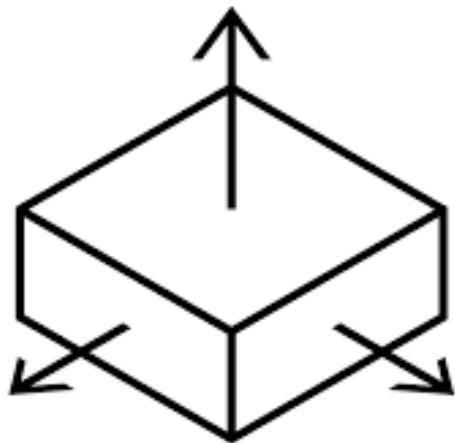


System Test for Hello IMU

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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]

<code>id</code>	<code>timestamp</code>	<code>linear_accel_x</code>	<code>linear_accel_y</code>	<code>linear_accel_z</code>	<code>angular_velocity_z</code>
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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]

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

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

Extra options

Filled database after the Wireless implementation has executed.

Showing rows 0 - 70 (71 total, Query took 0.0012 seconds.)						
SELECT * FROM `bno055_data`						
<input type="checkbox"/> 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						
<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.