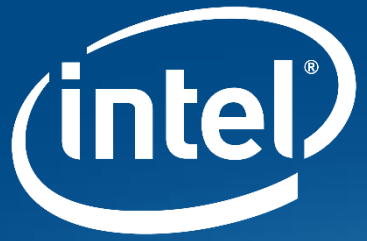


INTEL® JOULE™ MODULE PLATFORM MECHANICAL INTERFACE DESCRIPTOR

Document 568978

Revision 1.0

August 2016

Contents:

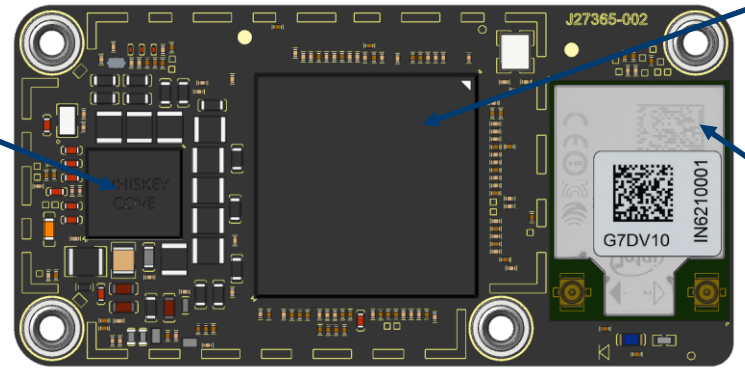
1. General Overview
2. Module Mechanical Definition
3. Expansion Board Mechanical Definition
4. Module Installation Recommendation
5. Mechanical Attach and Heatsink Reference

SECTION 1

General Overview

1. General Overview

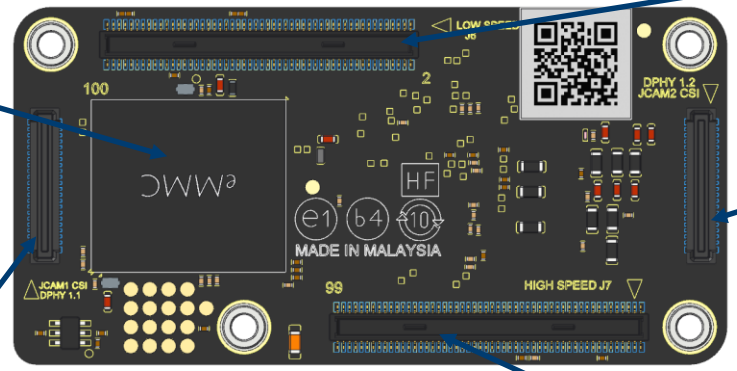
The Intel® Joule™ Module contains these major components:



Intel® Atom™ SoC

PMIC

Intel® 8260 Dual Band
Wi-Fi and BT device



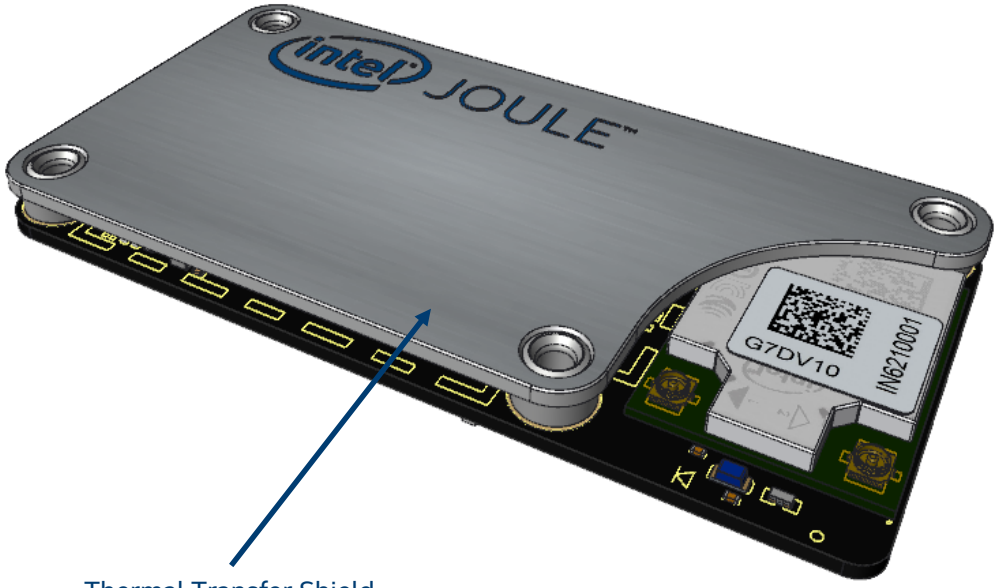
Carrier Board Interface

eMMC Storage
Memory

MIPI CSI Interface

MIPI CSI Interface

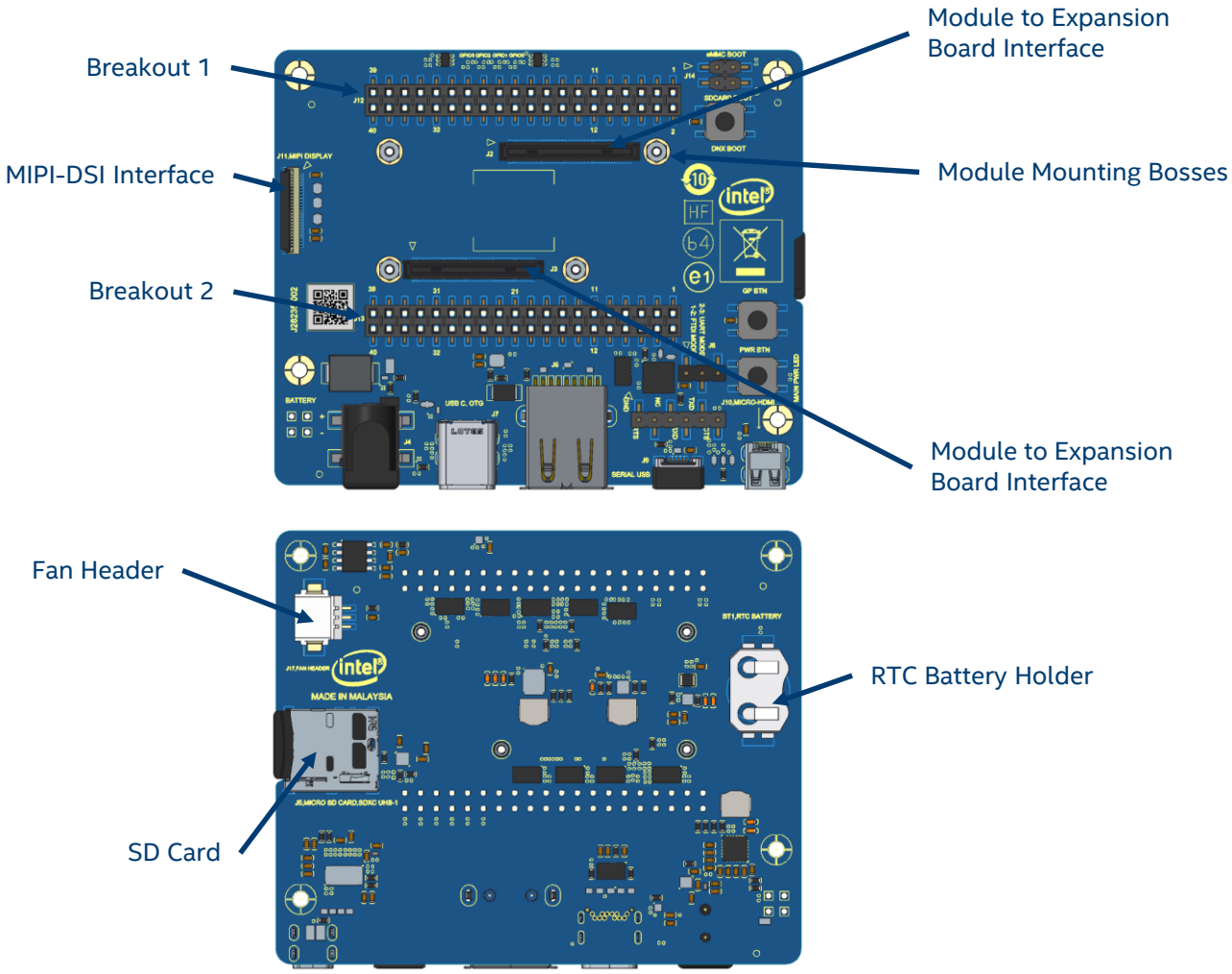
Expansion Board Interface

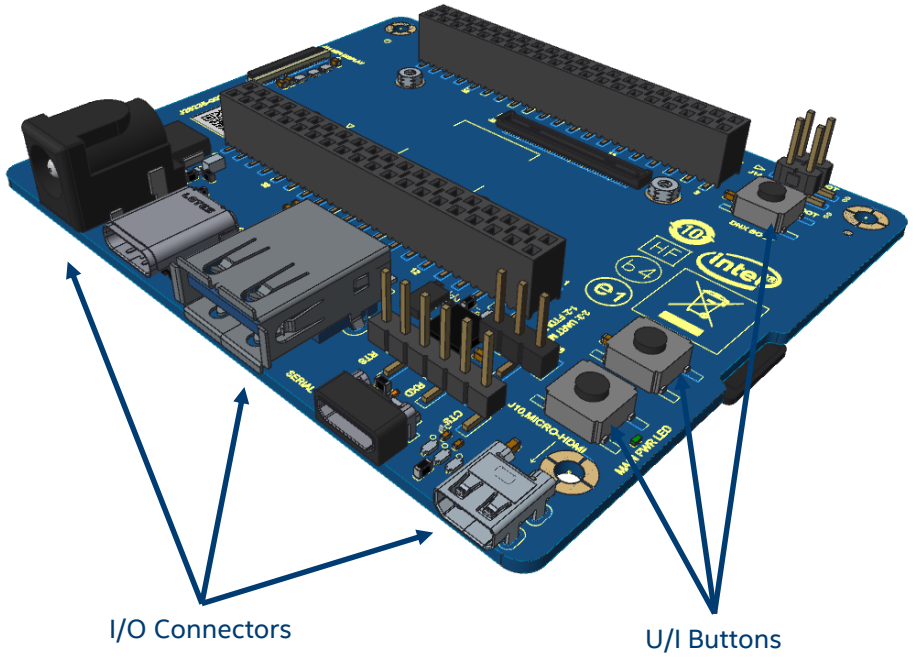


Thermal Transfer Shield
(Permanently Attached)

1. General Overview

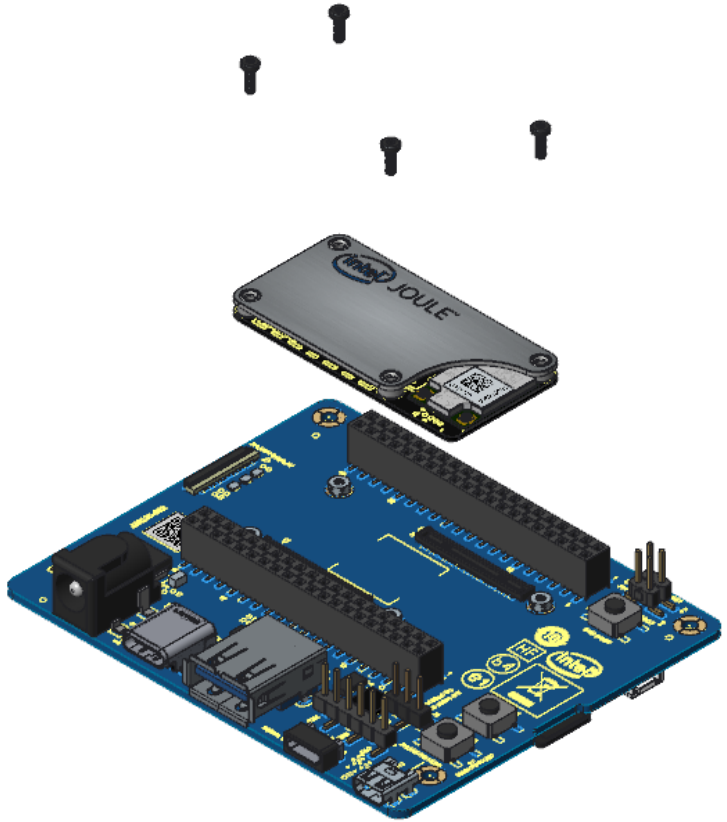
The Intel® Joule™ expansion board contains these features that provide access to features of the module.

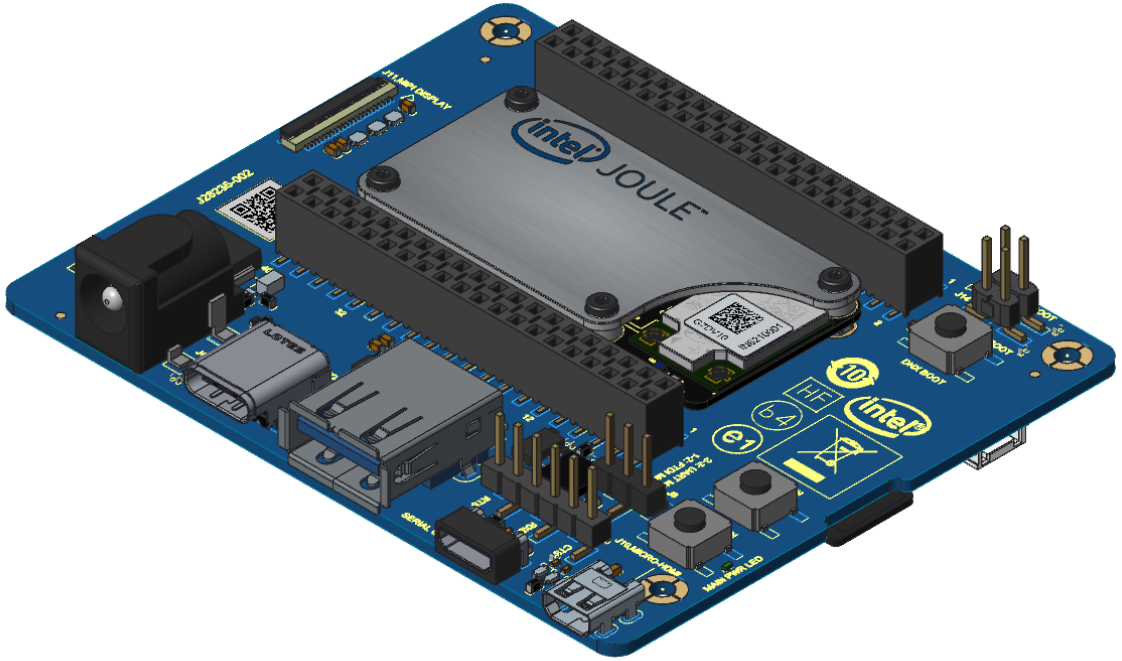




1. General Overview

The Intel® Joule™ module attaches to the carrier board to create a fully functional compute device.

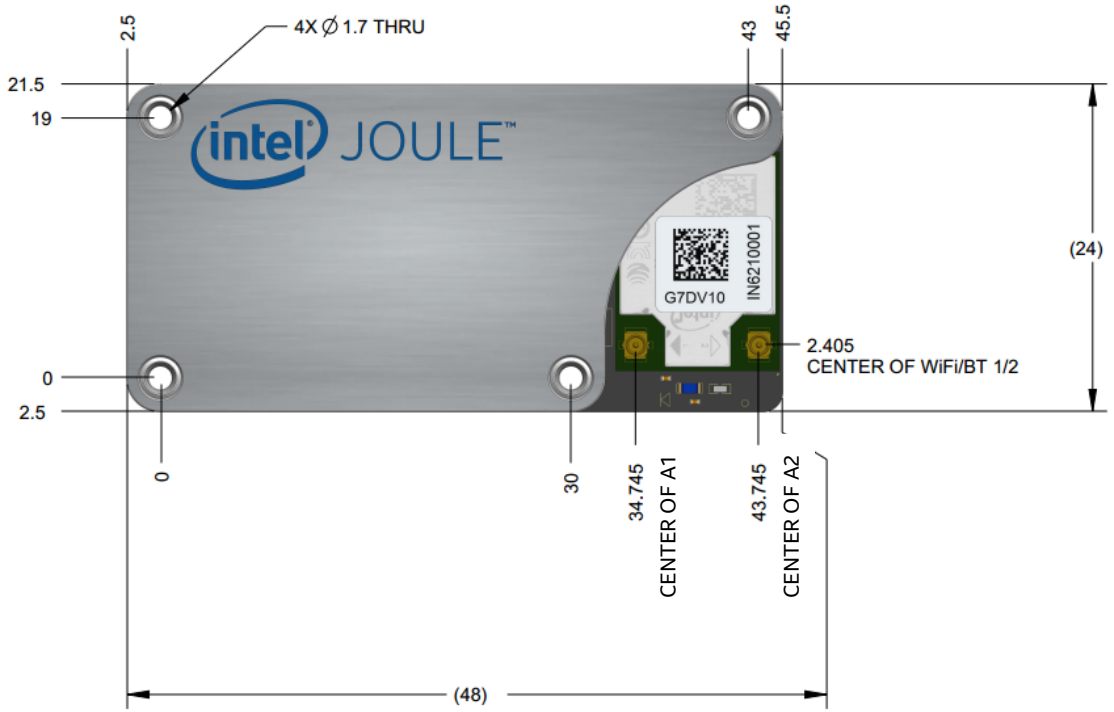


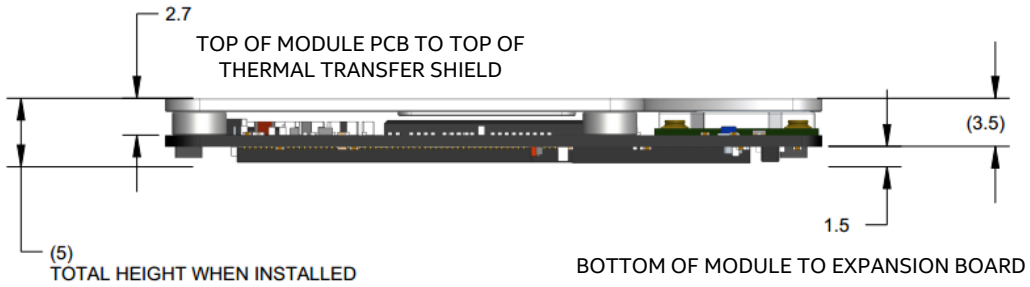


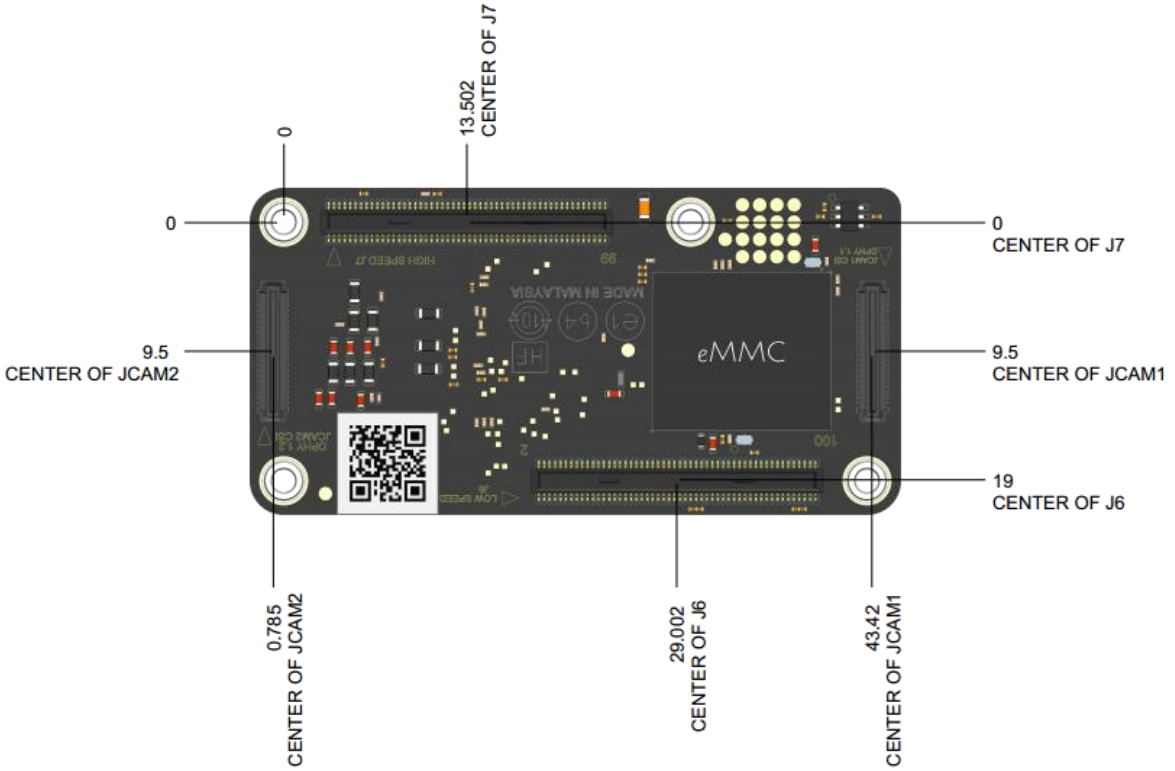
SECTION 2

Module Mechanical Description

2. Module Mechanical Description







2. Module Interface Connectors

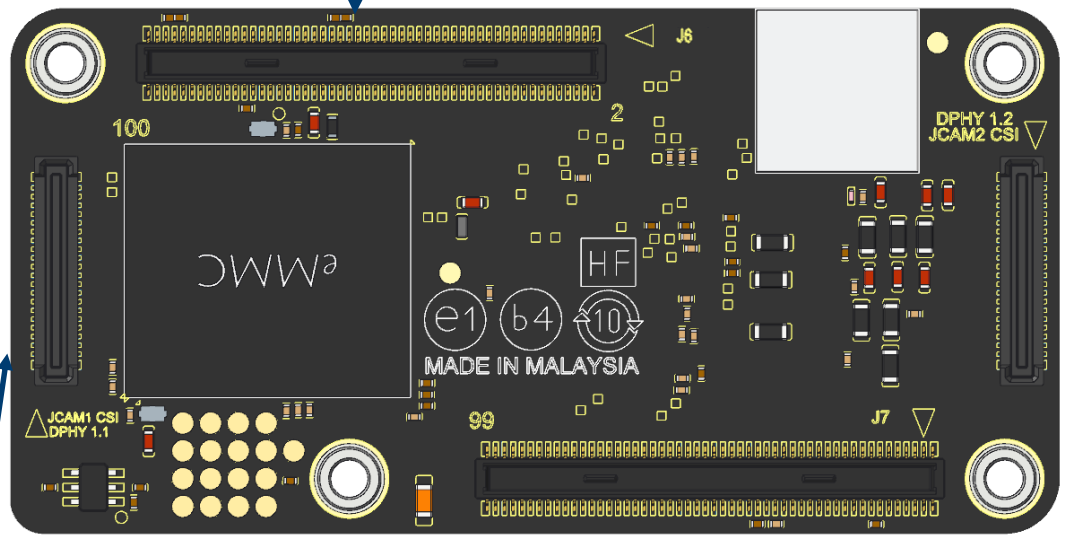
Antenna 1
Wi-Fi* only

Antenna 2
Wi-Fi + Bluetooth*

Antenna Connectors are MHF4 type

Expansion Board Interface (J6)
Hirose – DF40C-100DP-0.4V(51)*

MIPI-CSI DPHY 1.2 & 1.1 (JCAM2)
Hirose – BM14B(0.8)-50DP-0.4V(51)



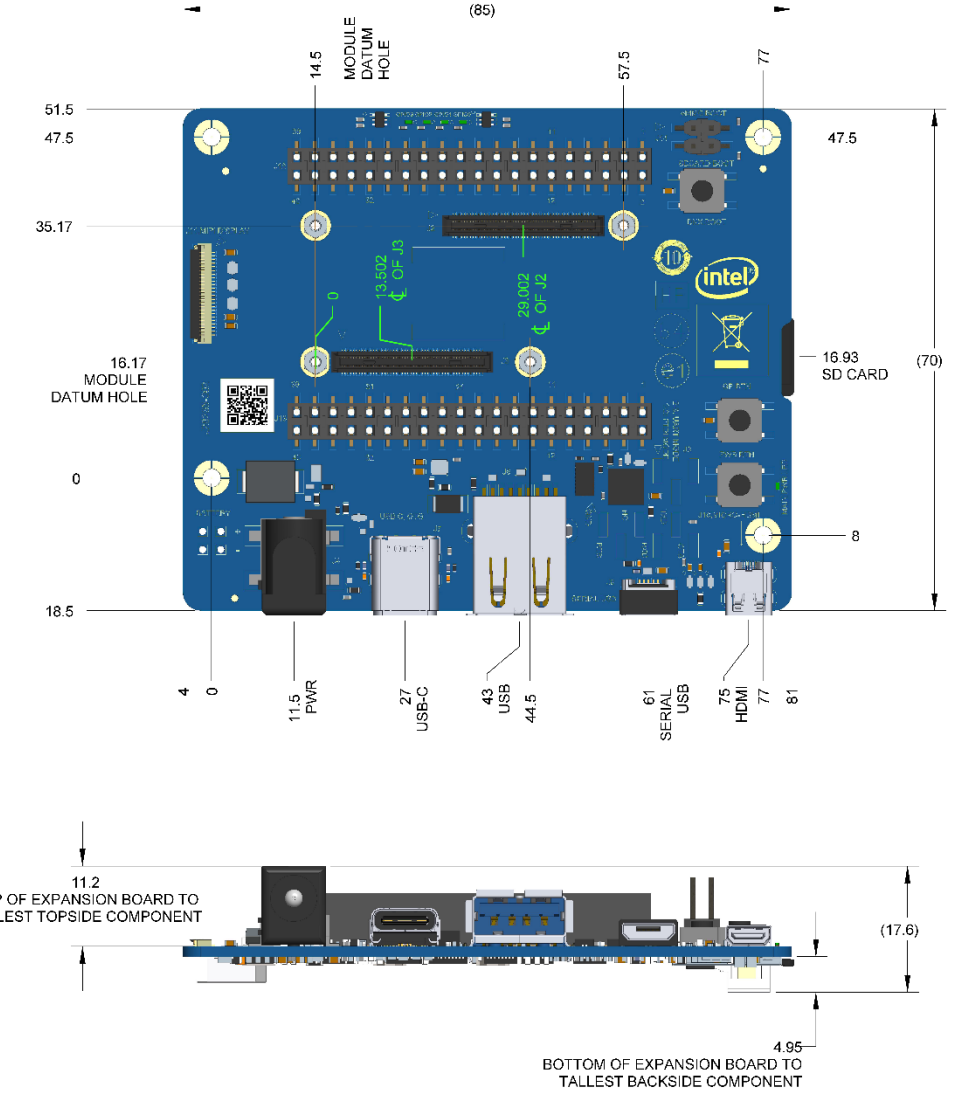
MIPI-CSI DPHY 1.1 (JCAM1)
Hirose – BM14B(0.8)-50DP-0.4V(51)

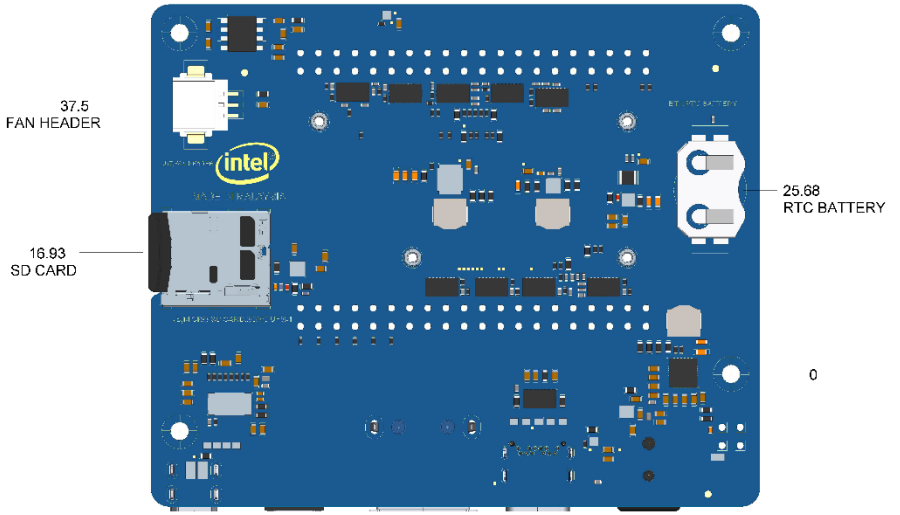
Expansion Board Interface (J7)
Hirose – DF40C-100DP-0.4V(51)

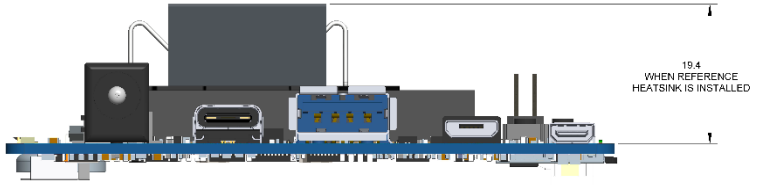
SECTION 3

Expansion Board Mechanical Description

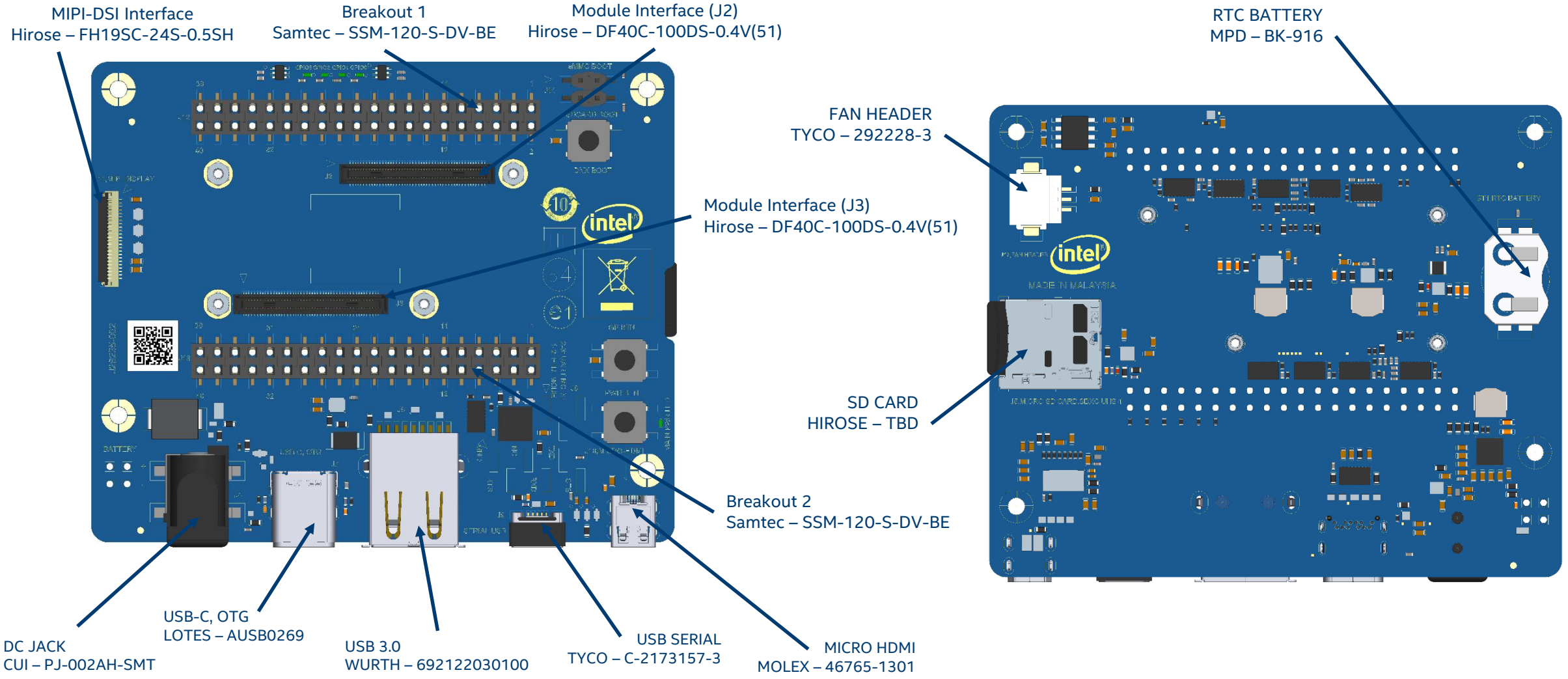
3. Expansion Board Mechanical Description







3. Expansion Board Mechanical Description

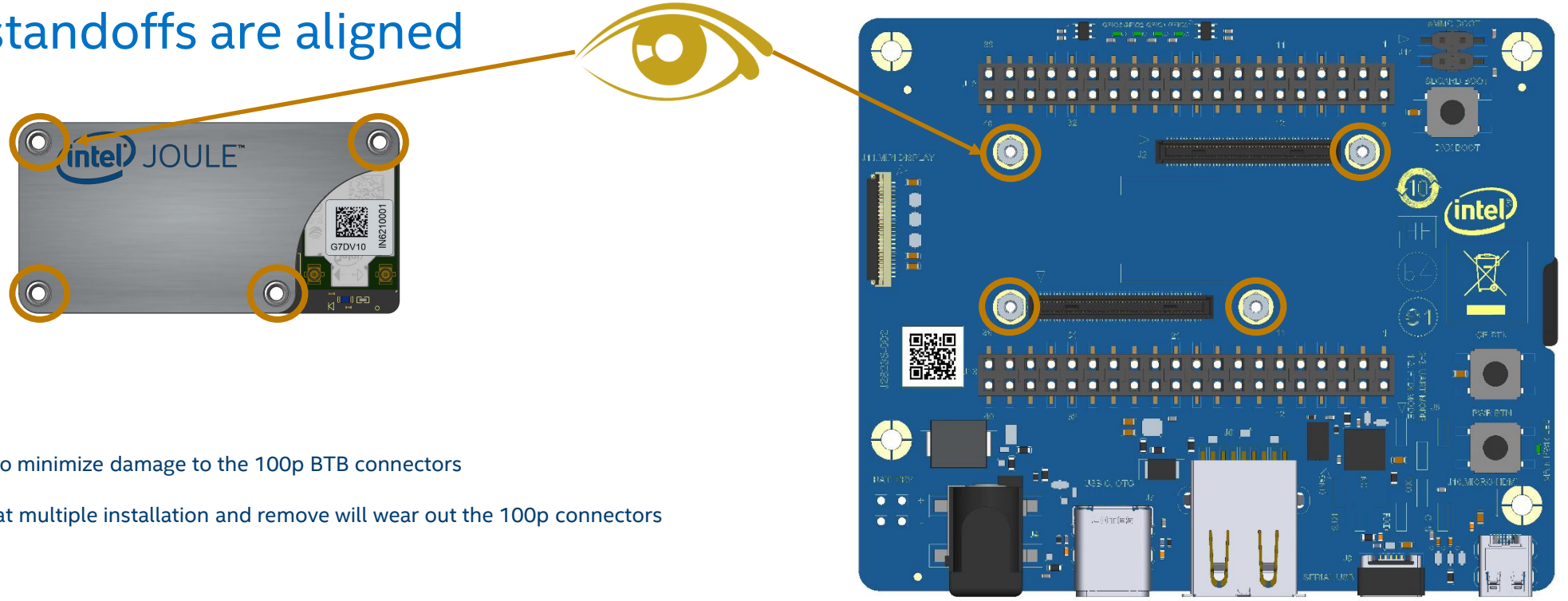


SECTION 4

Module Installation Recommendation

4. Module Installation Recommendation

- Visually align the mounting holes of the module with the standoffs on the carrier board
- Lightly set the module in place, on the mating connectors, once all four holes/standoffs are aligned

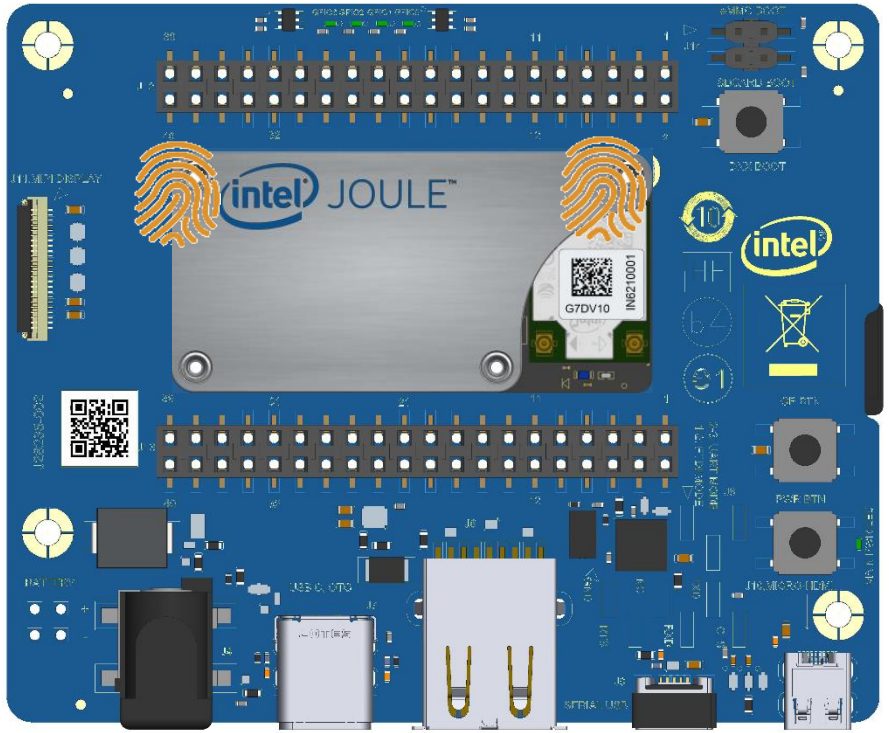


NOTE:

- Use caution to minimize damage to the 100p BTB connectors
- Take note that multiple installation and remove will wear out the 100p connectors

4. Module Installation Recommendation

- Using two fingers press evenly on the top two holes of the module
- This will engage the top 100p board to board (BTB) connector
- An audible “click” should be heard

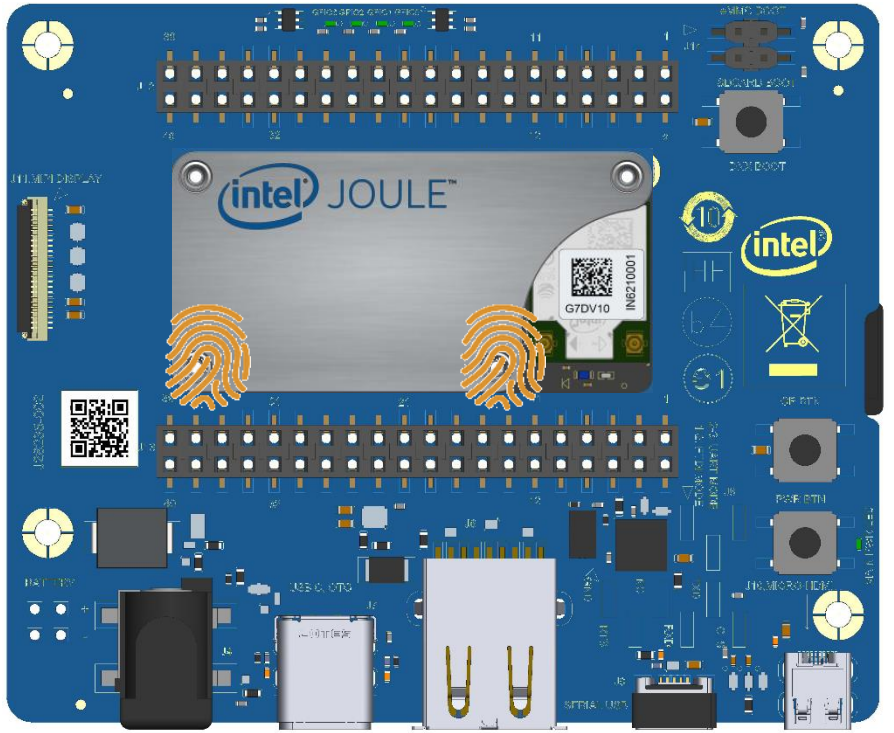


NOTE:

- Use caution to minimize damage to the 100p BTB connectors
- Take note that multiple installation and remove will wear out the 100p connectors

4. Module Installation Recommendation

- Using two fingers press evenly on the bottom two holes of the module
- This will engage the bottom 100p board to board (BTB) connector
- An audible “click” should be heard



NOTE:

- Use caution to minimize damage to the 100p BTB connectors
- Take note that multiple installation and remove will wear out the 100p connectors

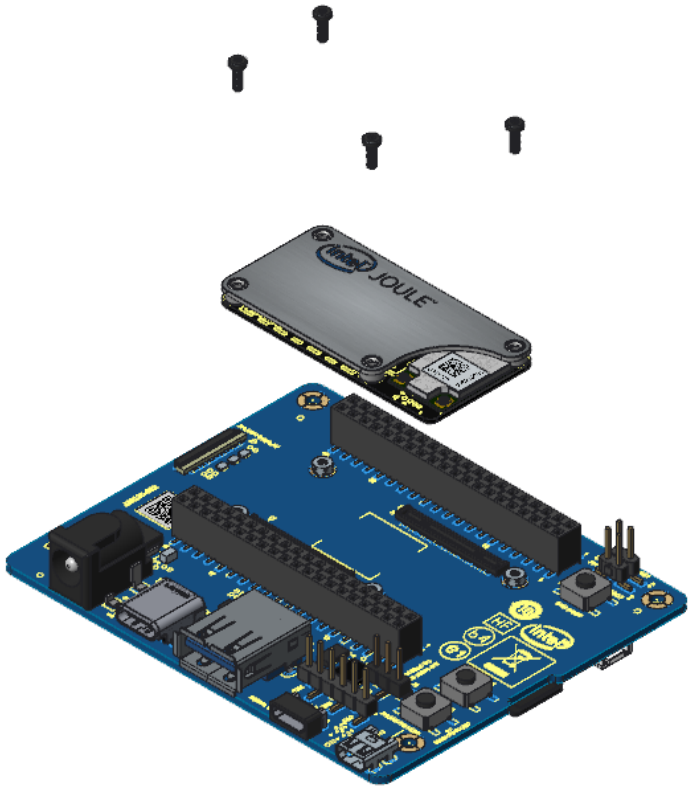
SECTION 5

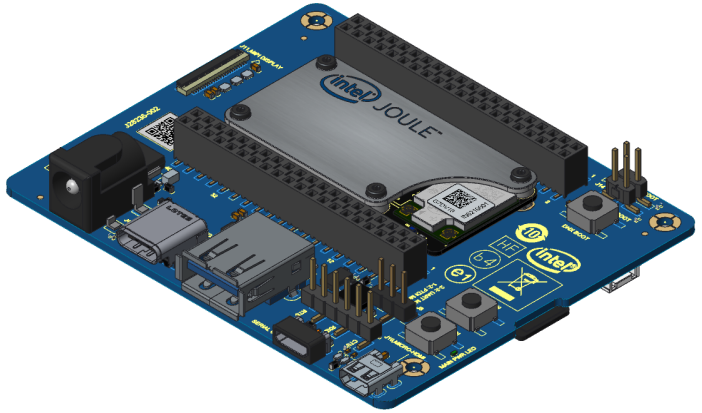
Mechanical Attach and Heatsink References

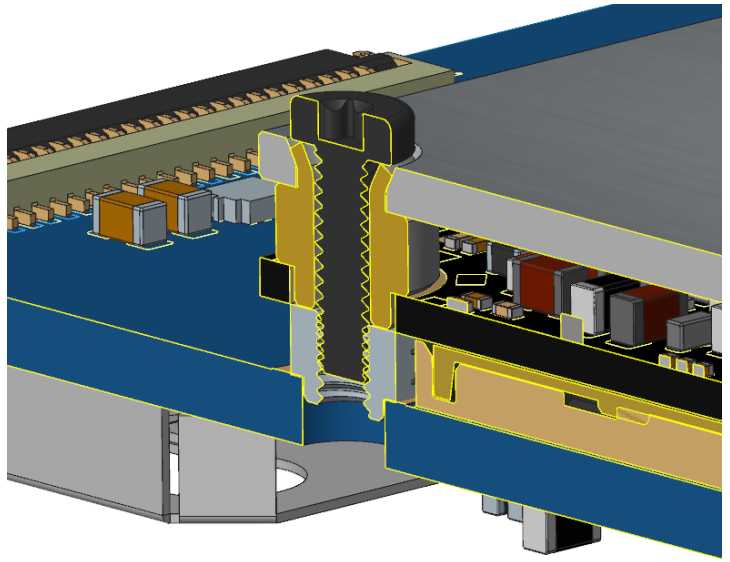
5. Mechanical Attach Recommendations

Module to expansion board mechanical attach recommendations

- Electrical connections between the module and carrier board are completed through the twin, 100p board to board connectors
- Mechanical connection is required to be (4) M1.6 screws that pass through the thermal transfer shield (permanently attached to the module) and fasten into the expansion board threaded (SMT) standoffs at ~0.9 in-lbs (~0.1 N-m) of torque.

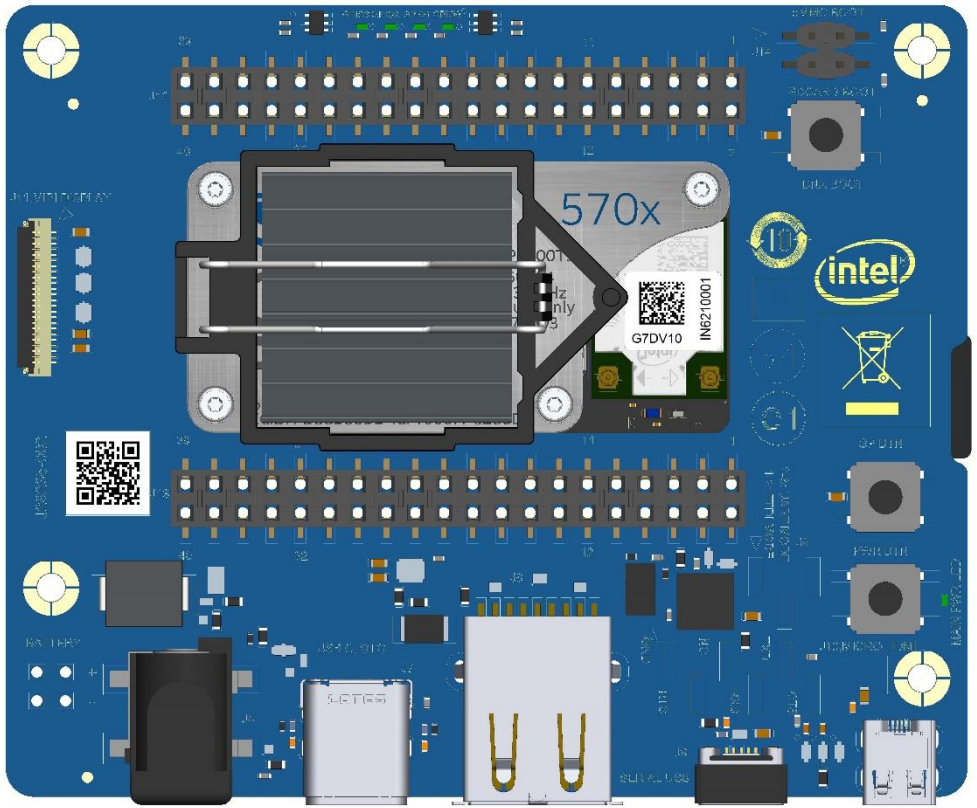


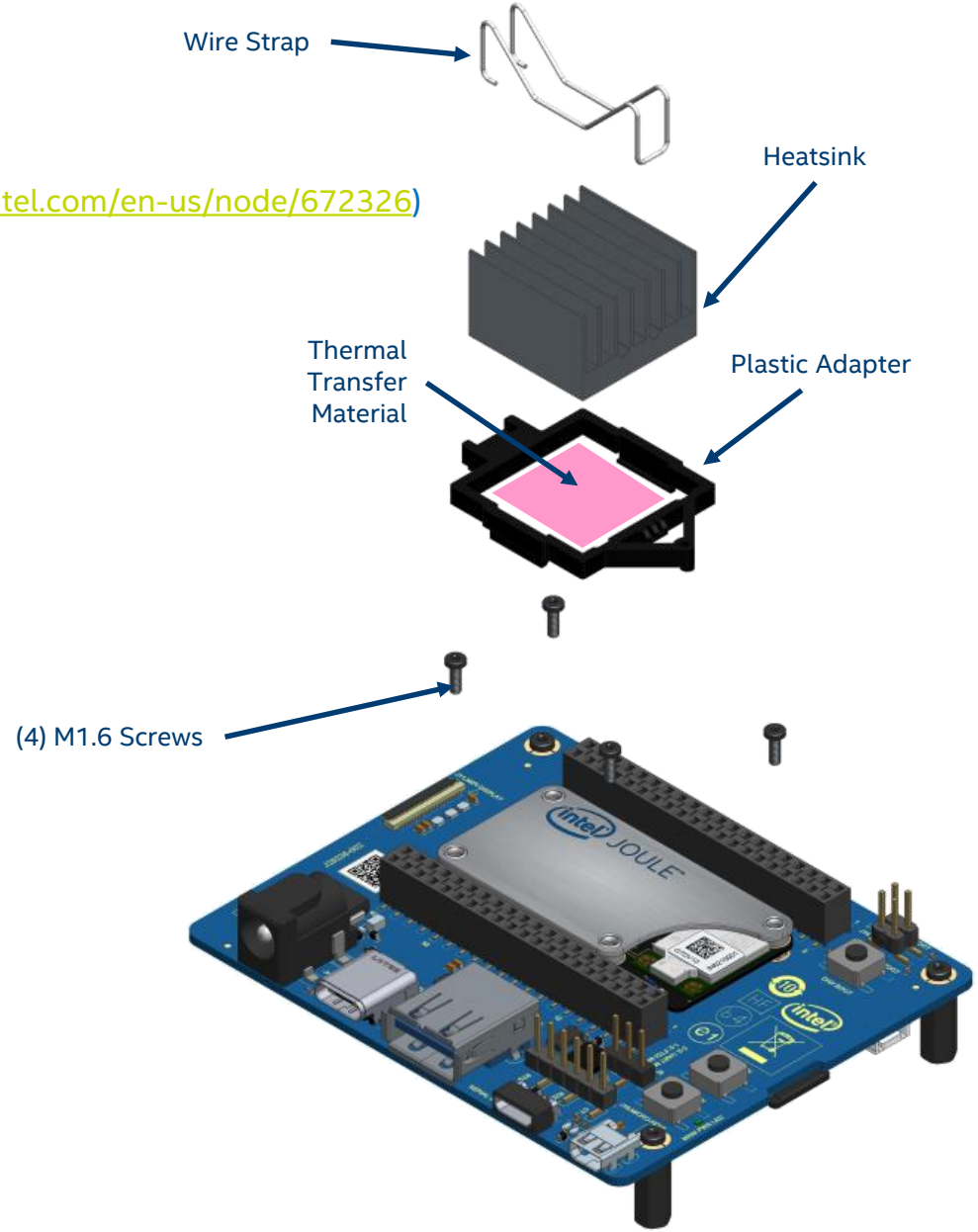


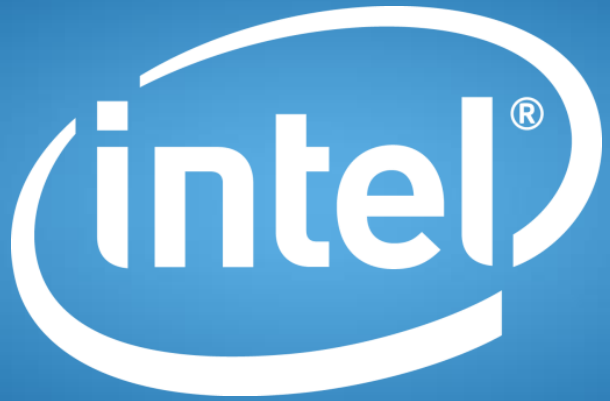


5. Cooling References

- See the user guide for instructions on installing the reference heatsink (https://software.intel.com/en-us/node/672326)
- See the platform thermal management guide for workloads and module power settings



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