

PATLITE®
New Frontiers in Safety, Security and Comfort.



AirGRID
Wireless Data Acquisition System

AirGRID

Signal Tower and Data Tracking in One

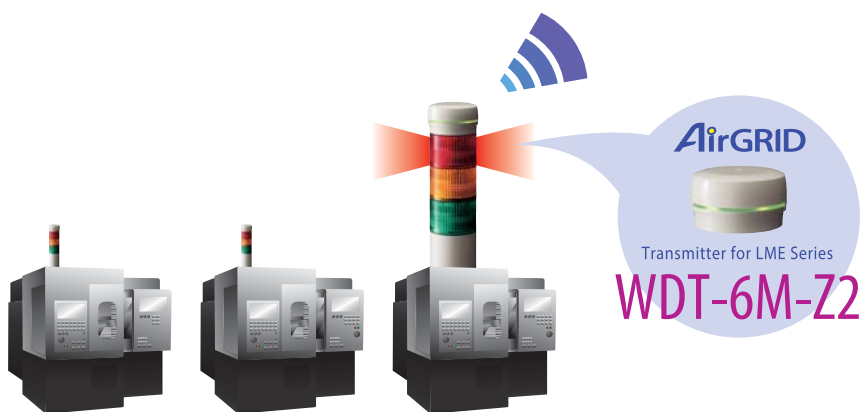
AirGRID, a term that describes the PATLITE data acquisition system, wirelessly forwards machine status information from various locations and collects it on a centrally designated computer.*

Data can be simultaneously transmitted securely, using internationally standardized wireless communication. User's need for various pieces of information is collected during production, so that quicker action can be taken to improve productivity. The stored data can be later analyzed to improve production and find ways to decrease downtime.

* PATLITE's Signal Towers can be easily adapted to the AirGrid system by simply adding a transmitter on top by removing the cap and attaching the Signal Tower.

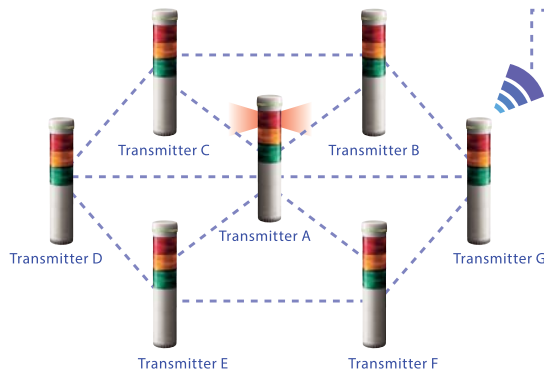


J u s t M o u n t I t ! !
Operating status data is transmitted wirelessly.



■ Wireless Communications System

■ Multihopping wireless networking for accurate and reliable communication

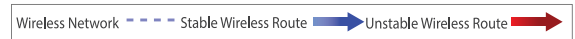


AirGrid automatically selects the best route when modifications have been made to the floor layout, so data communication starts automatically from power-up.

The multi-hop mesh network communication is flexible enough to respond to varying conditions.*

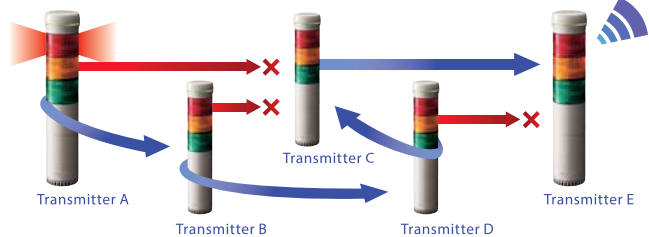
*Note:

1. Signal can hop a maximum of five times.
2. Distance between transmitters is no more than 30 meters.
3. Linear Hopping may not work.



■ Automatic Routing function selects optimum communication

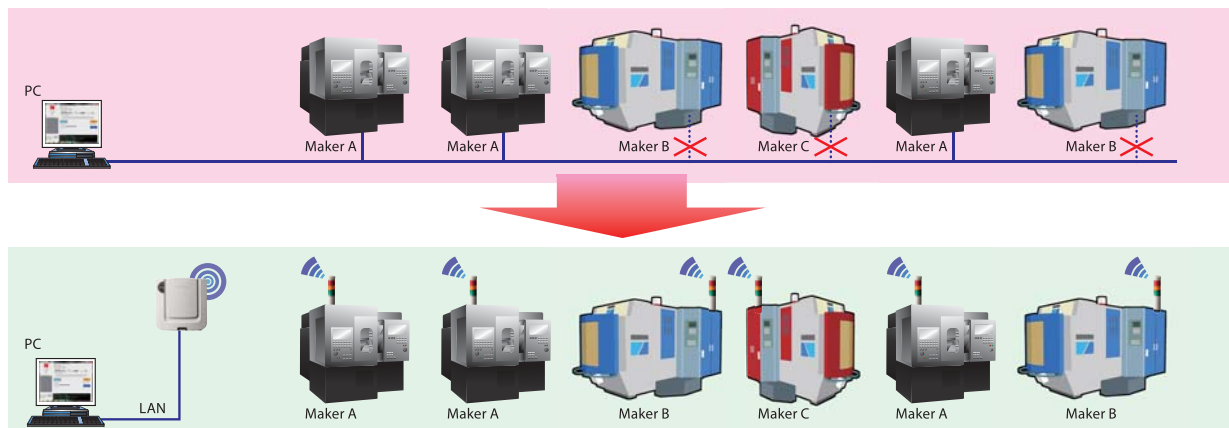
The AirGrid doesn't need complicated wireless or network settings. It automatically selects the best route to carry data communication as soon as the power source is connected. In addition, when an obstacle impairs data transmission, the transmitter automatically searches for a different route to re-connect.



■ Application Example

■ Problem

It's necessary to identify the operating condition of machines and workflow in our factory, where improvement is necessary. However, installation of effective networking systems is rather difficult because old and new machines are independently working on the same plant floor.



■ Solution

Monitoring machine status is very easy by adding a Signal Tower with communication, just by adding one transmitter unit to the machine's signal tower.

Transmitter



Signal Tower LME Transmitter

WDT-6M-Z2

Open Price

Corresponding Model LME Series	Current Consumption 35mA
Maximum Links 30units	Transmission Distance 30m



Signal Tower LE Transmitter

WDT-5E-Z2

Open Price

Corresponding Model LE Series	Current Consumption 20mA
Maximum Links 30units	Transmission Distance 30m



Stationary Receiver

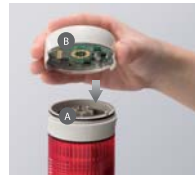
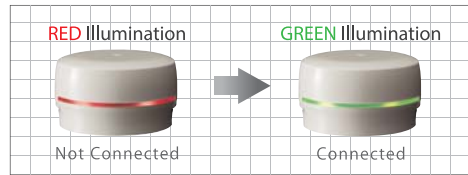
WDR-LE-Z2

Open Price

Connection Type LAN/USB	Current Consumption 65mA
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Multiple Units

Network Connection Condition



Transmitter Installation

Affix the transmitter adaptor on the Signal Tower (A) and fasten it with the center screw. Then simply attach the transmitter (B) to the bracket. (Some applications don't require additional wiring.)

- ※1 The radio reception depends on the environment and installed location. 20 units represents the recommended number of links.
- ※2 Multiple LAN connections can be simultaneously linked. (Please inquire for more details)

General Specifications

Item	Specifications	
Model Name	WDT-6M-Z2	WDT-5E-Z2
Corresponding Signal Tower	LME Series	LE Series
Rated Voltage	DC24V (Non-polar)	
Operating Voltage Range	DC21.6V - DC26.4V	
Current Consumption	20mA ±10mA	
Operating Temperature Range	-10 to 60°C	
Relative Humidity	RH 85% or less (No Condensation)	
Storage Temperature Range	-20 to 70°C (No Freezing)	
Mounting Direction (Indoor Only)	Upright Only	
Protection Rating	Conforms to installed Signal Tower	
Mass	52g±5g	

General Specifications

Item	Specifications
Model Name	WDR-LE-Z2
Rated Voltage	DC24V
Operating Voltage Range	DC21.6V - DC26.4V
Current Consumption	65mA ±15mA
Operating Temperature Range	-10 - 60°C 0 - 40°C (When AC Adaptor is used)
Relative Humidity	No more than 85% RH (No condensation)
Storage Temperature Range	-20 - 70°C -10 - 70°C (When AC Adaptor is used) (No Freezing)
Mounting Direction (Indoor Only)	Upright (Wall Mount) or Sideways (Level Surface Mounting) for Indoors Only
Protection Rating	IP20
Mass	170g ±10g

Wireless Specification

Item	Specifications
Wireless Communication Standard	IEEE 802.15.4
Wireless Communication Frequency	2405MHz - 2480MHz (16 Channels)
Wireless Transmission Method	Direct Spread (DS-SS) System*1
Wireless Transmission Standard	ZigBee2007 Conformity ZigbeePRO Stack Loading (Unique Profile Implementation)
Wireless Transmission Speed	Maximum Theoretical Speed of 250k-bps*2
Wireless Transmission Output	Maximum 3 mW (From Antenna Source)
Radio Frequency Range	Direct Sight of about 60m (Reference Value)*3
Number of Relays	Maximum 30 Relays
Compliances	North America: FCC, UL (For WDT) Europe: RoHS Japan: Radio law, Electrical Appliance and Material Safety Law (WDR-LE-Z2)

Function

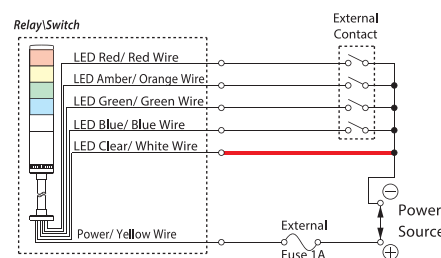
Item	Specifications
Model Name	WDR-LE-Z2
Transmission Specifications	ETHERNET 10BASE-T/100BASE-TX (Full/Half Duplex) USB USB1.1/USB2.0 - Supports Full-speed (Not supported for USB Hub connections)
Output Specification	Non-voltage Contact: 1 Output (DC24V 500mA) Connection

- *1 : DS-SS = Direct Sequence-Spread Spectrum
- *2 : The radio transmission is dependent upon the environment and installed location.
- *3 : The radio transmission is dependent upon the environment, installed location and number of communications.

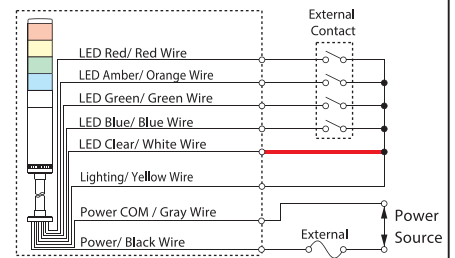
Wiring Diagram

As shown in the following figure, always supply power from one open signal line to be used as the power supply[※]. (The example shows the white signal line as a supply for power)

■ AC/DC 24V Type



■ AC 100/120/220/230 - 240V Type



※ Be sure to consult with, or hire a professional contractor when wiring is required.

The signal line (the figure indicates the white line) is assigned as the power supply source and the power supply is the source line (Yellow) to supply power to the unit.

AirANDON

ANDON Monitoring Software

WDS-AS1

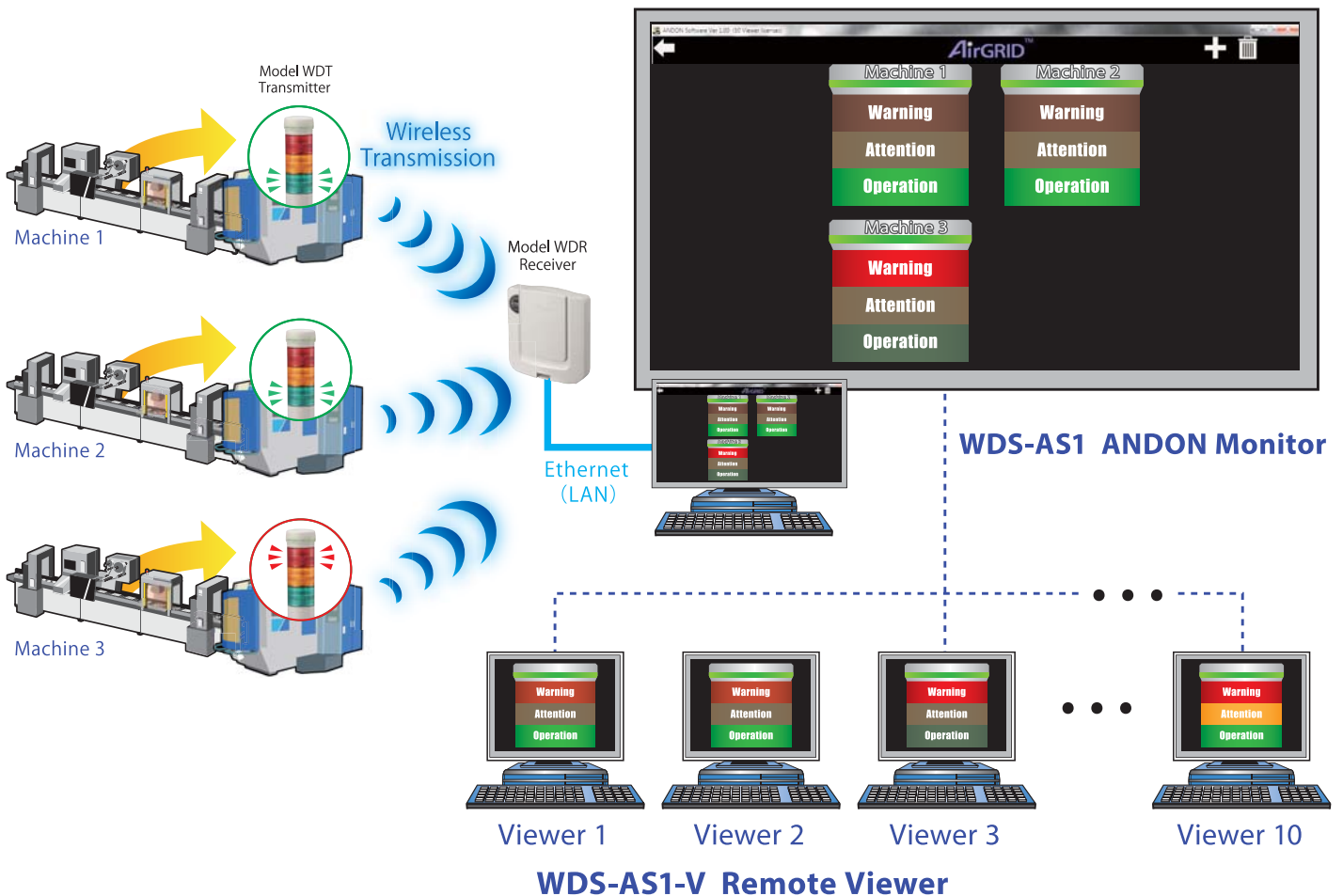
Monitor information from all equipment anywhere in the factory.

Remote Viewer Software

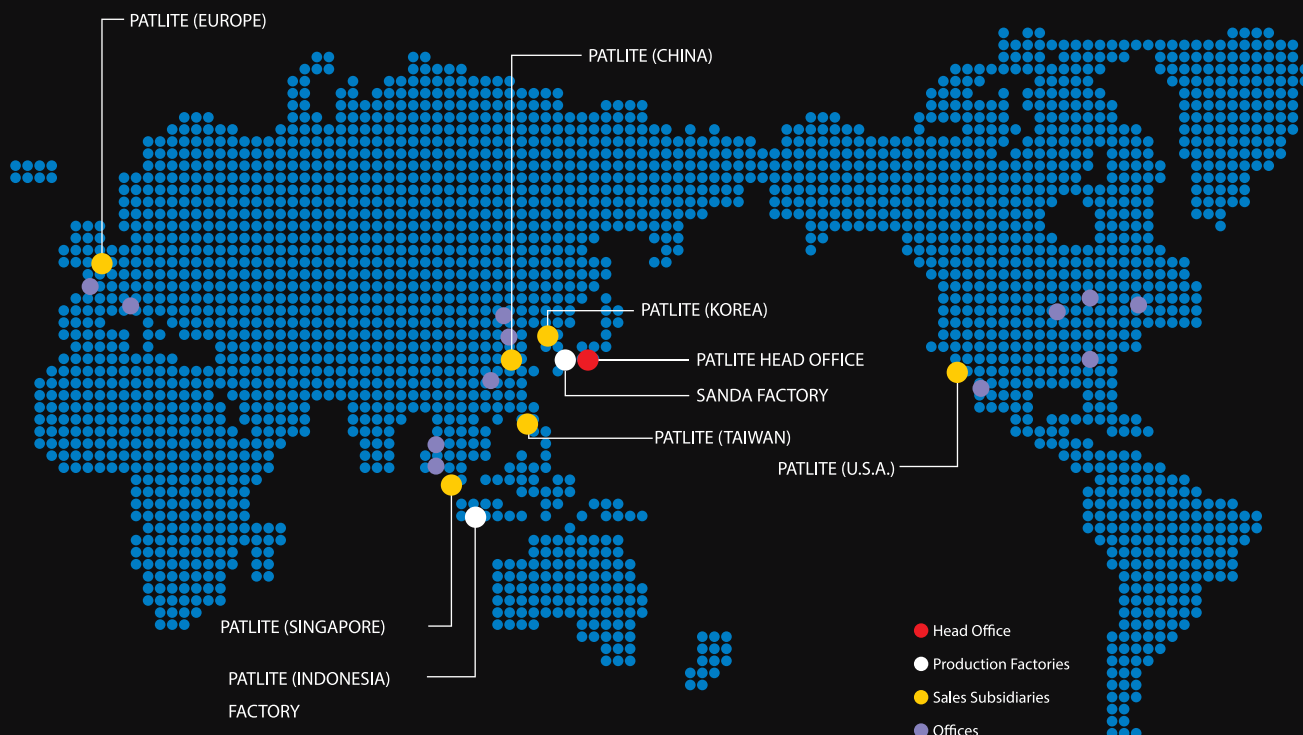
WDS-AS1-V



- Interfacing the WDS-AS1 ANDON Monitor Software is easy to set up to wirelessly collect all the information of signal towers.
- Using the WDS-AS1-V Remote Viewer Software can allow closer viewing of the important data from the factory lines.



Up to 10 Monitors can be connected via LAN Hub or Wireless/LAN Router



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ISO9001:2008 Authentication
ISO14001:2008 Authentication

Standard for Quality Control and Quality Assurance) and ISO 14001 (Environmental Management System Standard) authentication which is defined by the International Organization for Standardization.

⚠ CAUTION

To ensure correct use of these products, read the "Instruction Manual" prior to use. Failure to follow all safeguards can result in fire, electric shock, or other accidents. Specifications are subject to change without notice.

