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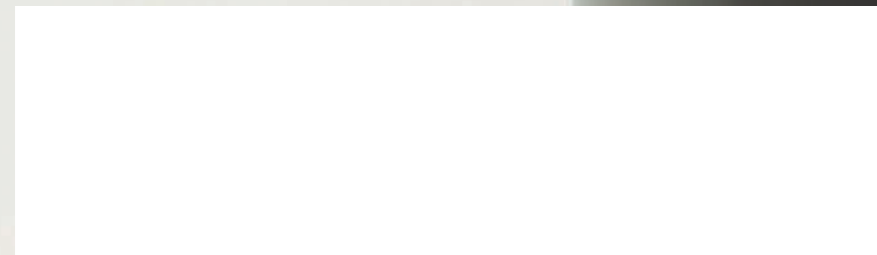


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**PATLITE®**



**AirGRID®**  
Wireless Data Acquisition System



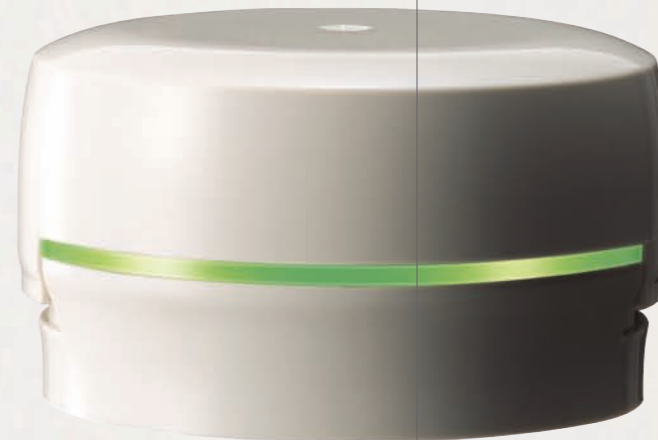
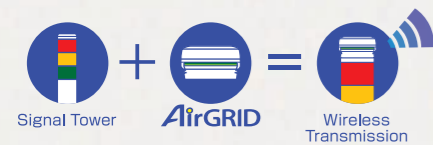
Wireless Data Acquisition System

# AirGRID

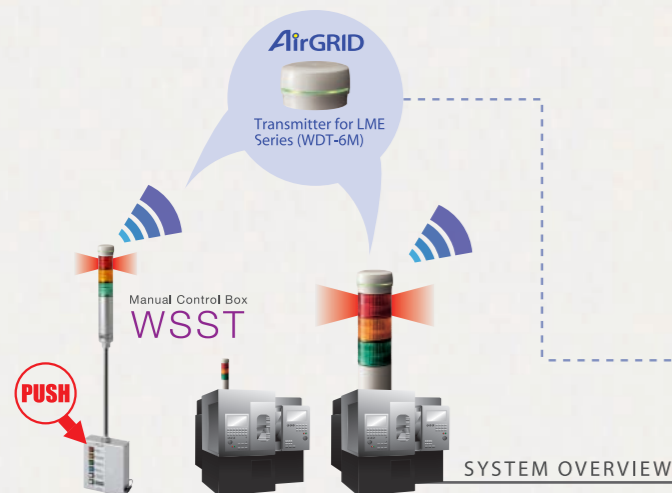
From the reporting tower light to the recording tower light...

The AirGRID, a system which forwards the status information of machines, can easily be attached to the Patlite signal towers.\*

The User's objective for various information and practical use has become possible with acquisitioned data based on the production process of bottlenecking, etc. Adopting international wireless communication standards, even with multiple communications occurring simultaneously, having secure communication is worth boasting about. With wireless meaning "air" and the layout of signal towers representing different points to form a "grid", the name "AirGRID" was given to the wireless acquisition system.



Just mount\* it!!  
Operating Condition is sent Wirelessly.



\*Easy installation is done with exchanging the existing headcover with the unit and fixing it with the existing screw. (For more details, refer to pg. 5)  
\*The signal tower and unit are sold separately.

**W**e want to know the condition of machines in our factory that stop on occasion but we have new and old machines which makes knowing the status for each one to be difficult.



### AirGRID possibilities RETROFIT

Just by simply attaching to existing Patlite Signal Towers\*\*, easily acquisitioned data is possible. The data can be very helpful to visualize bottlenecking.

**W**anting to examine the operating ratio of the machine connected to the PC takes up too much time and labor.



### AirGRID possibilities FREE LAYOUT

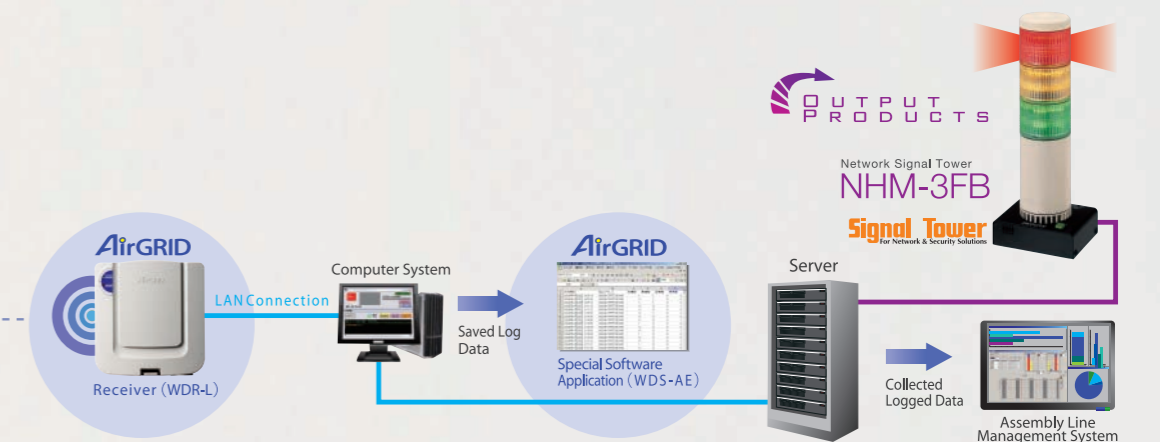
With a wireless application, information can be recorded for several machines. When there's an equipment layout change or expansion, time and labor can be reduced when no wiring is necessary.

**F**or optimization, recording the production line operating condition needs rewiring, but there is no budget for it.

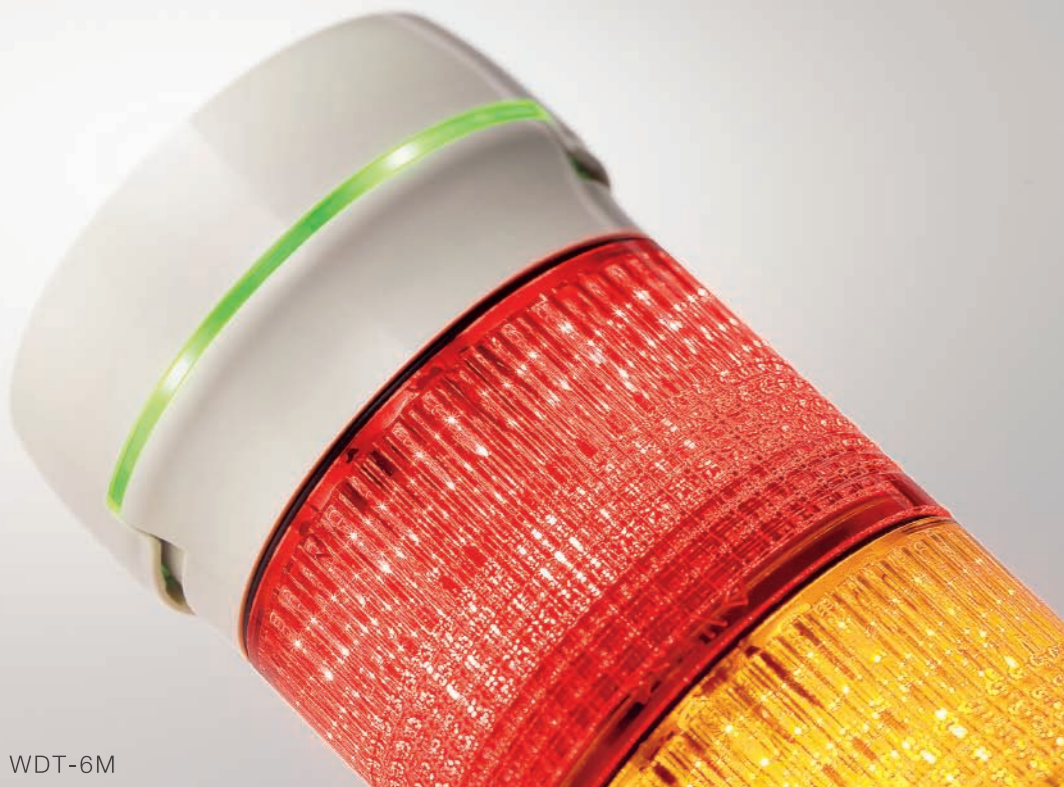


### AirGRID possibilities COST PERFORMANCE

Initial costs in comparison to the costs of wire installation can be drastically reduced. More so, a special application to record machine information can be put to use when performing annual maintenance for machinery.







WDT-6M



WDR-U



WDR-LE

With only the attachment of a wireless unit, information can be transferred to a receiver from the transmitter, and reduce implementation costs.

### Layout-free and unnecessary wiring for a secure wireless data acquisition system

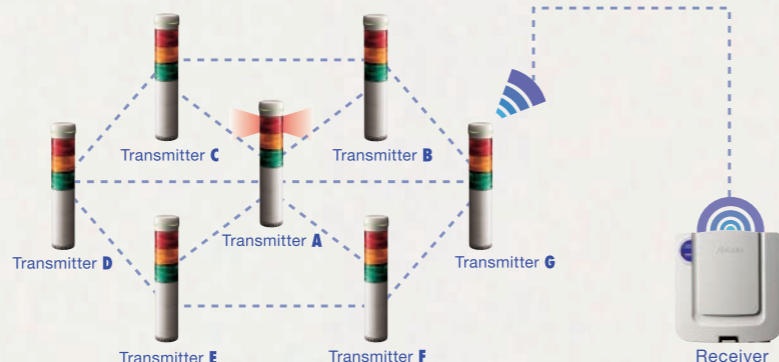
Utilizing international wireless communication standards, radio emissions can provide complete functionality with reliable communications flying about in locations with other various electrical signals.

#### Worldwide proven communication standards (Wireless Frequency 2.4GHz Band)



The WD series is a sensor network with high achievements for adopting the conformity of telecommunication standards (IEEE802.15.4) to make stable communication data possible. In addition, the 2.4GHz frequency band can be used world-wide, so it is supported whether you're inside or outside the country.

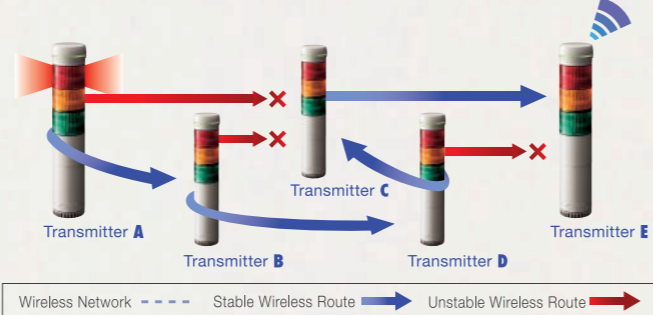
#### Multihopping wireless mesh networking implemented for accurate and reliable communication



The transmitted data mutually selects the best route for radio wave communication. Even with modifications of the floor layout, data communication starts automatically from power-up. Multi-hop mesh network communication is flexible enough to respond to the circumstances of radio communication.

#### Routing function automatically selects optimum communication route

This product doesn't need complicated wireless or network settings, the automatic selection for a good route to carry data communication is done as soon as the power source is connected. In addition, when an obstacle impairs the data transmission of the wireless communication, the transmitter automatically searches for a different route to re-connect.



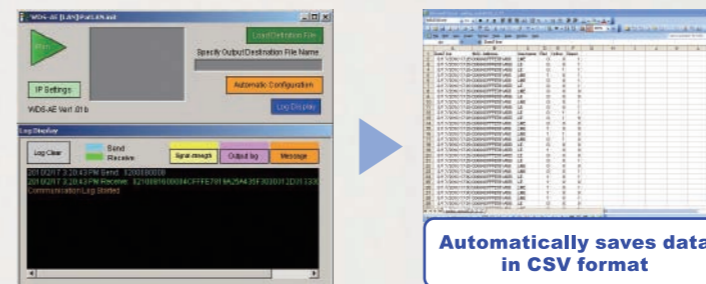
Operating hours or machinery downtime can be calculated daily! After gathering data for the operation rate of the downed machines, the progress in production can be understood!

### The exclusive application software package (WDS-AE) can demonstrate the potential of the AirGRID when integrated with a computer

Ask your nearest PATLITE Sales Representative for our Free Demo Software

The "WDS-AE" is a packaged application, which includes three applications to perform various configurations and one main application to collect and store data.

#### Status Condition Display Application



Automatically saves data in CSV format

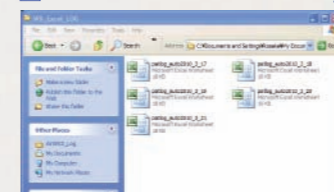
An application to display the status condition of the Signal Tower. Because the transmitter is directly connected to the Signal Tower, it can send the status condition data in real time. The data is then stored in the CSV format which is updated whenever the status condition changes.

#### Can even do this!

#### Data computation application examples

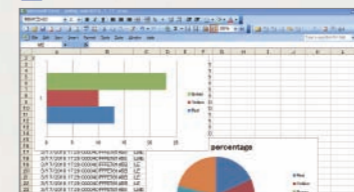
- Ratio for machine's accumulated operating hours
- Number of machine's run-time and down-time
- Machine's maintenance time

#### Generates date for new Log



Data management is smoother because the log data file is specified (1 day per file).

#### Easier to understand with Software



With calculation functions in [Excel], displaying graphs, charts etc., is easier.

#### Individual Configuration Applications

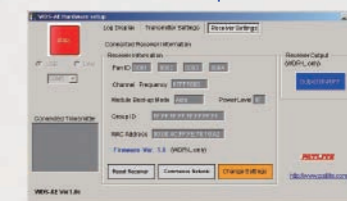
WDS-AE is the application package which can make detailed settings as well as verify the transmitter signal strength.

#### File Set up



This application sets up status condition parameters before operation. Detailed settings for the CSV data is also performed on this application.

#### Hardware Set up



Individual settings for the transmitters, such as the frequency or channel, can be performed.

#### Signal Strength Scanner



The condition of radio reception can be classified into three different levels. It's also useful for checking the radio reception when introducing a new floor layout.

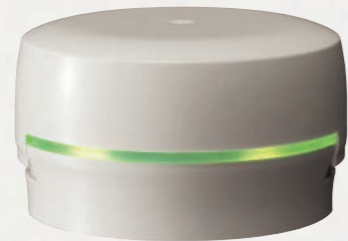
#### Software Requirements

- OS: Windows7 (32bit, 64bit ver), Windows XP sp2 or higher (32bit ver), Windows Vista (32bit ver),
- CPU: Celeron 1GHz or higher
- Memory: 512MB or more (1GB or higher recommended)
- HDD Space: Available space of 1MB or more





## TRANSMITTER SPECIFICATIONS



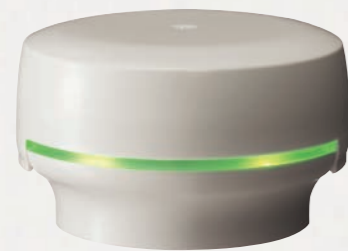
Signal Tower LME Transmitter  
**WDT-6M** Open Price



Corresponding Model #1 LME Series	Current Consumption typ. <b>35mA</b>	Maximum Links #2 <b>20 units</b>	Transmission Distance #3 <b>30m</b>
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Rated Voltage	DC24V (Non-polar)
Operating Voltage Range	DC21.6V to DC26.4V
Operating Temperature Range	-10°C to 60°C (No Condensation)
Operating Humidity Range	85% RH or less (No Condensation)
Storage Temperature Range	-20°C to 70°C (No Freezing)
Installation	Upright Position (Indoor Only)
Maximum Relay Connections	5 Relays
Protection Ratings	Conforms to LME Standards
Outer Dimensions	φ65×36.9mm
Mass	52g

#1 Due to restricted compatibility to the Signal Towers, please inquire for more details.  
#2 The radio reception depends on the environment and installed location.  
#3 The characteristic of the wave value becomes a numerical reference value.



Signal Tower LE Transmitter  
**WDT-5E** Open Price

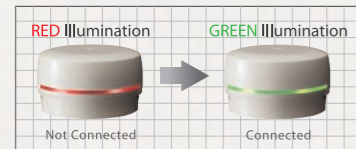


Corresponding Model #1 LE Series	Current Consumption typ. <b>35mA</b>	Maximum Links #2 <b>20 units</b>	Transmission Distance #3 <b>30m</b>
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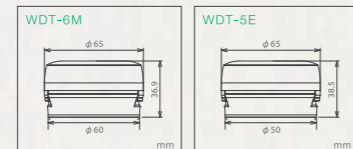
Rated Voltage	DC24V (Non-polar)
Operating Voltage Range	DC21.6V to DC26.4V
Operating Temperature Range	-10°C to 60°C (No Condensation)
Operating Humidity Range	85% RH or less (No Condensation)
Storage Temperature Range	-20°C to 70°C (No Freezing)
Installation	Upright Position (Indoor Only)
Maximum Relay Connections	5 Relays
Protection Ratings	Conforms to LE Standards
Outer Dimensions	φ65×38.5mm
Mass	52g

#1 Due to restricted compatibility to the Signal Towers, please inquire for more details.  
#2 The radio reception depends on the environment and installed location.  
#3 The characteristic of the wave value becomes a numerical reference value.

### Network Connection Condition



### Dimensions



### Transmitter Installation

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

**Conformity** Wireless Conformity/IEEE 802.15.4 Frequency Range/2400MHz~2483.5MHz (16 channels total from 2405MHz in 5MHz steps)  
Wireless Input-Output/Maximum of 1mW (from Antenna)

\*The unit does not light up. \*The transmitter is designed for PATLITE Model Series LME and LE Signal Towers. (As of Apr, 2010)



## RECEIVER SPECIFICATIONS



Stationary Receiver  
**WDR-LE** Open Price

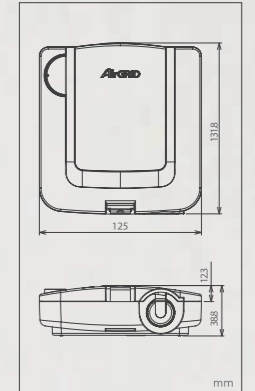


Connection Type LAN/USB	Current Consumption typ. <b>75mA</b>	Multiple Units #1
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Rated Voltage	DC24V (Non-polar)
Operating Voltage Range	DC21.6V to DC26.4V
Operating Temperature Range	-10°C to 60°C (No Condensation)
Operating Humidity Range	85% RH or less (No Condensation)
Storage Temperature Range	-20°C to 70°C (No Freezing)
Installation	Wall Mount, Sideways (Indoors Only)
Protection Ratings	IP20
Outer Dimensions	H131.8×W125×D38.8mm
Mass	160g

\*1 Multiple LAN connections can be simultaneously linked. (Please inquire for more details)

### Dimensions



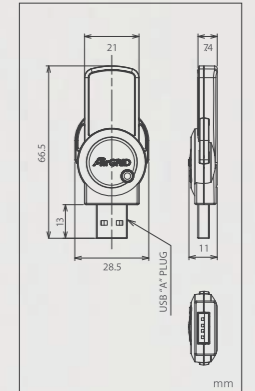
Connection Type USB	Current Consumption typ. <b>80mA</b>
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Rated Voltage	DC5V (USB Bus Powered)
Operating Voltage Range	DC4.5V to DC5.5V (Depends on USB)
Operating Temperature Range	5°C to 40°C (No Condensation)
Operating Humidity Range	85% RH or less (No Condensation)
Storage Temperature Range	-5°C to 50°C (No Condensation)
Installation	USB Port Connection (Indoors Only)
Outer Dimensions	H11×W28.5×D66.5mm
Mass	10g

\* USB1.1/USB2.0 (Full Speed) non-compatible for USB hubs.

○ For large scale equipment (transmitters exceeding 20units), the stationary receiver (WDR-LE) is recommended.

### Dimensions



Mobile Receiver  
**WDR-U** Open Price



Manual Control Box  
**WSST** Open Price

size φ50	size φ60	<b>5 PB INPUTS</b>
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### Applications

- Lean manufacturing workstations
- Remote visual indication of line status for managers and line supervisors
- Manual assembly operations
- Retail Check-out Stands
- Call centers

