Industrial Wireless Communication

Wireless connected with SCALANCE W!

Industrial Wireless LAN

siemens.com/iwlan
**Possible applications**

- High-end applications with high data rates in harsh environments or outdoors for challenging applications
- Wireless communication installed both inside or outside the cabinet for simple machine networking or radio coverage for large areas
- Cost-effective implementation of simple applications in industrial environments
- Applications with high bandwidths in moderate environments, e.g. for high user density or high-performance video transmission

**Advantages of the SCALANCE W portfolio at a glance**

- Extensive portfolio for a wide range of applications
- Fast commissioning via web-based management, CLI and SNMP
- Low maintenance costs (e.g. RCoax instead of slip ring contacts)
- Faster and easier device replacement with a removable data storage medium (C-/KEY-PLUG, CLP)
- iPCF with SCALANCE W-700 for required deterministic and fast roaming in PROFINET IO applications as well as wireless transmission of PROFINET with PROFIsafe, e.g. for emergency stop function
- High availability due to seamless redundancy with iPRP
Unique range of opportunities – with SCALANCE W

Wireless networks offer numerous options: The comprehensive SCALANCE W portfolio from Siemens comes into play particularly where it is impossible to lay cables in small spaces. We have the right solution for all your requirements!

Whether for the control cabinet or for indoor and outdoor use, our Industrial Wireless LAN (IWLAN) portfolio includes the right components – providing robustness and reliability. The design of the SCALANCE W devices makes them perfect for communication from the control cabinet together with SIMATIC S7-1500, ET 200MP, ET 200SP or ET 200SP HA. Smooth wireless communication can be achieved even without SIMATIC end devices. Or the housing is so robust, that they can be used in harsh environments outside the control cabinet, even outdoors.

Our SCALANCE W products are compatible with the SIMATIC world and can be integrated in the TIA Portal. The portfolio is also scalable in price and performance, with solutions for price-sensitive applications up to high-performance applications with data rates of up to 450 Mbit/s with the 11n standard. The new WLAN standard IEEE 802.11ac Wave 2 enables wireless applications with high bandwidths to be optimally implemented thanks to gigabit data rates up to 1733 Mbit/s, e.g. for high-performance transmission of video data. The devices are available for worldwide use with the appropriate wireless approvals and country-specific versions.

The SCALANCE W portfolio comprises Access Points and Client Modules, all of which support the 2.4 and 5 GHz frequencies. The portfolio is rounded off with various IWLAN antennas with different characteristics and RCoax radiating cables for special applications, in addition to mounting accessories. It is also possible to enable special industrial functions – so-called iFeatures – using KEY-PLUGs, in order to facilitate fail-safe communication via PROFINET with PROFIsafe, for example.

Radio field planning, a prerequisite for a stable, powerful WLAN network, is just one of many services available from Siemens or our certified Solution Partners.
## The SCALANCE W portfolio
### Client Modules (Clients)

<table>
<thead>
<tr>
<th>Wireless standard</th>
<th>SCALANCE W721-1 RJ45</th>
<th>SCALANCE W734-1 RJ45</th>
<th>SCALANCE W738-1 M12</th>
<th>SCALANCE W748-1 RJ45</th>
<th>SCALANCE W748-1 M12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating mode</td>
<td>Client</td>
<td>Client</td>
<td>Client</td>
<td>Client</td>
<td>Client</td>
</tr>
<tr>
<td>Wireless interfaces</td>
<td>1 radio (2.4 GHz or 5 GHz)</td>
<td>1 radio (2.4 GHz or 5 GHz)</td>
<td>1 radio (2.4 GHz or 5 GHz)</td>
<td>1 radio (2.4 GHz or 5 GHz)</td>
<td>1 radio (2.4 GHz or 5 GHz)</td>
</tr>
<tr>
<td>Max. data rate (brutto in Mbit/s)</td>
<td>150</td>
<td>300</td>
<td>300</td>
<td>450</td>
<td>1733</td>
</tr>
<tr>
<td>Temperature range, protection class, housing material</td>
<td>0 to +55 °C, IP20, plastic</td>
<td>-20 to +60 °C, IP30, aluminum</td>
<td>-20 to +60 °C, IP65, aluminum</td>
<td>-20 to +60 °C, IP30, aluminum; Only W748-1 M12: IP65</td>
<td>-20 to +70 °C, IP65, aluminum/plastic</td>
</tr>
<tr>
<td>LAN interfaces/Power-over-Ethernet (PoE)</td>
<td>1x RJ45 for 10/100 Mbit/s</td>
<td>1x PoE, 2x RJ45 (one with PoE) for 10/100 Mbit/s</td>
<td>1x PoE, 2x M12 (one with PoE) for 10/100 Mbit/s</td>
<td>1x RJ45 (PoE) for 10/100/1000 Mbit/s Only W748-1 M12: 1x M12 (PoE) for 10/100/1000 Mbit/s</td>
<td>2x M12 (one with PoE) for 10/100/1000 Mbit/s</td>
</tr>
<tr>
<td>Antenna connections</td>
<td>1x R-SMA</td>
<td>2x R-SMA</td>
<td>2x N-Connect</td>
<td>3x R-SMA Only W748-1 M12: 3x N-Connect</td>
<td>4x N-Connect</td>
</tr>
<tr>
<td>Mounting</td>
<td>35 mm DIN rail</td>
<td>S7-300 mounting rail, S7-1500 mounting rail, 35 mm DIN rail; wall mounting</td>
<td>35 mm DIN rail, DIN rail mounting front or vertical (with accessories); wall mounting</td>
<td>S7-300 mounting rail, S7-1500 mounting rail, 35 mm DIN rail (with accessories); wall mounting</td>
<td>S7-300 mounting rail, S7-1500 mounting rail, 35 mm DIN rail (with accessories); wall mounting (with accessories)</td>
</tr>
<tr>
<td>PLUG functions</td>
<td>Only W722-1 RJ45: No C-PLUG, ifeatures integrated</td>
<td>C-PLUG, KEY-PLUG W740 ifeatures, KEY-PLUG W780 ifeatures</td>
<td>C-PLUG, KEY-PLUG W740 ifeatures, KEY-PLUG W780 ifeatures</td>
<td>C-PLUG, KEY-PLUG W740 ifeatures, KEY-PLUG W780 ifeatures</td>
<td>C-PLUG, KEY-PLUG W740 ifeatures, KEY-PLUG W780 ifeatures, CLP 2GB, CLP 2GB 1740 ifeatures, CLP 2GB 1780 ifeatures</td>
</tr>
<tr>
<td>Additional functions</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>–</td>
</tr>
</tbody>
</table>
## The SCALANCE W portfolio

### Access Points (AP)

<table>
<thead>
<tr>
<th>Model</th>
<th>Image</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCALANCE W761-1 RJ45</td>
<td><img src="https://example.com/image1.png" alt="Image" /></td>
<td>1x RJ45 for 10/100 Mbit/s</td>
</tr>
<tr>
<td>SCALANCE W774-1 RJ45, W774-1 M12 EEC</td>
<td><img src="https://example.com/image2.png" alt="Image" /></td>
<td>1x RJ45 for 10/100 Mbit/s; 2 independent radios (2.4 GHz and 5 GHz)</td>
</tr>
<tr>
<td>SCALANCE W778-1 M12, W778-1 M12 EEC</td>
<td><img src="https://example.com/image3.png" alt="Image" /></td>
<td>2 independent radios (2.4 GHz and 5 GHz)</td>
</tr>
<tr>
<td>SCALANCE W788-1 RJ45, W788-2 RJ45, W788-1 M12, W788-2 M12, W788-2 M12 EEC</td>
<td><img src="https://example.com/image4.png" alt="Image" /></td>
<td>2 independent radios (2.4 GHz and 5 GHz)</td>
</tr>
<tr>
<td>SCALANCE W786-1 RJ45, W786-2 RJ45, W786-2 SFP, W786-1 M12, W786-2 M12, W786-2 M12 EEC</td>
<td><img src="https://example.com/image5.png" alt="Image" /></td>
<td>2 independent radios (1x 2.4 GHz and 1x 5 GHz)</td>
</tr>
<tr>
<td>SCALANCE W786-2 IA RJ45, W786-2 SFP</td>
<td><img src="https://example.com/image6.png" alt="Image" /></td>
<td>2 independent radios (2.4 GHz and 5 GHz)</td>
</tr>
<tr>
<td>SCALANCE W786-2 M12, W786-2 M12 EEC, W786-2 M12 EEC</td>
<td><img src="https://example.com/image7.png" alt="Image" /></td>
<td>2 independent radios (2.4 GHz and 5 GHz)</td>
</tr>
<tr>
<td>SCALANCE W1788-1 M12, W1788-2 M12, W1788-2 M12 EEC, W1788-2 M12 EEC</td>
<td><img src="https://example.com/image8.png" alt="Image" /></td>
<td>2 independent radios (2.4 GHz and 5 GHz)</td>
</tr>
<tr>
<td>SCALANCE W1788-2 IA M12</td>
<td><img src="https://example.com/image9.png" alt="Image" /></td>
<td>2 independent radios (2.4 GHz and 5 GHz)</td>
</tr>
<tr>
<td>Direct Access Point SCALANCE W1750D-2IA RJ45</td>
<td><img src="https://example.com/image10.png" alt="Image" /></td>
<td>2 independent radios (2.4 GHz and 5 GHz)</td>
</tr>
</tbody>
</table>

### Features
- **IEEE 802.11a/b/g/n**: IEEE 802.11ac Wave 2
- **AP and Client**: AP and Client
- **1 radio**: 1 radio
- **150**: 150
- **300**: 300
- **450**: 450
- **1733**: 1733
- **0 to +55 °C, IP20, plastic**: 0 to +55 °C, IP20, plastic
- **-20 to +60 °C, -30 to +65 °C (EEC), IP30, aluminum**: -20 to +60 °C, -30 to +65 °C (EEC), IP30, aluminum
- **-20 to +60 °C, -40 to +74 °C (EEC), IP65, aluminum; Only W788 M12: IP65**: -20 to +60 °C, -40 to +74 °C (EEC), IP65, aluminum; Only W788 M12: IP65
- **-40 to +60 °C, IP65, aluminum/plastic**: -40 to +60 °C, IP65, aluminum/plastic
- **-40 to +75 °C, IP65, aluminum/plastic**: -40 to +75 °C, IP65, aluminum/plastic
- **0 to +50 °C, aluminum/plastic**: 0 to +50 °C, aluminum/plastic
- **1x RJ45 for 10/100 Mbit/s**: 1x RJ45 for 10/100 Mbit/s
- **1x PoE, 2x RJ45 (one with PoE); W774-1 M12 EEC: 1x PoE, 2x M12 (one with PoE), for 10/100 Mbit/s**: 1x PoE, 2x M12 (one with PoE) for 10/100 Mbit/s
- **1x RJ45 (PoE) for 10/100/1000 Mbit/s; Only W788 M12: 1x M12 (PoE) for 10/100/1000 Mbit/s**: 1x RJ45 (PoE) for 10/100/1000 Mbit/s; Only W788 M12: 1x M12 (PoE) for 10/100/1000 Mbit/s
- **2x M12 (one with PoE) for 10/100/1000 Mbit/s**: 2x M12 (one with PoE) for 10/100/1000 Mbit/s
- **1x R-SMA, 2x R-SMA, 2x N-Connect**: 1x R-SMA, 2x R-SMA, 2x N-Connect
- **35 mm DIN rail (with accessories); wall mounting**: 35 mm DIN rail (with accessories); wall mounting
- **Ceiling and wall mounting (with accessories)**: Ceiling and wall mounting (with accessories)
- **C-PLUG, KEY-PLUG W780 iFeatures, KEY-PLUG W740 iFeatures, KEY-PLUG W700 Security**: C-PLUG, KEY-PLUG W780 iFeatures, KEY-PLUG W740 iFeatures, KEY-PLUG W700 Security
- **Only W788-2 M12 EEC: Conformal Coating, EN 50121-4, EN 50155**: Only W788-2 M12 EEC: Conformal Coating, EN 50121-4, EN 50155
- **Only W1788-2 M12 EEC: Conformal Coating, EN 50121-4, EN 50121-3-2**: Only W1788-2 M12 EEC: Conformal Coating, EN 50121-4, EN 50121-3-2
Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit https://www.siemens.com/industrialsecurity.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer’s exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under https://www.siemens.com/industrialsecurity.