

The Blu900 Health Monitoring Solution

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Why the change?

The 1 4 1 Gateway was based on a BeagleBone Black (BBB) Edge computer which became impossible to source During the pandemic.

YieldPoint made a strategic decision to develop its Blu900 solution using more modern, more robust, and more power efficient ARM Cortex controllers.

As part of this change a decision was made to offload functionality from the Blu900GW:

- (i) Configuration and setup using the BluPoint Android app.
- (ii) Health monitoring will be directed to VantagePoint in the cloud so that the readings data and the health data are more closely associated.



1 For 1 Gateway Health Tab



1 For 1 Gateway

- Home
- Data
- Settings
- Advanced Settings
- GDP settings
- Health
- Logout

Battery Life

Replace radio battery if voltage is below 4.8V. If the date is highlighted red, this means that a reading has not been taken in the last 24 hours.

	Radio Name	Radio Serial	Battery Voltage	RSSI	Date
<input type="checkbox"/>	1F1_1904-29	0013A2004191367A	11.750	-40	May 13 2019 - 14:22:50
<input type="checkbox"/>	1F1_1901-12	0013A2004191585C	11.550	-55	May 13 2019 - 14:22:50
<input type="checkbox"/>	1F1_1901-11	0013A2004191587A	11.680	-40	May 13 2019 - 14:22:50
<input type="checkbox"/>	1F1_1901-16	0013A20041915882	11.860	-40	May 13 2019 - 14:22:50
<input type="checkbox"/>	1F1_1901-14	0013A20041915899	11.650	-40	May 13 2019 - 14:22:50
<input type="checkbox"/>	1F1_1901-18	0013A2004191589C	11.910	-40	May 13 2019 - 14:22:50
<input type="checkbox"/>	1F1_1901-21	0013A200419473FE	11.870	-40	May 13 2019 - 14:22:50
<input type="checkbox"/>	1F1_1901-13	0013A2004194776A	11.680	-40	May 13 2019 - 14:22:50
<input type="checkbox"/>	1F1_1901-17	0013A200419477B0	11.440	-40	May 13 2019 - 14:22:50
<input type="checkbox"/>	1F1_1901-15	0013A200419477CC	11.330	-40	May 13 2019 - 14:22:50
<input type="checkbox"/>	1F1_1901-22	0013A20041947966	11.680	-40	May 13 2019 - 14:22:50

- Select All
- Delete Selected Radio

For the 1 4 1 Gateway the health monitoring data was stored onboard in a SQL database.

However, this solution did not scale well especially as the number of nodes on a gateway increased



Blu900 Gateway in VP

Dashboard Instruments Alerts Health Seismic events Blast events BluVibe events Settings yieldpoint

Dashboard / Gateway / 2307G002

Gateway ID: 2307G002 **Gateway Type:** Blu900GW

Data:
View Data Temporal Graph

Properties:
Name:
Project:
Location:
Level:
Install date:
Installed by:
Purpose:
Notes:

Settings:
Mesh ID: 4
Mesh Cycle: 10 Seconds
Radio Tx Power: +7 dBm (5mW)

Return

Blu900 Nodes:

Node	Current	Name	Type	Level	Project	Location	Action
2303N001	✓		Blu900				
2304N091	✓		Blu900				

2 Nodes →



Blu900 Gateway in VP



Dashboard / Gateway / 2307G002 / Raw Data

Blu900GW 2307G002

Rows 20

Export data Import data

Total Readings:30074

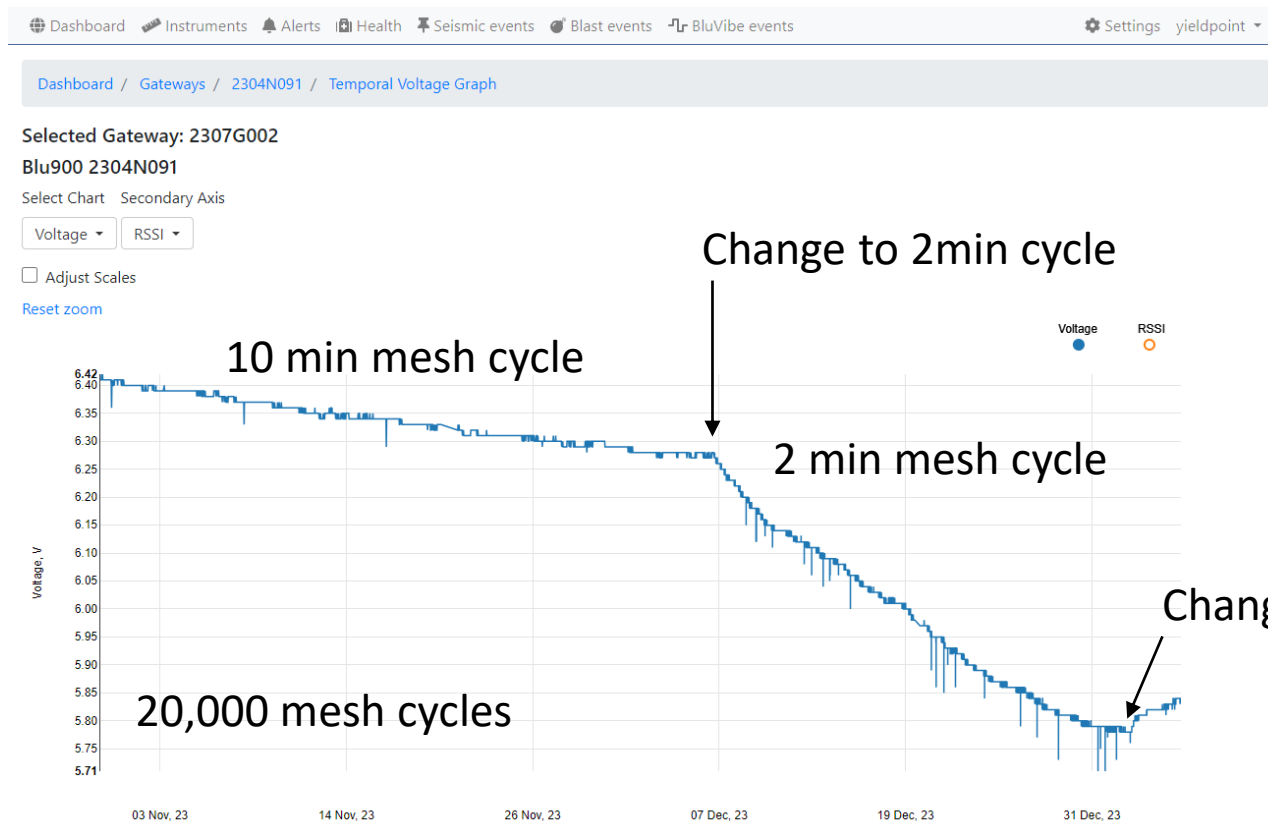
1 2 3 4 5 6 7 ... 1504 Page # Go

Date Test	FW Ver.	V	mesh_id	
23-09-27 11:22:21	2.126	7.83	4	
23-09-27 11:24:21	2.126	7.83	4	
23-09-27 11:26:25	2.126	7.81	4	
23-09-27 11:28:24	2.126	7.82	4	
23-09-27 11:30:21	2.126	7.83	4	
23-09-27 11:32:24	2.126	7.84	4	
23-09-27 11:34:20	2.126	7.83	4	
23-09-27 11:36:20	2.126	7.82	4	
23-09-27 11:40:20	2.126	7.82	4	
23-09-27 11:42:24	2.126	7.82	4	
23-09-27 11:44:20	2.126	7.82	4	
23-09-27 11:46:24	2.126	7.82	4	



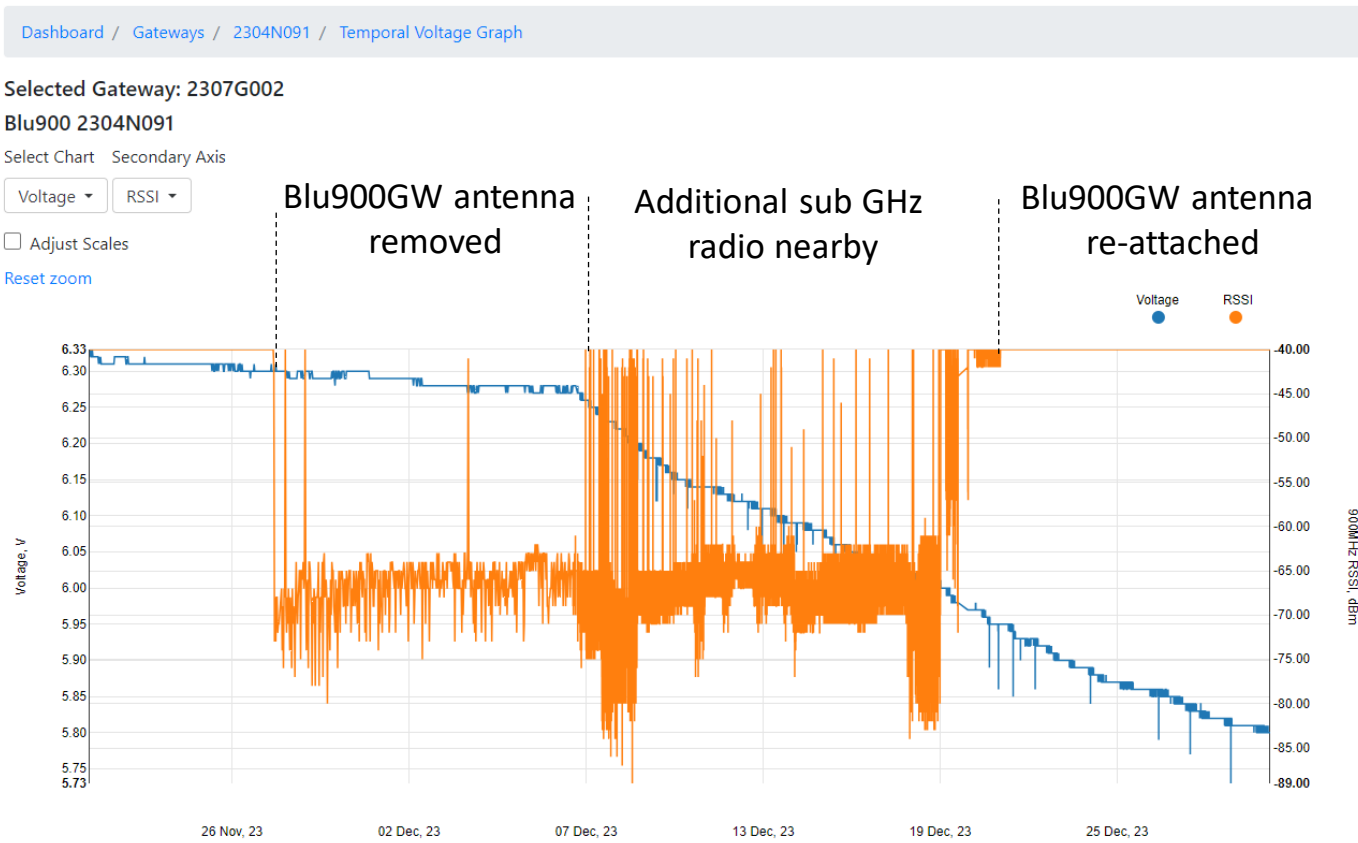
Blu900 Node in VP health

20,000 health readings just for this node



Blu900 Node in VP Health

20,000 health readings just for this node



Blu900 Node in VP Health

Relation between 3.6 V Primary lithium-thionyl chloride (Li-SOCl₂) and temperature

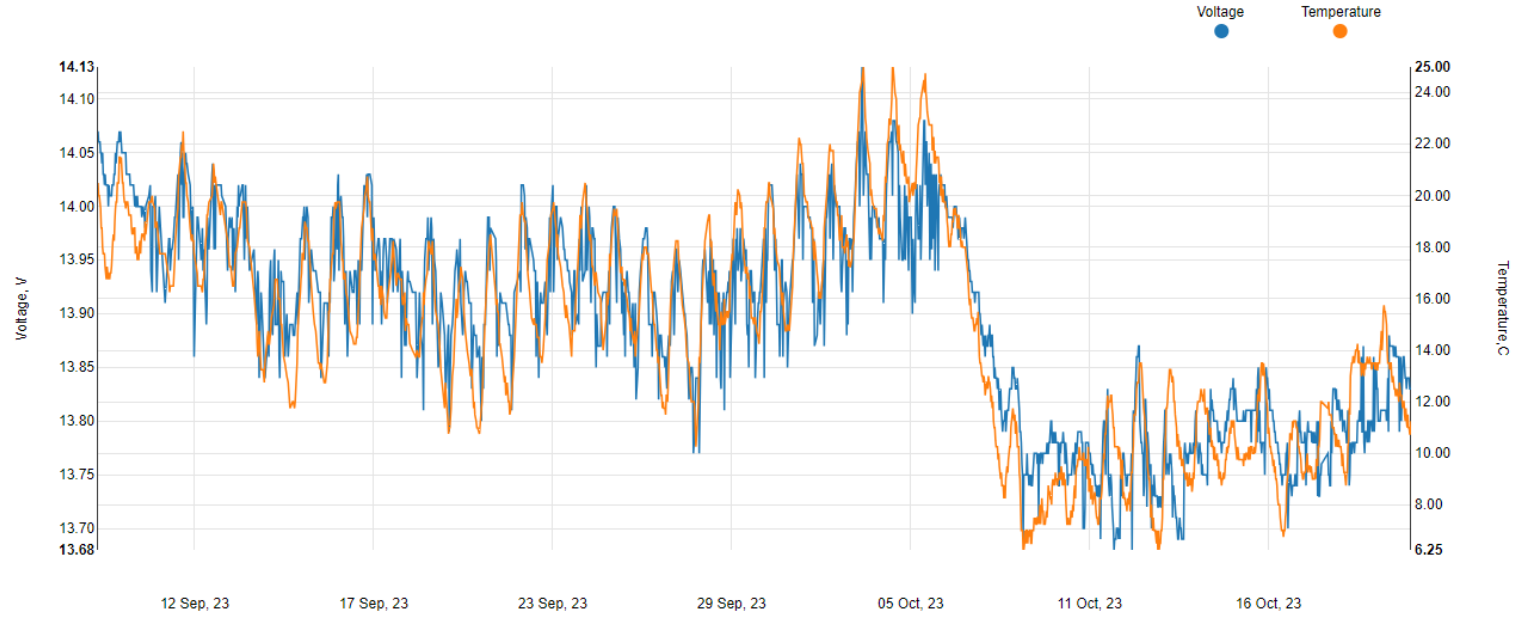
Dashboard / Gateways / 2303-55 / Temporal Temperature Graph

Selected Gateway: 2305GW01
Blu900 23040096
Select Chart Secondary Axis

Voltage Temperature

Adjust Scales

[Reset zoom](#)

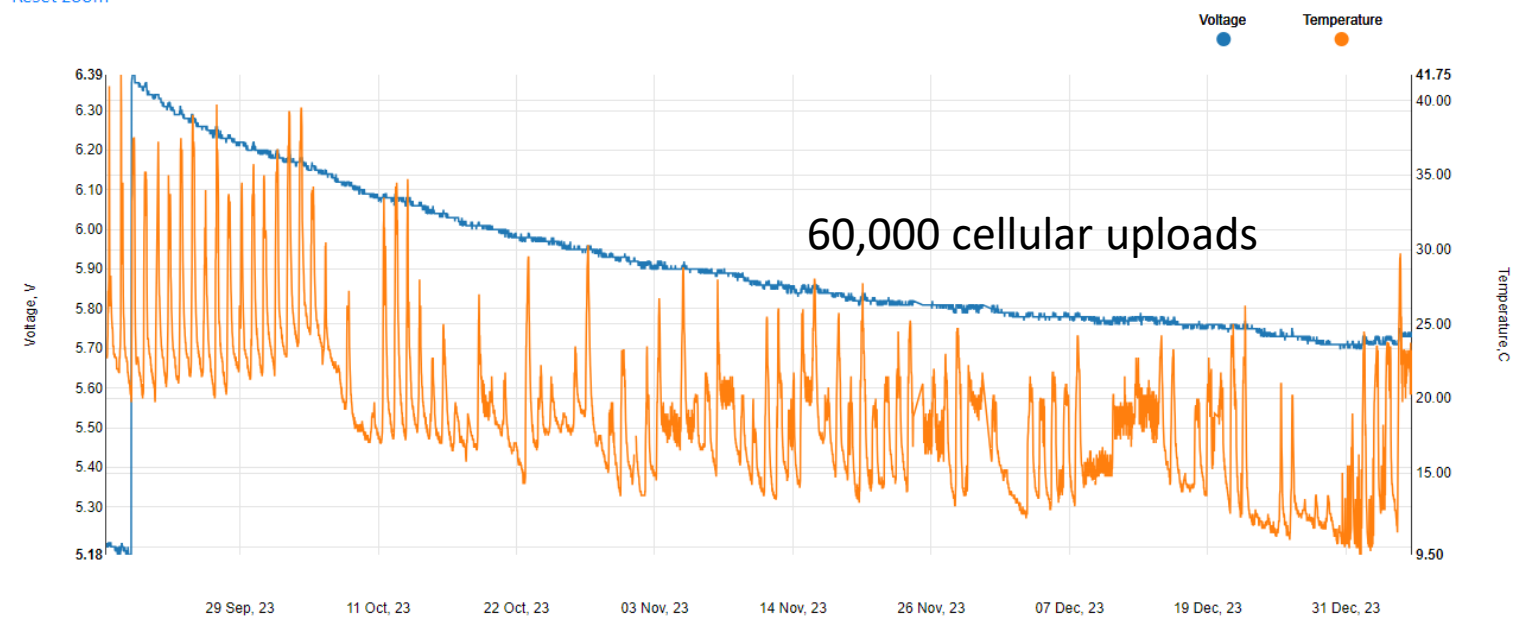


Blu900 Node in VP Health

Battery discharge for a cellular gateway. 4 x D-cell alkaline

Dashboard / Gateways / 2205-77 / Temporal Temperature Graph

BluCell 2205-77
Select Chart Secondary Axis
Voltage Temperature
 Adjust Scales
[Reset zoom](#)



Summary

Health monitoring for Blu900 telemetry components is a critical function within the ecosystem.

The health monitoring of populations of nodes on a single Blu900GW with multiple nodes becomes data intensive over time.

The redirection of health monitoring from the gateway to VP in the cloud is a much more scale-able and valuable solution.

The data can be graphed over time and inter-relations between variables (e.g. temp and voltage) can be investigated.

Alarms and alerts can be set.

The solution will continue to evolve.

