

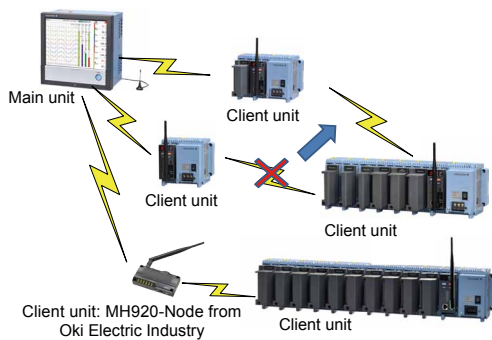
920 MHz Wireless Model of the GX/GM Series SMARTDAC+ Data Acquisition and Control System



The SMARTDAC+ 920 MHz wireless models offer wireless communication in the 920 MHz band, while maintaining the features of the GX/GM series such as excellent operability, flexibility, and expandability of system configuration. The wireless communication function enables centralized monitoring and recording of data from measurement points distributed in the field without the need of wiring.

MAJOR FEATURES

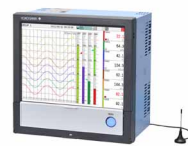
- Excellent connectivity
 - There is no need to obtain a license to use the 920 MHz band, which was opened up for wireless communications in 2012. Radio waves in this band have excellent reachability (approximately 1 km with a clear line of sight) and obstacle avoidance. Thus, this band is suitable for constructing networks covering multiple floors in a building.
 - To improve communication quality, this model uses multi-hop technology that enables multiple communication routes. Comparing communication quality among each wireless unit, this technology selects the optimum communication path.
 - When wireless communication is temporarily disrupted on one path due to poor reception or other reasons, multi-hop communication secures stable communication via another path.



Multi-hop wireless communication

- Enhanced by original functions of SMARTDAC+
 - Compliance with FDA 21 CFR Part 11

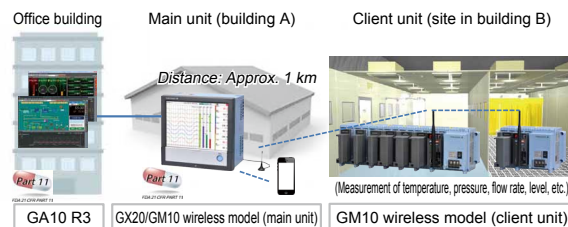
Originally, the GX20/GM10 comply with FDA 21 CFR Part 11 (regulation for the pharmaceutical industry). Their wireless models can flexibly handle changes in the floor layout. It is also possible to centrally monitor and record data from measurement points distributed in a drug warehouse, for example, by making the data conform to Part 11. Each client device can be configured to save data in case any data are missed during wireless communication.



GX20 (main unit)



GM10 (main/client unit)



- Various communication functions for the IoT

The GX20/GM10, which are main units allowing for centralized monitoring and recording, conform to various communication standards including OPC-UA, a communication infrastructure for Industrie 4.0. This communication function enables a subsystem configuration that bundles wireless data from client units (sensors) and relays them to the host system.

MAJOR SPECIFICATIONS OF 920 MHz WIRELESS MODELS

Only wireless specifications are shown below; other specifications are the same as those of the main unit.

Item	Specifications
Standard	IEEE802.15.4g/ARIB STD-T108
Carrier frequency band	922.3–928.1 MHz
Number of wireless channels	28
Maximum transmission output	20 mW
Maximum number of client units	100 (number of client units connected to one main unit)
Communication distance	Approx. 1 km (with a clear line of sight)
Communication method	Mesh, multi-hop (maximum number of hops: 16)
LED display	Communication status is displayed by ST1_green/red and ST2_green/red.
Modulation method	GFSK
Setting/communication checking	Dedicated software offers the following functions: · Wireless setting and checking of setting information · Checking of wireless communication status
Security function	AES 128-bit encryption
Antenna	Internal antenna or external antenna (SMA connector)

Contact us:
 Control Instruments Dept., Product Business Center,
 IA Platform Business Headquarters
 Tel: +81-422-52-5631 Fax: +81-422-52-6134
 E-mail: ns-snowner@cs.jp.yokogawa.com
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