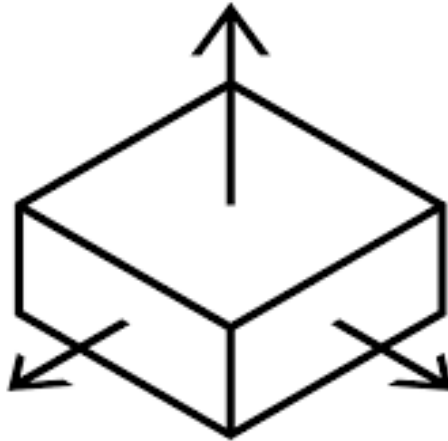


System Test for Hello IMU

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This document details the testing we have performed for our package solution.

Node/Unit Tests

Does every Unit work?

The unit tests can be found in separate pdf files in the “node-tests” folder.
Most notably, we just want to be sure that the subscriber can handle extreme inputs.

System Test/Integration test

Does the entire system work together?

Expected output for whole system:

If nodes work together nominally, the expected output for this system is that the database should be populated with measurements.

The system itself is just three nodes, so integration is the same as the entire system.

Real output:

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0001 seconds.)

```
SELECT * FROM `bno055_data`
```

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

id	timestamp	linear_accel_x	linear_accel_y	linear_accel_z	angular_velocity_z
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Query results operations

[Create view](#)

Empty database before the program has executed.

Showing rows 0 - 95 (96 total, Query took 0.0002 seconds.)

```
SELECT * FROM `bno055_data`
```

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

☒ Show all | Number of rows: All | Filter rows: Search this table | Sort by key: None

Extra options

	id	timestamp	linear_accel_x	linear_accel_y	linear_accel_z	angular_velocity_z
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	165	2025-11-07 13:03:45	0	0	-0.34	-0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	166	2025-11-07 13:03:45	0.02	0.03	-0.33	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	167	2025-11-07 13:03:45	0	0.01	-0.32	-0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	168	2025-11-07 13:03:46	-0.01	0.01	-0.3	0.002
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	169	2025-11-07 13:03:46	0	0.03	-0.33	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	170	2025-11-07 13:03:46	0	0	-0.33	-0.002
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	171	2025-11-07 13:03:46	-0.01	0.01	-0.3	-0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	172	2025-11-07 13:03:46	0	0.01	-0.32	-0.002
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	173	2025-11-07 13:03:47	0	0.03	-0.35	0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	174	2025-11-07 13:03:47	0	0	-0.31	-0.003
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	175	2025-11-07 13:03:47	0.01	0.02	-0.33	0.002
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	176	2025-11-07 13:03:47	0	0.02	-0.29	0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	177	2025-11-07 13:03:47	0	0.01	-0.29	-0.003
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	178	2025-11-07 13:03:48	0	0	-0.3	-0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	179	2025-11-07 13:03:48	0	0.01	-0.32	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	180	2025-11-07 13:03:48	0.02	0	-0.33	-0.002
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	181	2025-11-07 13:03:48	0	0.03	-0.34	0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	182	2025-11-07 13:03:48	0	0.03	-0.34	0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	183	2025-11-07 13:03:49	0.02	0.01	-0.34	0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	184	2025-11-07 13:03:49	0	0.01	-0.34	0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	185	2025-11-07 13:03:49	0	-0.01	-0.34	-0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	186	2025-11-07 13:03:49	0	0	-0.33	0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	187	2025-11-07 13:03:49	0	0.02	-0.3	-0.002
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	188	2025-11-07 13:03:50	0	0	-0.31	-0.001
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	189	2025-11-07 13:03:50	0	0.02	-0.33	0

Console ☐ Copy ☐ Delete

Filled database after the Wireless implementation has executed.

Showing rows 0 - 70 (71 total, Query took 0.0012 seconds.)

SELECT * FROM `bno055_data`

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all Number of rows: All Filter rows: Search this table Sort by key: None

Extra options

				id	timestamp	linear_accel_x	linear_accel_y	linear_accel_z	angular_velocity_z
<input type="checkbox"/>	Edit	Copy	Delete	94	2025-11-07 12:36:12	0.01	0	-0.33	-0.00109083
<input type="checkbox"/>	Edit	Copy	Delete	95	2025-11-07 12:36:12	0	0	-0.32	-0.00109083
<input type="checkbox"/>	Edit	Copy	Delete	96	2025-11-07 12:36:12	0	0.01	-0.31	0
<input type="checkbox"/>	Edit	Copy	Delete	97	2025-11-07 12:36:12	0	0.02	-0.35	0
<input type="checkbox"/>	Edit	Copy	Delete	98	2025-11-07 12:36:13	0	0.01	-0.33	-0.00109083
<input type="checkbox"/>	Edit	Copy	Delete	99	2025-11-07 12:36:13	0.02	-0.01	-0.34	0
<input type="checkbox"/>	Edit	Copy	Delete	100	2025-11-07 12:36:13	0.01	0.01	-0.31	0.00218166
<input type="checkbox"/>	Edit	Copy	Delete	101	2025-11-07 12:36:13	0	0.01	-0.34	-0.00218166
<input type="checkbox"/>	Edit	Copy	Delete	102	2025-11-07 12:36:14	0	0.03	-0.33	-0.00218166
<input type="checkbox"/>	Edit	Copy	Delete	103	2025-11-07 12:36:14	-0.02	0.02	-0.32	-0.00218166
<input type="checkbox"/>	Edit	Copy	Delete	104	2025-11-07 12:36:15	-0.01	0.03	-0.32	0.00109083
<input type="checkbox"/>	Edit	Copy	Delete	105	2025-11-07 12:36:15	0	0	-0.32	0
<input type="checkbox"/>	Edit	Copy	Delete	106	2025-11-07 12:36:15	0	0	-0.33	0.00109083
<input type="checkbox"/>	Edit	Copy	Delete	107	2025-11-07 12:36:15	0.01	0.01	-0.31	-0.00109083
<input type="checkbox"/>	Edit	Copy	Delete	108	2025-11-07 12:36:16	0	0.02	-0.33	-0.00109083
<input type="checkbox"/>	Edit	Copy	Delete	109	2025-11-07 12:36:16	0	0.02	-0.31	0
<input type="checkbox"/>	Edit	Copy	Delete	110	2025-11-07 12:36:17	0	0.02	-0.32	-0.00218166
<input type="checkbox"/>	Edit	Copy	Delete	111	2025-11-07 12:36:17	0	0	-0.35	0
<input type="checkbox"/>	Edit	Copy	Delete	112	2025-11-07 12:36:17	0	0	-0.32	0.00109083
<input type="checkbox"/>	Edit	Copy	Delete	113	2025-11-07 12:36:17	0.01	0.01	-0.31	0.00218166
<input type="checkbox"/>	Edit	Copy	Delete	114	2025-11-07 12:36:17	0	0	-0.33	0
<input type="checkbox"/>	Edit	Copy	Delete	115	2025-11-07 12:36:18	0	0.01	-0.31	-0.00109083
<input type="checkbox"/>	Edit	Copy	Delete	116	2025-11-07 12:36:18	0	0.03	-0.33	-0.00109083
<input type="checkbox"/>	Edit	Copy	Delete	117	2025-11-07 12:36:18	0	0.02	-0.33	-0.00109083

Filled database after the Wired implementation has executed.