

G-TH WL WIRELESS

BATTERY MONITORING SYSTEM



ADVANTAGES



**REAL-TIME & ONLINE
MONITORING**



**COMPREHENSIVE
FEATURES**

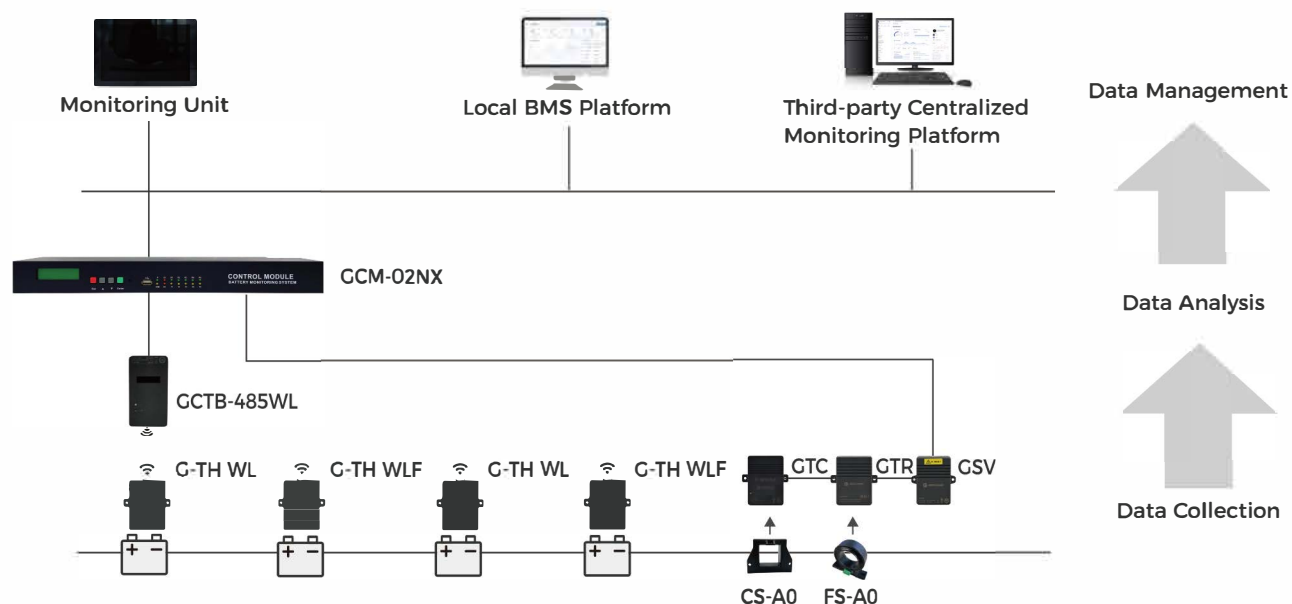


**DISTRIBUTED
ARCHITECTURE**



**WIRELESS
COMMUNICATION**

TOPOLOGY



FEATURES & BENEFITS

ZigBee Wireless Communication	Adopt exclusive ZigBee wireless communication technology, featuring good timeliness and high stability. Own innovative wireless relay function that effectively reduces the wireless communication packet loss rate between the sub-module and the control module. Each control module up to manage 600 cells. Own intelligent communication port and frequency choice, with strong anti-interference.
Real-time Data Monitoring and Alarming	Manage cells by providing real-time, online and accurate data and detecting weak batteries in a safe manner. Monitor cell voltage, cell internal resistance and cell negative pole temperature. When the parameters are abnormal, the devices will promptly alarm, which can eliminate the hidden safety problems caused by the periodic detection of the former manual inspection.
Advanced Low Power Consumption Design	Adopt advanced power consumption management method and improved circuit to render the G-TH WL module working current no more than 11 mA, which is far below the industry average.
Intelligent analysis	Apply intelligent analyses to detect low effective battery, monitor the safe operating environment, help cell selection, and export analysis report clear and easy to understand. Adopt new collection mechanism to realize the fast data updates, ensure the data accuracy and reduce delay, which makes the data collection more precise and reliable.
High-accuracy SOC/SOH	Own online parameter identification, self-correction of charging, no jump, which renders SOC error of all working conditions no more than 5%, and hence improves battery utilization ratio and operational safety. Refer to the advantages of various algorithms such as Kalman filter, multi-dimensional, fuzzy network neural, and open circuit voltage method. Provide high accuracy SOC estimation, improving the SOC accuracy of traditional BMS from $\pm 20\%$ to $\pm 5\%$.

MONITORED PARAMETERS

Cell Internal Resistance	Cell Voltage	Cell Temperature	Ambient Temperature
Charge/Discharge Current	String Voltage	Intelligent Balance	

SPECIFICATIONS

Items	Name		Parameter	Items	Name		Parameter	
Environment	Operating temperature		-20~+60°C(0~2000mASL)	Power Requirements & Consumption	Model	Powered By	Current	Consumption
	Relative humidity		5~95%		G-TH-02WL	Battery	≤20mA	< 50mW
	Atmospheric pressure		80~110kPa		G-TH-12WL	Battery	≤11mA	< 200mW
Reliability	Automatic restarttrigger		Built-in WDT		GTC	CM module or external power 10.8~13.8VDC	≤210mA	< 2W
	MTBF		100,000 hours		GCTB-485WL	CM module or external power 10.8~13.8VDC	≤20mA	< 0.3W
Certification	EMC		EN 55032:2015+A11:2020 EN 55035:2017+A11:2020 EN 61000-3-3:2013+A1:2019 ENIEC 61000-3-2:2019		GCM-02NX	100~240VAC(rated) 90~264VAC(max)	≤0.4A	< 15W
	RED		EN 301489-1V2.2.3 EN 301489-17 V3.2.4	Measuring Range & Accuracy	Measuring Content	Range	Accuracy	Resolution
	Safety		EN 61010-1:2010		String Voltage	2V,12V	±0.5%	0.1V
	CE and TTL certification				Cell Voltage	2V,12V	±0.1%	0.001V
Performance	Up to manage6 strings, a total of 600 cells				Cell Internal Resistance	50~65535 μΩ	±2% (repetitive accuracy)	1 μΩ
Uplink Communications Interfaces	RS485,LAN,dry contact SupportMODBUS/RTU, TCP and SNMP protocols				Temperature	-5~+99.9°C	±1°C	0.1°C
Downlink Communications Interfaces	Radio frequency communication ZigBeeprotocols				Charge/Discharge Current	±1500A	±1%	0.1A
					SOC/SOH	-	±5%	1%

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