Industrial Wireless Communication

Wireless connected with SCALANCE W!
Industrial Wireless LAN

Brochure Edition 09/2017

siemens.com/iwlan
Possible applications

- High-end applications with high data rates in harsh environments or outdoors for challenging applications
- Wireless communication both inside and outside the control 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 sliding contacts)
- Reliable, wireless communication, even for PROFINET and PROFIsafe (iFeatures)
- iPCF 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 the communication in the control cabinet together with SIMATIC S7-1500, ET 200MP or ET 200SP. 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 450 Mbit/s.

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>Model</th>
<th>Wireless standard</th>
<th>Operating mode</th>
<th>Wireless interfaces</th>
<th>Max. data rate</th>
<th>Temperature range, protection class, housing material</th>
<th>LAN interfaces/Power-over-Ethernet (PoE)</th>
<th>Antenna connections</th>
<th>Mounting</th>
<th>PLUG functions</th>
<th>Additional functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCALANCE W721-1 RJ45</td>
<td>IEEE 802.11a/b/g/n</td>
<td>Client</td>
<td>1 radio (2.4 GHz or 5 GHz)</td>
<td>150</td>
<td>0 to +55 °C, IP20, plastic</td>
<td>1x RJ45 for 10/100 Mbit/s</td>
<td>1x R-SMA</td>
<td>35 mm DIN rail</td>
<td>No C-PLUG, iFeatures integrated</td>
<td>–</td>
</tr>
<tr>
<td>SCALANCE W722-1 RJ45</td>
<td>IEEE 802.11a/b/g/n</td>
<td>Client</td>
<td>1 radio (2.4 GHz or 5 GHz)</td>
<td>150</td>
<td>0 to +55 °C, IP20, plastic</td>
<td>1x RJ45 for 10/100 Mbit/s</td>
<td>1x R-SMA</td>
<td>35 mm DIN rail</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>SCALANCE W734-1 RJ45</td>
<td>IEEE 802.11a/b/g/n</td>
<td>Client</td>
<td>1 radio (2.4 GHz or 5 GHz)</td>
<td>300</td>
<td>-20 to +60 °C, IP30, aluminum</td>
<td>1x PoE, 2x RJ45 (one with PoE) for 10/100 Mbit/s</td>
<td>2x R-SMA</td>
<td>S7-300 mounting rail, S7-1500 mounting rail, 35 mm DIN rail; wall mounting</td>
<td>C-PLUG, KEY-PLUG W740 iFeatures, KEY-PLUG W780 iFeatures</td>
<td>–</td>
</tr>
<tr>
<td>SCALANCE W738-1 M12</td>
<td>IEEE 802.11a/b/g/n</td>
<td>Client</td>
<td>1 radio (2.4 GHz or 5 GHz)</td>
<td>300</td>
<td>-20 to +60 °C, IP65, aluminum</td>
<td>1x PoE, 2x M12 (one with PoE) for 10/100 Mbit/s</td>
<td>2x N-Connect</td>
<td>S7-300 mounting rail, S7-1500 mounting rail, 35 mm DIN rail (with accessories); wall mounting</td>
<td>C-PLUG, KEY-PLUG W740 iFeatures, KEY-PLUG W780 iFeatures</td>
<td>–</td>
</tr>
<tr>
<td>SCALANCE W748-1 RJ45</td>
<td>IEEE 802.11a/b/g/n</td>
<td>Client</td>
<td>1 radio (2.4 GHz or 5 GHz)</td>
<td>450</td>
<td>-20 to +60 °C, IP30, aluminum</td>
<td>1x RJ45 (PoE) for 10/100/1 000 Mbit/s</td>
<td>3x R-SMA</td>
<td>S7-300 mounting rail, S7-1500 mounting rail, 35 mm DIN rail</td>
<td>C-PLUG, KEY-PLUG W740 iFeatures, KEY-PLUG W780 iFeatures</td>
<td>–</td>
</tr>
<tr>
<td>SCALANCE W748-1 M12</td>
<td>IEEE 802.11a/b/g/n</td>
<td>Client</td>
<td>1 radio (2.4 GHz or 5 GHz)</td>
<td>450</td>
<td>-20 to +60 °C, IP65, aluminum</td>
<td>1x M12 (PoE) for 10/100/1 000 Mbit/s</td>
<td>3x N-Connect</td>
<td>S7-300 mounting rail, S7-1500 mounting rail, 35 mm DIN rail (with accessories); wall mounting</td>
<td>C-PLUG, KEY-PLUG W740 iFeatures, KEY-PLUG W780 iFeatures</td>
<td>–</td>
</tr>
</tbody>
</table>
# The SCALANCE W portfolio

## Access Points (AP)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>IEEE 802.11a/b/g/n</td>
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<td>IEEE 802.11a/b/g/n</td>
<td>IEEE 802.11a/b/g/n</td>
<td>IEEE 802.11ac Wave 2</td>
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</tbody>
</table>

**AP and Client**

<table>
<thead>
<tr>
<th>1 radio (2.4 GHz or 5 GHz)</th>
<th>1 radio (2.4 GHz or 5 GHz)</th>
<th>2 independent radios (2.4 GHz and/or 5 GHz)</th>
<th>2 independent radios (2.4 GHz and/or 5 GHz)</th>
<th>2 independent radios (2.4 GHz and 5 GHz each)</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>300</td>
<td>450</td>
<td>450</td>
<td>1 733</td>
</tr>
</tbody>
</table>

**Temperature and Environmental Conditions**

- 0 to +55 °C, IP20, plastic
- -20 to +60 °C, -30 to +65 °C (EEC), IP30, aluminum
- -20 to +60 °C, -30 to +75 °C (EEC), IP65, aluminum
- -20 to +60 °C, -40 to +74 °C (EEC), IP65, aluminum
- -40 to +60 °C, IP65, aluminum/plastic
- 0 to +50 °C, aluminum/plastic

**Networking Capabilities**

- 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

**Configuration Options**

- 1x R-SMA
- 2x R-SMA
- 2x N-Connect
- 3x R-SMA, W788-2 RJ45: 2x3 R-SMA
- 3x N-Connect, W788-2 M12 EEC: 2x3 N-Connect
- 3x R-SMA, W786-2 RJ45: 2x3 R-SMA

**Mounting Options**

- 35 mm DIN rail; S7-300 mounting rail, S7-1500 mounting rail, 35 mm DIN rail; wall mounting
- Ceiling and wall mounting (with accessories)
- Only W788-2 M12 EEC: conformal coating, EN 50121-4, EN 50155, EN 45545-2, NEMA TS2
- Only W786-2 RJ45 and W786-2 SFP: railway applications acc. to EN 50121-4

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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 http://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.

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