

## WL40F Series 900 MHz ISM Band Wireless I/O System

- Licence-free 900 MHz ISM band
- FCC Part 15 compliant wireless module\*
- Modbus-RTU transparent gateway and I/O
- Multi-hop technology solves various challenges of implementing a reliable wireless communication network.
- Supporting of low-speed moving devices makes the WL40F Series ideal for data gathering for AGVs.

FCC Part 15 compliant



WL40EW2F  
Wireless Gateway with rooftop antenna

WL40MW1F  
sleeve antenna

\* This device is approved for use only in the US.

Radio wave test

Required before introducing the system.

M-System WL40F Series Wireless I/O System employs a licence-free 900 MHz ISM band module. Compared with 2.4 GHz / 5 GHz wireless LANs and other wireless networks dedicated for instrumentation using higher frequency bands, the 900 MHz band ensures stable communication quality for a long distance transmission, suitable for telemetry, multiplex transmission systems and data logging applications with various sensors/devices including low-speed moving entities.

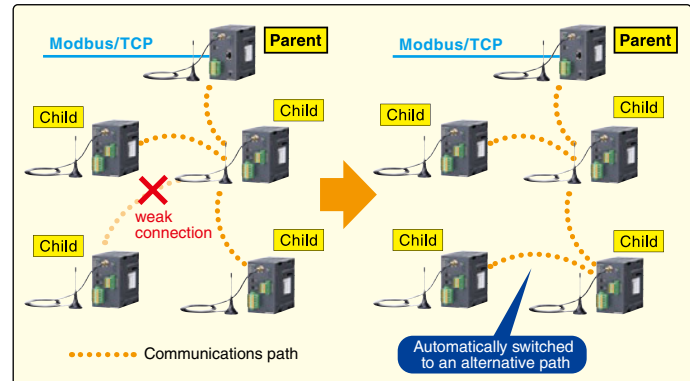
Modbus-RTU transparent devices can easily replace existing wired ones, and various industry standard sensors/devices can be added to the network.

### MULTI-HOP TECHNOLOGY

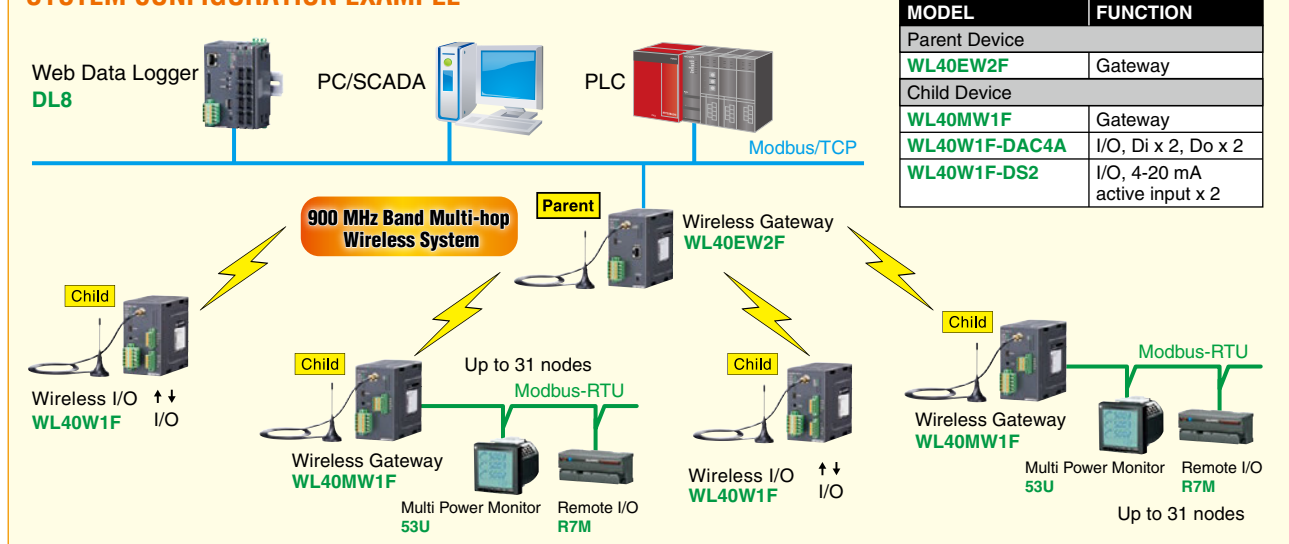
Multi-hop wireless communication is a wireless network conveying data through a number of wireless communication devices in a "bucket-brigade" manner.

Relaying paths are automatically switched to an alternative one when one section of the connection is weak.

In the WL40F Series, up to 100 child stations connect to a single parent station. The communications distance between stations can be up to 0.62 miles (1 km), thus making it possible to construct a wireless network in a wide range.



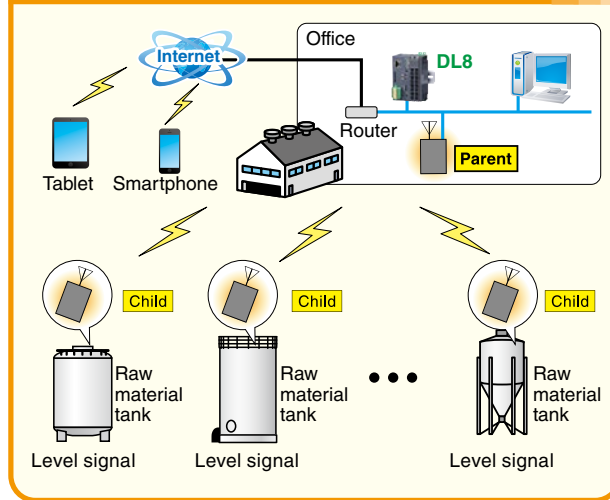
### SYSTEM CONFIGURATION EXAMPLE



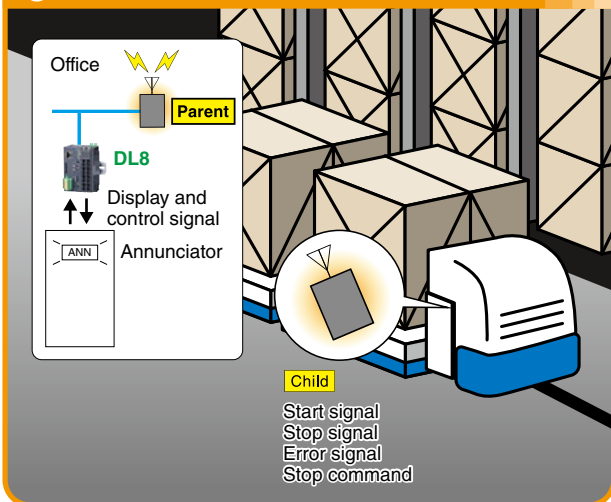
**POWER & WIRELESS SPECIFICATIONS**

Power input	12 V or 24 V DC
Communication standard	IEEE 802.15.4g
Frequency	900 MHz band (902 to 928 MHz)
Max. transmission power	20 mW
Band width	400 kHz
Modulation	GFSK
Baud rate	Max. 100 kbps
Channels	1 to 43 ch
Security	128 bit AES
Indicator LEDs	920Run, 920Link, 920ERR (child devices)
Number of child devices	Max. 100
Protocol	Modbus-RTU
Communication module	Coordination module (parent) and router module (child) by Oki Electric Industry Co., Ltd.
Radio parameters setting	Web browser (parent) Configuration software (child)
Max. transmission distance	Approx. 0.62 miles (1 km)

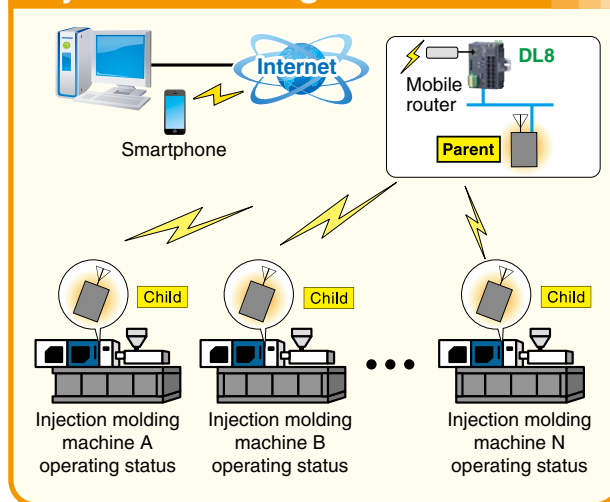
**Residual quantity management of factory tanks**



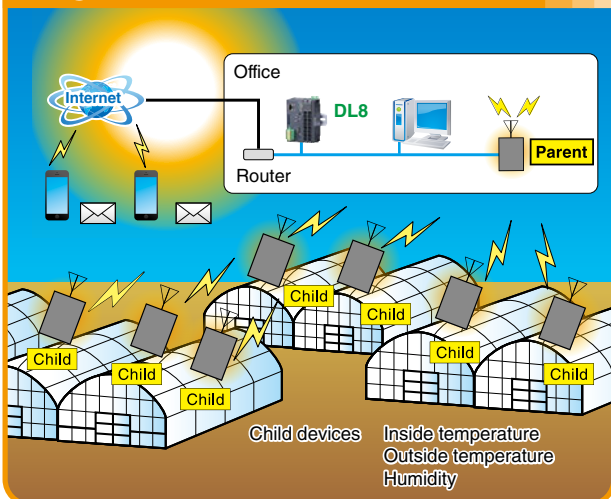
**Remote control of automated guided vehicles**



**Predictive maintenance of injection molding machines**



**Remote monitoring and control of greenhouses**



**Remote monitoring of food warehouses**

