GigaTera Ecology Service System

GeSS WIRE
For Wired Lighting Control
Nowadays, lighting is not merely about the traditional concept of “lighting up the darkness,” but rather about controlling the intensity of lighting automatically based on the movement of people or objects, traffic, and even the sun.

There are similar requirements of the control system to save energy. In the past, power saving alone was good enough, but there is an increasing demand for a new control system that takes into consideration the economical impact for energy consumption and maintenance costs that extend the system easily as well as environmental aspects to minimize carbon emissions and light pollution.

Developed based on this trend, the GigaTera® Gess™ lighting control system is an eco-friendly system with minimized energy consumption and emissions.

In addition, it has wireless, wired, and sensor control systems to provide the most stable and economical lighting control solutions ever.
Support for different controls
The Gess control system provides different support, including support for roadway lighting as well as wireless, wired, and sensor controls where even hybrid controls can be implemented through a combination of any of the above upon the customer’s request. With this hybrid control, a customized control system can be implemented based on usage conditions with the obvious advantage of energy savings and services.

Application of the standard lighting control protocol
The Gess control system supports wireless and wired standard protocols.

From individual to group controls
The Gess control system provides individual and group controls. With this functionality, the user can set different on/off times and intensities in different areas for optimal energy savings and automatically or manually control the lighting with a GUI or central console without visiting the site.

Reliable system
The Gess control system is a solution dedicated to GigaTera® LED lighting, making it more reliable than other control systems. The main GigaTera® roadway lighting products, META and HERA, have a wireless node system (ZB Node). Indoor lighting products, such as Bela, Verona, and Galaxy, have the 1-10V, DMX-512, DALI control board, and indoor ceiling lighting products, including the IBL, NANA, and SORA, detects the sensors. Different GigaTera® lighting products are perfectly controlled by the Gess system.

Energy and maintenance cost savings
The Gess control system can reduce energy consumption and maintenance costs.
1. GeSS WIRE with RS-485

The GeSS WIRE supports the RS-485 communication protocol. The RS-485 communication protocol can create a network of units connected to a single RS-485 serial port with a multidrop function. One master unit can be connected with up to 32 slave units while providing a maximum of 1.2 km of serial communications.

### System configuration

![System Configuration Diagram]

### Important equipment

**Lighting**

This module is built-in a luminaire to analyze the control commands received from the master unit and to control the lighting system.

<table>
<thead>
<tr>
<th>Product</th>
<th>SUFA</th>
<th>MAHA</th>
</tr>
</thead>
</table>
2. Master unit - wired (Master Unit - C: Wired Lighting Control Unit)

This is a unit to transfer the RS-485 signal of the control command of the GUI operation program to a slave unit. It can control and monitor up to 32 slave units.

3. USB Converter Unit

It is connected to a USB port and converts a received control signal to a RS-485 communication signal and transfers it to the master unit.

4. Server (GeSS WIRE) Wired Lighting Control Interface S/W

This is a PC operation program that facilitates lighting control and settings for the central lighting control system.

*Features
- Lighting state monitoring
- On/off control
- Brightness control

2. GeSS WIRE with DALI

The supports the DALI protocol.

The digital addressable lighting interface (DALI) is a standard lighting protocol to offer a flexible and intelligent alternative to indoor lighting controls and provides individual and group controls through unlimited bi-directional communications. With the double-wire control line, DALI can control up to 64 luminaires and up to 16 groups individually or through a broadcast mode. The recommended communication distance is 300m or less.

System Feature

1. Easy installation without wiring
2. Flexible applications
3. Control of up to 64 Lighting fixtures
4. Support for Standard protocols

System functionality
- 1–10 V brightness control
- Individual and group on/off control
- DALI protocol communication

System configuration

- Control Center
- IP Gateway
- DALI Master
- AC Power / DALI + / DALI -
- Lighting

* IP Gateway and DALI Master are not provided.
The GeSS Wire supports a 1–10 V interface. The 1–10 V interface offers better performance per price and controls a minimum brightness of 1 V to a maximum of 10 V of brightness.

### System configuration

- **Wall DIMMER (1–10V)**
- **Lighting**
- **Lighting**
- **Lighting**
- **Lighting**

* The wall dimmer (1–10V) is not provided.

### Important equipment

<table>
<thead>
<tr>
<th>Product</th>
<th>IBL</th>
<th>BELA</th>
<th>VERONA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wattage</strong></td>
<td>130W, 170W, 200W, 400W, 500W</td>
<td>40W, 45W, 50W</td>
<td>40W, 50W, 60W</td>
</tr>
</tbody>
</table>

3. **GeSS Wire with 1-10V**

3. GeSS Wire with DMX-512

The GeSS supports the DMX-512 protocol. The 1–10 V interface offers better performance per price and controls a minimum brightness of 1 V to a maximum of 10 V of brightness.

### System configuration

- **WallPAD (DMX-512)**
- **Lighting**
- **Lighting**
- **Lighting**
- **Lighting**

* The WallPAD (DMX-512) is not provided.
## Important equipment

<table>
<thead>
<tr>
<th>Product</th>
<th>Wattage</th>
</tr>
</thead>
<tbody>
<tr>
<td>BELA</td>
<td>40W, 45W, 50W</td>
</tr>
<tr>
<td>VERONA</td>
<td>40W, 50W, 60W</td>
</tr>
</tbody>
</table>

## Required HW Server SPEC

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>Intel Core(TM) i3 2.5GHz or higher</td>
</tr>
<tr>
<td>CORE</td>
<td>Dual core or higher</td>
</tr>
<tr>
<td>Memory (RAM)</td>
<td>2GB</td>
</tr>
<tr>
<td>HDD</td>
<td>500GB SATA 2.5&quot; HDD</td>
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</tbody>
</table>

## USB Converter Unit Specification

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>DC 5V</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>20mA @DC 5V</td>
</tr>
<tr>
<td>Communication Method</td>
<td>USB, RS-485</td>
</tr>
<tr>
<td>Data rate</td>
<td>38400[bps], 8-N-1</td>
</tr>
<tr>
<td>Dimension (W x L x H)</td>
<td>125 x 175 x 75 (mm)</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-30°C ~ + 70°C</td>
</tr>
</tbody>
</table>

## MASTER-C Specification

<table>
<thead>
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<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>AC 220V / 60Hz</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>30mA @DC 12V</td>
</tr>
<tr>
<td>Communication Method</td>
<td>RS-485</td>
</tr>
<tr>
<td>Data rate</td>
<td>38400[bps], 8-N-1</td>
</tr>
<tr>
<td>Dimension (W x L x H)</td>
<td>209 x 280 x 130 (mm)</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-30°C ~ + 70°C</td>
</tr>
</tbody>
</table>
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