BOSCH

BHA260AB
Shuttle Board

GENERAL DESCRIPTION

Bosch Sensortec's BHA260AB shuttle board is a PCB with the BHA260AB, a smart sensor sub with integrated acceleration sensor, mounted on it.
In addition to the BHA260AB, the board includes

▶ on M2 master interface (configured as SPI):

    ▶ a BMG250 Gyroscope

▶ on M3 master interface (configured as I2C):

    ▶ a BME280 environmental sensor (p, rH, T)

    ▶ a BMM150 magnetometer

   ▶ an AK09915 magnetometer

connected to the BHA260AB. Additional sensors can be connected to the M3 I2C bus, using connector J6.

The shuttle board allows easy access to pins of the smart sensor hub via a simple socket. The shuttle board comes pre-mounted on a level-shifter board, which allows the PCB stack to be directly plugged into Bosch Sensortec's advanced development tool (application board).
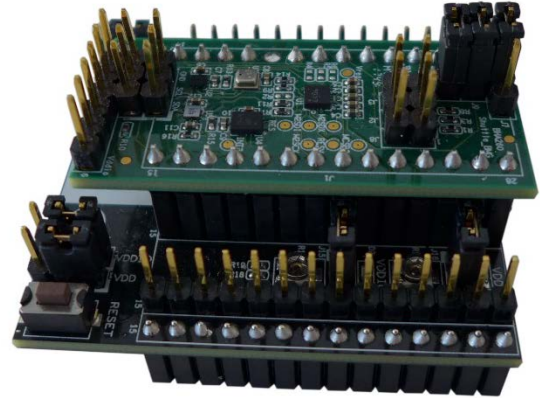
BHA260AB shuttle board mounted on level-shifter board (product photo may differ from real product appearance).

Do not connect the shuttle board directly to the application board, as this can lead to severe damage of the shuttle board and its components.
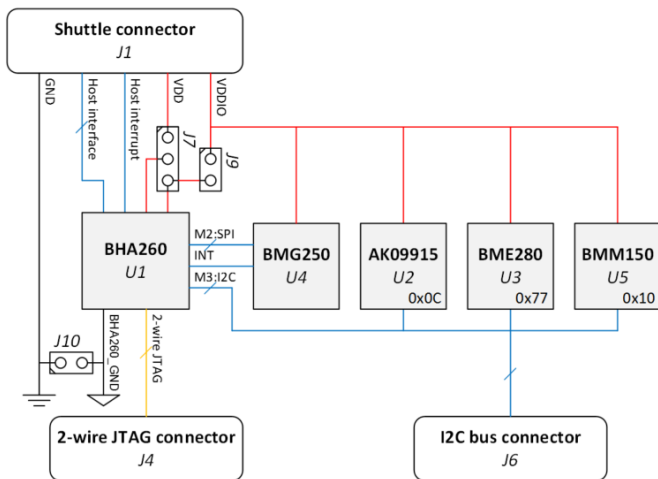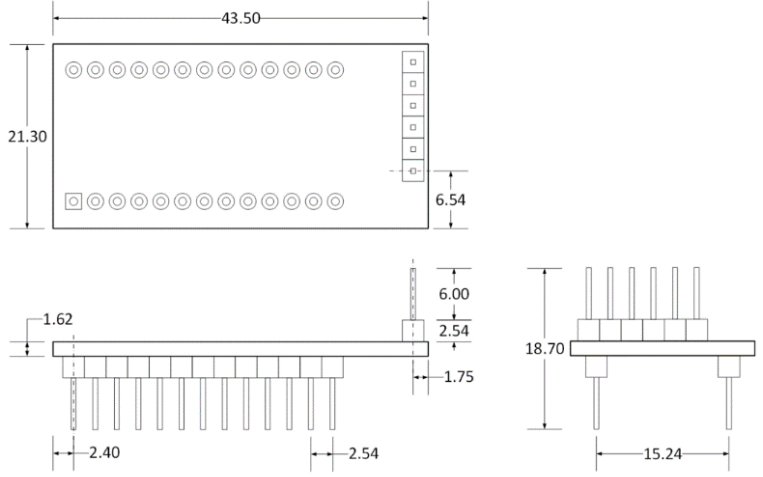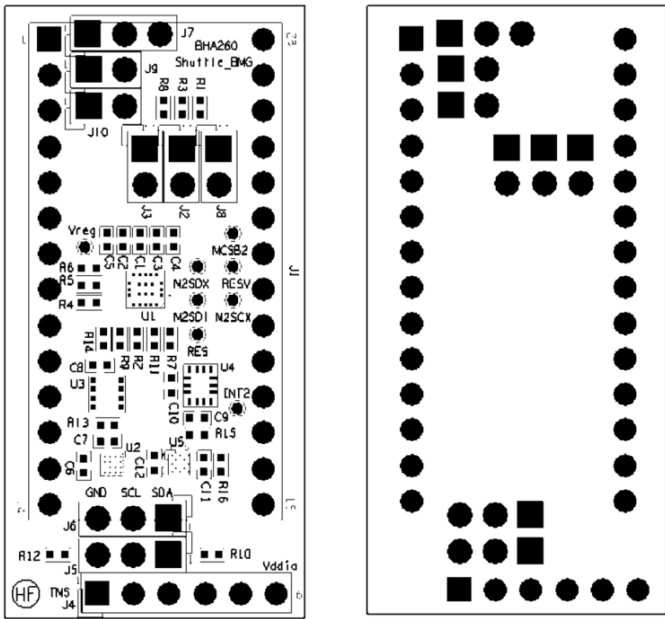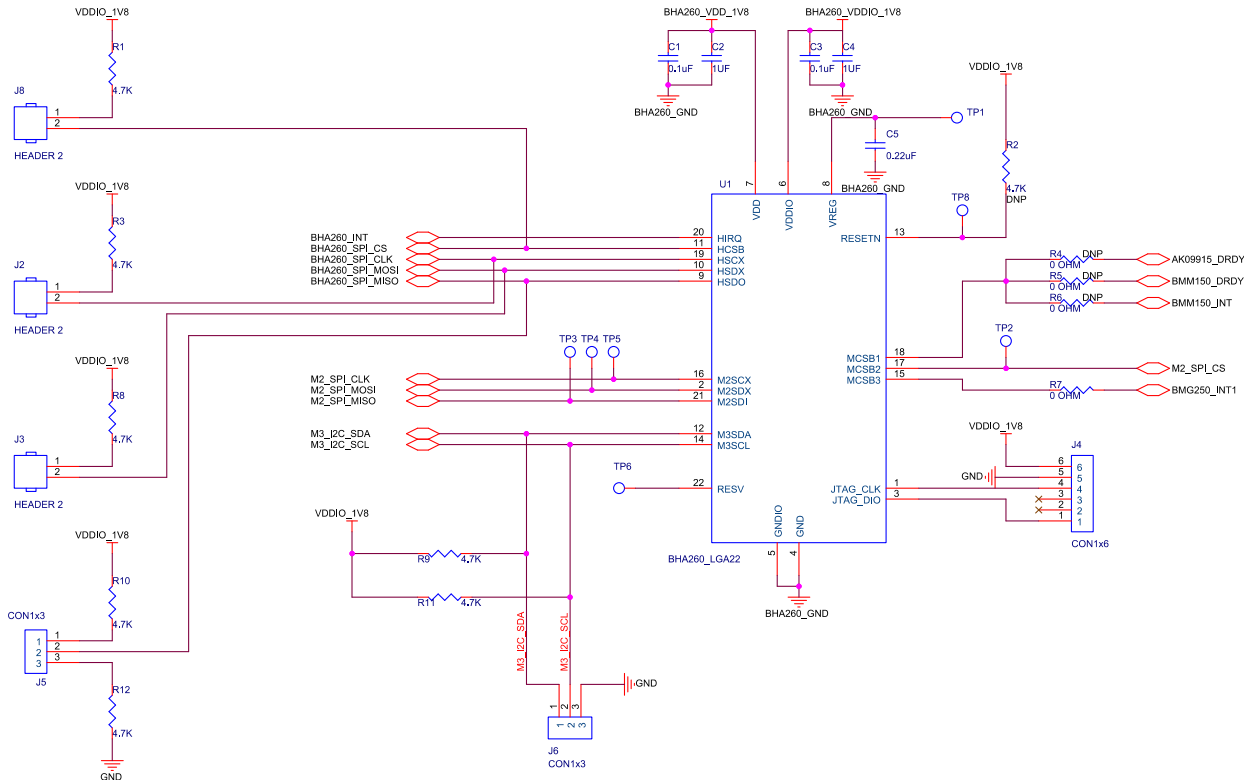

Block diagram of BHA260AB shuttle board

Connection of shuttle board, level shifter board and application board

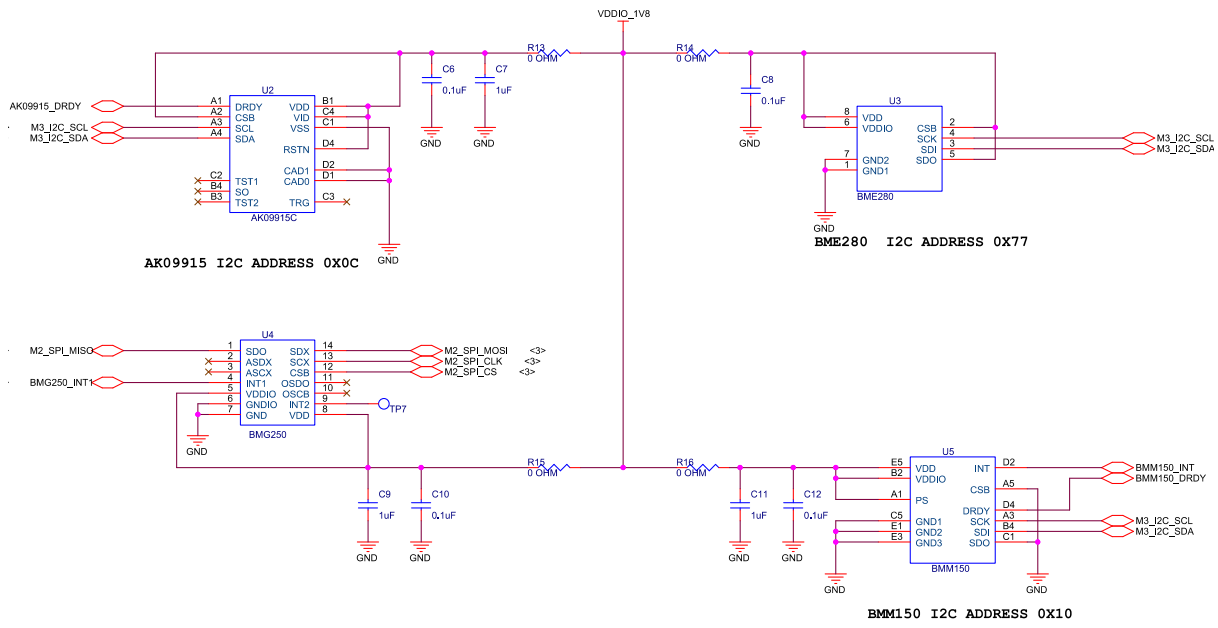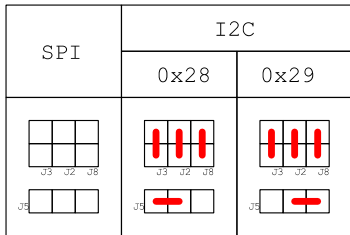| Designator	Function	Description			
J1	Shuttle board connector	Pin number	Pin name	Description	
		1	VDD	Power supply (1.8V only!)	
		2	VDDIO	Power supply (1.8V only!)	
		3,23	GND	Ground	
		4,15	MISO	Master-input-slave-output data pin of SPI bus (connected to BHA260AB host interface)	
		5,17	MOSI	Master-output-slave-input data pin of SPI bus, or SDA of I2C bus (connected to BHA260AB host interface)	
		6,18	SCK	Clock pin of both SPI and I2C bus (connected to BHA260AB host interface)	
		7	CS	Chip selection pin of SPI bus (connected to BHA260AB host interface)	
		21	INT	Host interrupt pin (connected to BHA260AB host interrupt)	
		13,12,11, 10,28,27, 26,25,24	COD[x]	Device code for application board, COD of BHA260AB shuttle board is [100111001].	
		8,9,14, 15,16,19, 20,22,	NC	Not used.	
J2, J3, J8	Pull-up resistors for host interface running in I2C mode	J2: BHA260AB HSCX pad(SCK) J3: BHA260AB HSDX pad(SDA) J8: BHA260AB HCSB pad(SPI Chip select)			
J4	2-wire JTAG connector	Pin number	Pin name	Description	
		1	TMS	TMS pin of 2-wire JTAG	
		2,3	NC	Not used	
		4	CLK	CLK pin of 2-wire JTAG	
		5	GND	Ground on board	
		6	VDDIO	1.8V power supply on board	
J5	SPI/I2C mode & IC2 address selection	Setting	Mode	I2C address	
		Open	SPI	-	
		Left (towards R12)	I2C	0x28	
		Right (towards R10)	I2C	0x29	
J6	M3 I2C interface for bus extensions	Pin number	Pin name	Description	
		1	M3_SDA	SDA pin of M3, with a 4.7kohm pull-up to 1.8V VDDIO	
		2	M3_SCL	SCL pin of M3, with a 4.7kohm pull-up to 1.8V VDDIO	
		3	GND	Ground pin.	
J7, J9, J10	Access points to BHA260AB supply (e.g. for power measurement)	J7: BHA260AB VDD pad J9: BHA260AB VDDIO pad J10: BHA260AB_GND (GND+GNDIO) line			

BHA260AB shuttle board layout – placement (top, bottom)
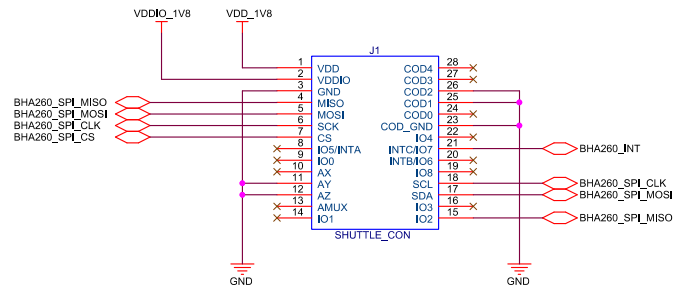

BHA260AB shuttle board outline dimensions (in mm)

BHA260AB shuttle board schematics (1)

VDDIO_1V8

AK09915_DRDY
M3_I2C_SCL
M3_I2C_SDA

U2
A1 DRDY VDD B1
A2 CSB VID C4
A3 SCL VSS C1
A4 SDA
RSTN D4
C2 CAD1 D2
B4 TST1 CAD0 D1
B3 SO
TST2 TRG C3
AK09915C

C6 0.1uF
C7 1uF
GND GND

R13 0 OHM
R14 0 OHM

C8 0.1uF
GND

U3
8 VDD CSB 2
6 VDDIO SCK 4
SDI 3
7 GND2 SDO 5
1 GND1
BME280

M3_I2C_SCL
M3_I2C_SDA

GND

AK09915 I2C ADDRESS 0X0C

BME280 I2C ADDRESS 0X77

M2_SPI_MISO
BMG250_INT1

U4
1 SDO SDX 14
2 ASDX SCX 13
3 ASCX CSB 12
4 INT1 OSDO 11
5 VDDIO OSCB 10
6 GNDIO INT2 9
7 GND VDD 8
BMG250

M2_SPI_MOSI <3>
M2_SPI_CLK <3>
M2_SPI_CS <3>

TP7

GND

C9 1uF
C10 0.1uF
GND GND

R15 0 OHM
R16 0 OHM

C11 1uF
C12 0.1uF
GND GND

U5
E5 VDD INT D2
B2 VDDIO CSB A5
A1 PS DRDY D4
C5 GND1 SCK A3
E1 GND2 SDI B4
E3 GND3 SDO C1
BMM150

BMM150_INT
BMM150_DRDY
M3_I2C_SCL
M3_I2C_SDA

GND GND

BMM150 I2C ADDRESS 0X10

Host interface

SPI	I2C	
	0x28	0x29
J3 J2 J8 / J5	J3 J2 J8 / J5	J3 J2 J8 / J5

power rail

seperately	VDDIO for all
J7 / J9 / J10	J7 / J9 / J10

VDDIO_1V8   VDD_1V8

J1
1 VDD COD4 28
2 VDDIO COD3 27
3 GND COD2 26
4 MISO COD1 25
5 MOSI COD0 24
6 SCK COD_GND 23
7 CS IO4 22
8 IO5/INTA INTC/IO7 21
9 IO0 INTB/IO6 20
10 AX IO8 19
11 AY SCL 18
12 AZ SDA 17
13 AMUX IO3 16
14 IO1 IO2 15
SHUTTLE_CON

BHA260_SPI_MISO
BHA260_SPI_MOSI
BHA260_SPI_CLK
BHA260_SPI_CS

BHA260_INT
BHA260_SPI_CLK
BHA260_SPI_MOSI
BHA260_SPI_MISO

GND GND

COD[8..0]= 1001 11001

VDD_1V8   BHA260_VDD_1V8

J7
1
2
3
CON1x3

J9
1
2
HEADER 2

VDDIO_1V8   BHA260_VDDIO_1V8

J10
1
2
HEADER 2

BHA260_GND   GND

BHA260AB shuttle board schematics (2)

Jumper	Notes
J3	JTAG pin
J4	1-2 IF is I2C; 2-3 IF is SPI
J15/J16	Current Measurement for VDD/VDDIO
J8/J9	Auto/Manu Voltage-Adjust for VDD/VDDIO

Caution

All switches(SW1,SW2) should be set to '1'
when plugging in Shuttle board.
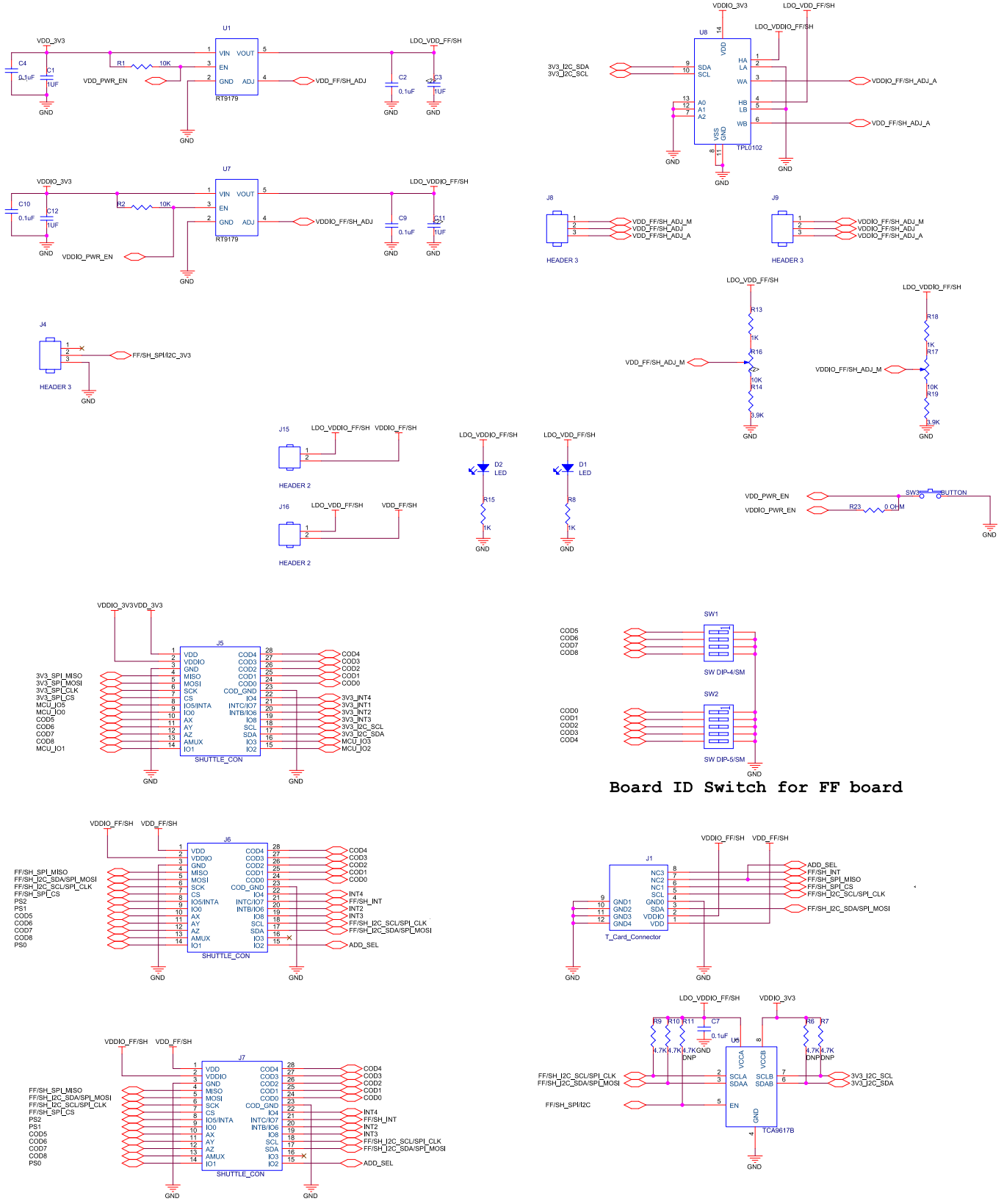
Board ID Switch for FF board

Level-shifter board schematics (1)
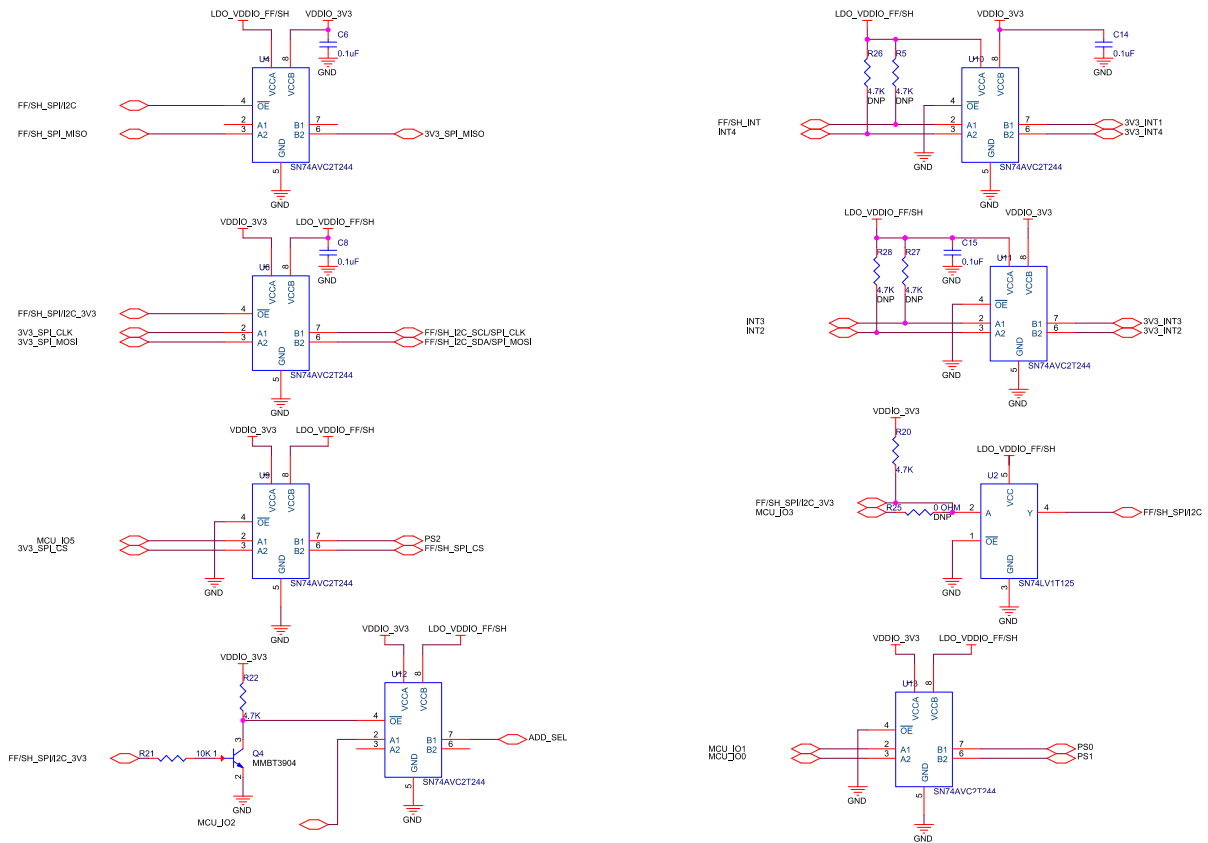
Level-shifter board schematics (2)

Doc.-Number: BST-DHW-FL028-02 / Version_2.0_241120

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Acceleration Sensor Development Tools *category:*

Click to view products by Bosch *manufacturer:*

Other Similar products are found below :

2019 EVAL-ADXL343Z-S BRKOUT-FXLN8362Q MXC6655XA-B 1018 EVAL-ADXL362-ARDZ 1231 1413 DEV-13629 2020 EVAL-ADXL343Z-DB EVAL-ADXL344Z-M EVAL-ADXL375Z-S EV-BUNCH-WSN-1Z EV-CLUSTER-WSN-2Z STEVAL-MKI033V1 EVAL-ADXL344Z-DB EVAL-ADXL346Z-DB EVAL-ADXL363Z-MLP EV-CLUSTER-WSN-1Z 2472 EVAL-ADXL312Z EVAL-ADXL343Z EVAL-ADXL344Z-S EVAL-ADXL363Z-S EVAL-ADXL375Z STEVALMKI032V1 DFR0143 SEN0032 SEN0079 SEN0168 SEN0224 MXA2500EL-B FIT0031 SEN-13963 MXP7205VW-B ASD2511-R-A 3463 SEN0140 SEN0183 SEN-11446 EVAL-KX022-1020 EVAL-KX023-1025 163 2809 4097 4344 4627 4626 ADIS16201/PCBZ