

BHA260 Shuttle Board

GENERAL DESCRIPTION

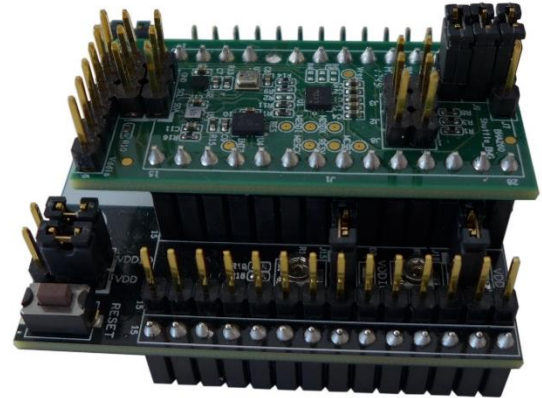
Bosch Sensortec's BHA260 shuttle board is a PCB with the BHA260, a smart sensor sub with integrated acceleration sensor, mounted on it.

In addition to the BHA260, 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

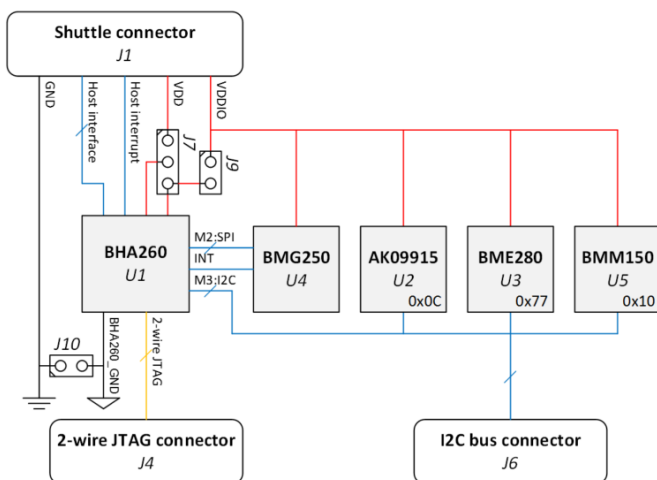
connected to the BHA260. Additional sensors can be connected to the M3 I2C bus, using connector J6.

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).

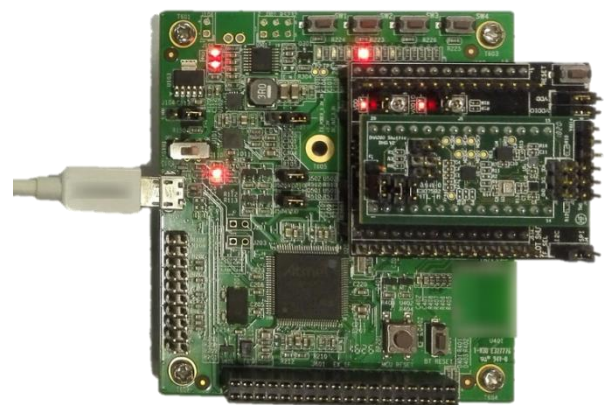


BHA260 shuttle board mounted on level-shifter board (product photo may differ from real product appearance).

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.

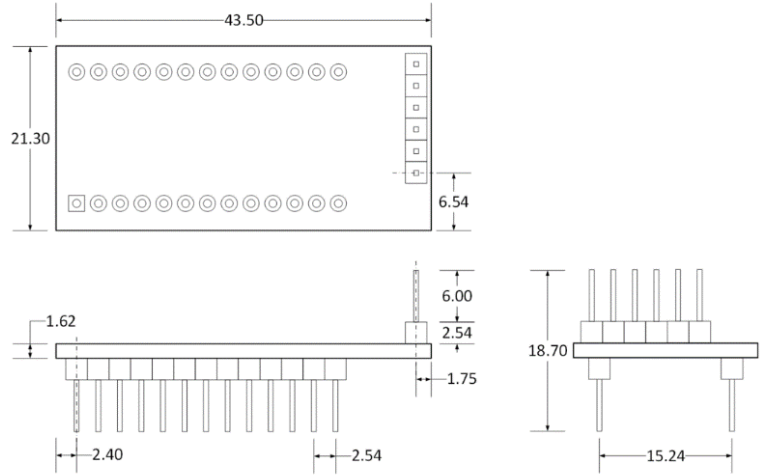
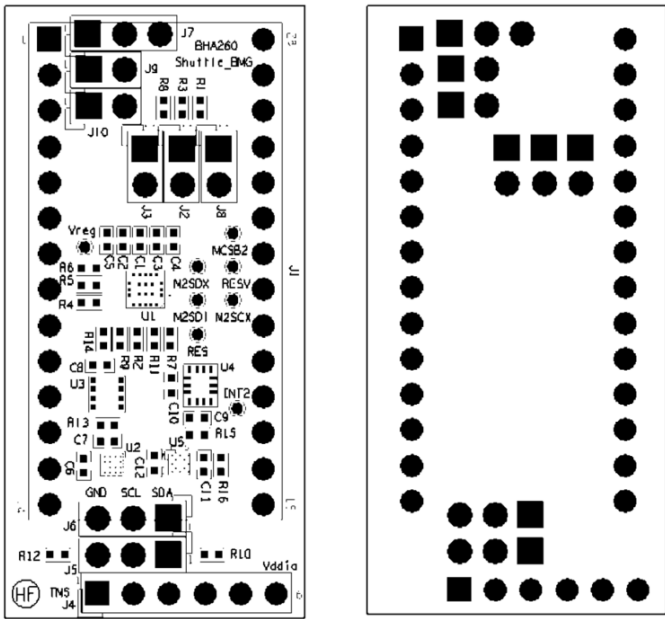


Block diagram of BHA260 shuttle board



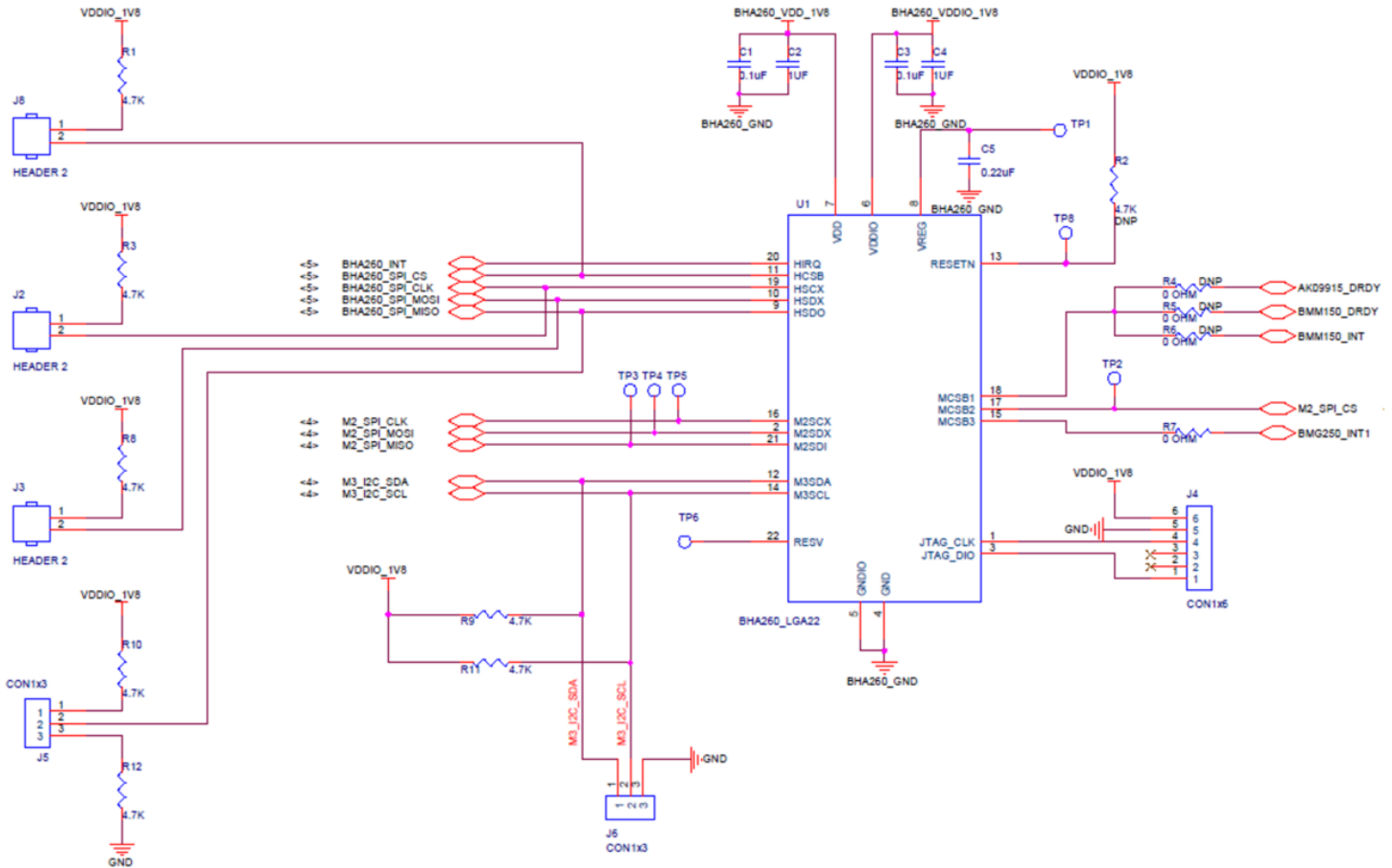
Connection of shuttle board, level shifter board and application board

Designator	Function	Description																																	
J1	Shuttle board connector	<table border="1"> <thead> <tr> <th>Pin number</th> <th>Pin name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VDD</td> <td>Power supply (1.8V only!)</td> </tr> <tr> <td>2</td> <td>VDDIO</td> <td>Power supply (1.8V only!)</td> </tr> <tr> <td>3,23</td> <td>GND</td> <td>Ground</td> </tr> <tr> <td>4,15</td> <td>MISO</td> <td>Master-input-slave-output data pin of SPI bus (connected to BHA260 host interface)</td> </tr> <tr> <td>5,17</td> <td>MOSI</td> <td>Master-output-slave-input data pin of SPI bus, or SDA of I2C bus (connected to BHA260 host interface)</td> </tr> <tr> <td>6,18</td> <td>SCK</td> <td>Clock pin of both SPI and I2C bus (connected to BHA260 host interface)</td> </tr> <tr> <td>7</td> <td>CS</td> <td>Chip selection pin of SPI bus (connected to BHA260 host interface)</td> </tr> <tr> <td>21</td> <td>INT</td> <td>Host interrupt pin (connected to BHA260 host interrupt)</td> </tr> <tr> <td>13,12,11, 10,28,27, 26,25,24</td> <td>COD[x]</td> <td>Device code for application board, COD of BHA260 shuttle board is [100111001].</td> </tr> <tr> <td>8,9,14, 15,16,19, 20,22,</td> <td>NC</td> <td>Not used.</td> </tr> </tbody> </table>	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 BHA260 host interface)	5,17	MOSI	Master-output-slave-input data pin of SPI bus, or SDA of I2C bus (connected to BHA260 host interface)	6,18	SCK	Clock pin of both SPI and I2C bus (connected to BHA260 host interface)	7	CS	Chip selection pin of SPI bus (connected to BHA260 host interface)	21	INT	Host interrupt pin (connected to BHA260 host interrupt)	13,12,11, 10,28,27, 26,25,24	COD[x]	Device code for application board, COD of BHA260 shuttle board is [100111001].	8,9,14, 15,16,19, 20,22,	NC	Not used.
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J2, J3, J8	Pull-up resistors for host interface running in I2C mode	J2: BHA260 HSCX pad(SCK) J3: BHA260 HSDX pad(SDA) J8: BHA260 HCSB pad(SPI Chip select)																																	
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J7, J9, J10	Access points to BHA260 supply (e.g. for power measurement)	J7: BHA260 VDD pad J9: BHA260 VDDIO pad J10: BHA260_GND (GND+GNDIO) line																																	

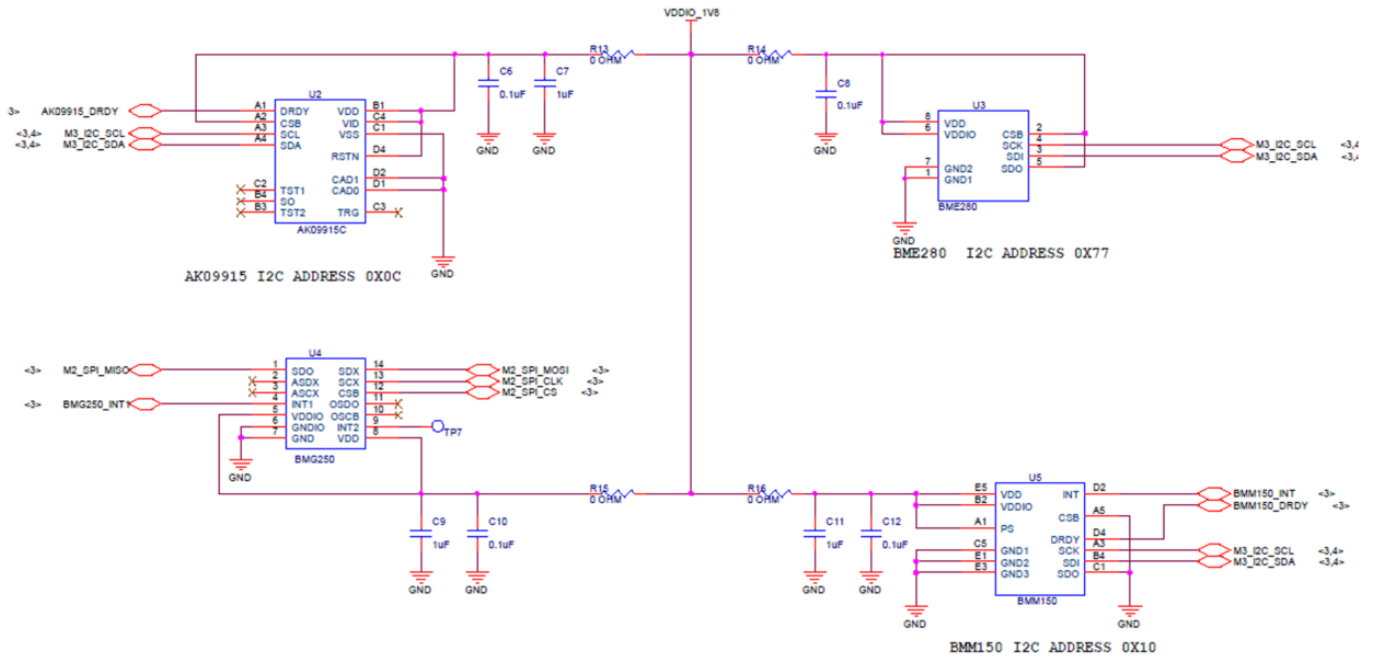


BHA260 shuttle board layout – placement (top, bottom)

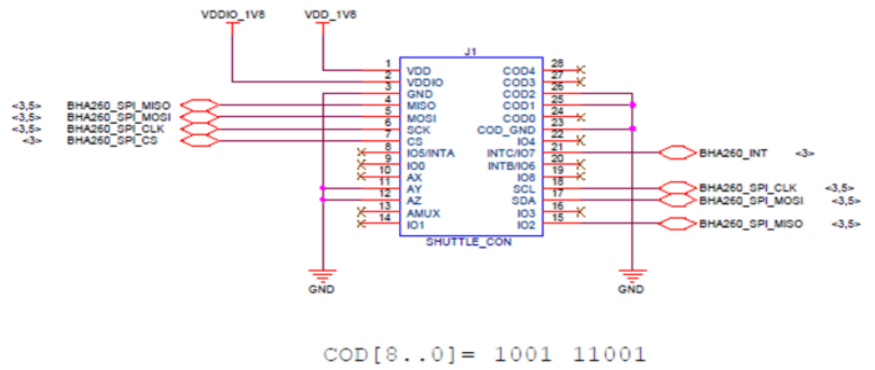
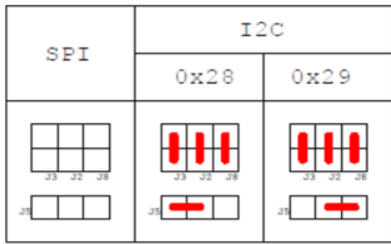
BHA260 shuttle board outline dimensions (in mm)



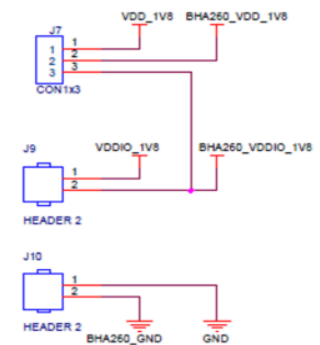
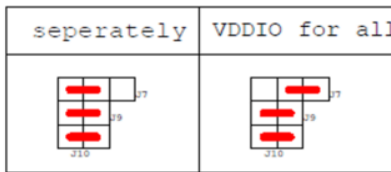
BHA260 shuttle board schematics



Host interface



power rail



BHA260 shuttle board schematics

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