHY (ETH_MDINT)
ETH_TX_P
ETH_TX_N
ETH_RX_N
ETH_RX_P
Local PHY
94 MII_MDIO
67 P0.0
71 P0.2
76 P0.3
101 P1.2
106 P1.3
109 P1.4
110 P1.5
114 P1.6
116 P1.7
25 P5.2
27 P5.3
STR912FAW44
37 P2.4
45 P2.5
53 P2.6
54 P2.7
CNTRL_SPI_CLK
CNTRL_SPI_MTSR
CNTRL_SPI_MRST
CNTRL_SPI_#CS_NSS
63 P3.4
SPI_SSC_CLK
GPIO10_MCI_CLK
65 P3.5
SPI_SSC_MRST_MISO
GPIO2_MCI_DAT0
66 P3.6
SPI_SSC_MISR_MOSI
GPIO12_MCI_CMD
68 P3.7
SPI_SSC_#CS_NSS
GPIO8_MCI_DAT3
34 P8.4
B204
GPIO4_MCI_DAT1
GPIO30_AD4
A4_AD4
32 P8.3
B203
GPIO6_MCI_DAT2
GPIO32_AD3
A3_AD3
60 P3.2
61 P3.3
CAN0_TX
CAN0_RX
96 USBDP
95 USBDN
USB_DEV_D+
USB_DEV_D-
10 P2.0
I2CGEN1_SCL
CNTRL_I2C_SCL
11 P2.1
I2CGEN1_SDA
CNTRL_I2C_SDA
33 P2.2
35 P2.3
I2C_GEN0_SCL
I2C_GEN0_SDA
79 P5.6
IRQ_GPIO16_CNTRL_I2C_INT
#CS2
80 P5.7
IRQ_GPIO18_I2C_GEN0_INT
#CS3
15 P7.5
14 P7.4
IRQ_GPIO20_I2C_GEN1_INT
IRQ_GPIO22_I2C_INT


Analogue
SGND
VAGND
VAREF
AN0
AN1
AN2
AN3
AN4
AN5
AN6
AN7
AN8
AN9
AN10
AN11
AN12
AN13
AN14
AN15
I2C GEN0
CNTRL I2C
DIO Input
EVM0_GPIO21
EVM1_GPIO23
EVM2_GPIO41_CAPADC
EVM3_GPIO43
EVM4_GPIO45
EVM5_GPIO47
EVM6_GPIO49
EVM7_GPIO51
EVM8_GPIO53
EVM9_GPIO55
EVM10_GPIO68_ASCO_CTS
IRQ_GPIO22_I2C_INT
IRQ_GPIO16_CNTRL_I2C_INT
IRQ_GPIO18_I2C_GEN0_INT
I2C GEN0
CNTRL I2C
DIO Output
EVG0_GPIO40
EVG1_GPIO42
EVG2_GPIO44
EVG3_GPIO46
EVG4_GPIO48
EVG5_GPIO50
EVG6_GPIO52
EVG7_GPIO54
EVG8_GPIO56
EVG10_GPIO58
EVG12_GPIO60
EVG14_GPIO62
EVG16_GPIO64
EVG18_GPIO66
EVG11_GPIO59
EVG13_GPIO61
EVG15_GPIO63
EVG17_GPIO65
EVG19_GPIO67
I2C GEN0
CNTRL I2C
Comms
VDDBAT
ASC0TX_TTL
ASC0RX_TTL
ASC1TX_TTL
ASC1RX_TTL
ASC1RX_TTL_ASC0DSR
(RS485 Enable)
USBDEV+
USBDEV-
CAN0H
CAN0L
CAN0TX
CAN0RX
CAN1TX
CAN1RX
IRQ_GPIO16_CNTRL_I2C_INT
CNTRL I2C
MC1
EVG0_GPIO40
EVG1_GPIO42
EVG3_GPIO46
EVG4_GPIO48
EVG5_GPIO50
EVG6_GPIO52
EVG7_GPIO54
EVG8_GPIO56
EVG12_GPIO60
EVG16_GPIO64
EVG17_GPIO65
EVG18_GPIO66
EVG19_GPIO67
EVM2_GPIO41_CAPADC
EVM4_GPIO45
EVM5_GPIO47
EVM6_GPIO49
EVM7_GPIO51
EVM8_GPIO53
EVM9_GPIO55
GPIO0
GPIO1
CPUDACO0_GPIO17
CPUDACO1_GPIO19
AN0
AN2
AN4
AN10
AN12
AN14
MC2
#RESET
VCC_CM
EVG12_GPIO60
EVG13_GPIO61
EVG14_GPIO62
EVG15_GPIO63
EVG16_GPIO64
EVG17_GPIO65
AN0
EMGTRP
MOTORP0H
MOTORP0L
MOTORP1H
MOTORP1L
MOTORP2H
MOTORP2L
MOTORH0_ENC0
MOTORH1_ENC1
MOTORH2_ENC2
CAN0TX
CAN0RX
CAN1TX
CAN1RX
ASC0TX_TTL
ASC0RX_TTL
ASC1TX_TTL
ASC1RX_TTL
CNTRL I2C
STR912FAW
3.3V
3V BAT
Vcc_CM
AN_REF
VAGND
#RESIN
#RESOUT
SGND
VAGND
AN0
AN1
AN2
AN3
AN4
AN5
AN6
AN7
CAN0_RX
CAN0_TX
GPIO0
GPIO1
GPIO3
GPIO5_I2S_TX_WS
GPIO24_AD7
GPIO25_AD15
GPIO26_AD6
GPIO27_AD14
GPIO28_AD5
GPIO29_AD13
GPIO30_AD4
GPIO31_ADI2
GPIO32_AD3
GPIO33_AD11
GPIO34_AD2
GPIO35_AD10
GPIO36_AD1
GPIO37_AD9
GPIO38_AD0
EVG0_GPIO40
EVG0_GPIO40
EVG1_GPIO42
EVG2_GPIO44
EVG3_GPIO46
EVG4_GPIO48
EVG5_GPIO50
EVG6_GPIO52
EVG7_GPIO54
EVG8_GPIO56
EVG9_GPIO57
EVG10_GPIO58
EVG11_GPIO59
EVG12_GPIO60
EVG13_GPIO61
EVG14_GPIO62
EVG15_GPIO63
EVG16_GPIO64
EVG17_GPIO65
EVG18_GPIO66
EVG19_GPIO67
EVG20_GPIO69_ASCO_RTS
#CS0
#CS1
#CS2
#CS3
#RD
#WR
#WRH
ALE
A0_AD0
A1_AD1
A2_AD2
A3_AD3
A4_AD4
A5_AD5
A6_AD6
A7_AD7
A8_AD8
A9_AD9
A10_AD10
A11_AD11
A12_AD12
A13_AD13
A14_AD14
A15_AD15
CPU_DAC01_GPIO19
CPU_DACO0_GPIO17
EVM0_GPIO21
EVM1_GPIO23
EVM2_GPIO41_CAPADC
EVM3_GPIO43
EVM4_GPIO45
EVM5_GPIO47
EVM6_GPIO49
EVM7_GPIO51
EVM8_GPIO53
EVM9_GPIO55
EVM10_GPIO68_ASCO_CTS
CNTRL_SPI_#CS_NSS
CNTRL_SPI_CLK
CNTRL_SPI_MRST
CNTRL_SPI_MTSR
USB_DEV_D-
USB_DEV_D+
MOTORP0H
MOTORP0L
MOTORP1H
MOTORP1L
MOTORP2H
MOTORP2L
MOTORH0_ENC0
MOTORH1_ENC1
MOTORH2_ENC2
EMG_TRAP
MOTOR_TCO_FB
ASC0_RX_TTL
ASC0_TX_TTL
ASC1_RX_TTL
ASC1_TX_TTL
ASC1_RX_TTL_ASC0_DSR
ASC1_TX_TTL_ASC0_DTR
GPIO10_MCI_CLK
GPIO12_MCI_CMD
GPIO14_MCI_PWR
GPIO2_MCI_DAT0
GPIO4_MCI_DAT1
GPIO6_MCI_DAT2
GPIO8_MCI_DAT3
SPI_SSC_#CS_NSS
SPI_SSC_CLK
SPI_SSC_MISR_MOSI
SPI_SSC_MRST_MISO
IRQ_GPIO22_I2C_INT
IRQ_GPIO20_I2C_GEN1_INT
IRQ_GPIO18_I2C_GEN0_INT
IRQ_GPIO16_CNTRL_I2C_INT
I2C GEN0
I2C GEN1
CNTRL I2C