SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

CM PtP

■ Overview

- Modules for serial communication connections, scaled according to interface types, protocols, and performance
- 4 versions with different physical transmission characteristics:
  - RS 232C, max. 19.2 Kbit/s
  - RS 232C, max.115.2 Kbit/s
  - RS 422/RS 485, max. 19.2 Kbit/s
  - RS 422/RS 485, max. 115.2 Kbit/s
- Protocols supported
  - Freeport: User-parameterizable telegram format for universal communication
  - 3964(R) for improved transmission reliability
  - Modbus RTU Master
  - Modbus RTU Slave
  - USS, implemented through instructions

■ Technical specifications

Article number	6ES7540-1AD00-0AA0	6ES7541-1AD00-0AB0	6ES7540-1AB00-0AA0	6ES7541-1AB00-0AB0
	S7-1500, CM PtP RS232 BA	S7-1500, CM PtP RS232 HF	S7-1500, CM PtP RS 422/485 BA	S7-1500, CM PtP RS 422/485 HF
General information				
Product type designation	CM PtP RS 232 BA	CM PtP RS 232 HF	CM PtP RS 422 / 485 BA	CM PtP RS 422 / 485 HF
Product function				
• I&M data	Yes; I&M 0	Yes; I&M 0	Yes; I&M 0	Yes; I&M 0
Engineering with				
• STEP 7 TIA Portal configurable/ integrated as of version	V12 / V12	V12 / V12	V12 / V12	V12 / V12
• STEP 7 configurable/integrated as of version	V5.5 SP2 with GSD file	V5.5 SP2 with GSD file	V5.5 SP2 with GSD file	V5.5 SP2 with GSD file
• PROFIBUS as of GSD version/ GSD revision	- / -	- / -	- / -	- / -
• PROFINET as of GSD version/ GSD revision	V2.3	V2.3 / -	V2.3	V2.3 / -
Installation type/mounting				
Rail mounting	Yes; S7-1500 mounting rail	Yes; S7-1500 mounting rail	Yes; S7-1500 mounting rail	Yes; S7-1500 mounting rail
Interface types				
RS 232				
• Transmission rate, max.	19.2 kbit/s	115.2 kbit/s		
• Cable length, max.	15 m	15 m		
• RS 232 auxiliary signals	RTS, CTS, DTR, DSR, RI, DCD	RTS, CTS, DTR, DSR, RI, DCD		
RS 485				
• Transmission rate, max.			19.2 kbit/s	115.2 kbit/s
• Cable length, max.			1 200 m	1 200 m
RS 422				
• Transmission rate, max.			19.2 kbit/s	115.2 kbit/s
• Cable length, max.			1 200 m	1 200 m
• 4-wire full duplex connection			Yes	Yes
• 4-wire multipoint connection			No	No
Protocols				
Integrated protocols				
Freeport				
- Telegram length, max.	1 kbyte	4 kbyte	1 kbyte	4 kbyte
- Bits per character	7 or 8	7 or 8	7 or 8	7 or 8
- Number of stop bits	1 or 2 bit	1 or 2 bit	1 or 2 bit	1 or 2 bit
- Parity	None, even, odd, always 1, always 0, any	None, even, odd, always 1, always 0, any	None, even, odd, always 1, always 0, any	None, even, odd, always 1, always 0, any

■ **Technical specifications** (continued)

Article number	6ES7540-1AD00-0AA0	6ES7541-1AD00-0AB0	6ES7540-1AB00-0AA0	6ES7541-1AB00-0AB0
	S7-1500, CM PtP RS232 BA	S7-1500, CM PtP RS232 HF	S7-1500, CM PtP RS 422/485 BA	S7-1500, CM PtP RS 422/485 HF
3964 (R)				
- Telegram length, max.	1 kbyte	4 kbyte	1 kbyte	4 kbyte
- Bits per character	7 or 8	7 or 8	7 or 8	7 or 8
- Number of stop bits	1 or 2 bit	1 or 2 bit	1 or 2 bit	1 or 2 bit
- Parity	None, even, odd, always 1, always 0, any	None, even, odd, always 1, always 0, any	None, even, odd, always 1, always 0, any	None, even, odd, always 1, always 0, any
Modbus RTU master				
- Address area		1 to 247, extended 1 to 65535		1 to 247, extended 1 to 65535
- Number of slaves, max.		1		32
MODBUS RTU slave				
- Address area		1 to 247, extended 1 to 65535		1 to 247, extended 1 to 65535
Telegram buffer				
• Buffer memory for telegrams	2 kbyte	8 kbyte	2 kbyte	8 kbyte
• Number of telegrams which can be buffered	255	255	255	255
Interrupts/diagnostics/ status information				
Diagnostics function	Yes	Yes	Yes	Yes
Alarms				
• Diagnostic alarm	Yes	Yes	Yes	Yes
• Hardware interrupt	No	No	No	No
Diagnostic messages				
• Wire-break	Yes	Yes	Yes	Yes
Diagnostics indication LED				
• RUN LED	Yes; Green LED	Yes; Green LED	Yes; Green LED	Yes; Green LED
• ERROR LED	Yes; Red LED	Yes; Red LED	Yes; Red LED	Yes; Red LED
• Receive RxD	Yes; yellow LED	Yes; yellow LED	Yes; yellow LED	Yes; yellow LED
• Transmit TxD	Yes; yellow LED	Yes; yellow LED	Yes; yellow LED	Yes; yellow LED
Potential separation				
between backplane bus and interface	Yes	Yes	Yes	Yes
Ambient conditions				
Ambient temperature during operation				
• horizontal installation, min.	0 °C	0 °C	0 °C	0 °C
• horizontal installation, max.	60 °C	60 °C	60 °C	60 °C
• vertical installation, min.	0 °C	0 °C	0 °C	0 °C
• vertical installation, max.	40 °C	40 °C	40 °C	40 °C
Decentralized operation				
to SIMATIC S7-300	Yes	Yes	Yes	Yes
to SIMATIC S7-400	Yes	Yes	Yes	Yes
to SIMATIC S7-1500	Yes	Yes	Yes	Yes
to standard PROFINET controller	Yes	Yes	Yes	Yes
Fast Startup supported	Yes	Yes	Yes	Yes
Dimensions				
Width	35 mm	35 mm	35 mm	35 mm
Height	147 mm	147 mm	147 mm	147 mm
Depth	127 mm	127 mm	127 mm	127 mm
Weights				
Weight, approx.	0.22 kg	0.22 kg	0.22 kg	0.22 kg

SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

CM PtP

◼ Ordering data

	Article No.
CM PtP RS 232 BA communication module	6ES7540-1AD00-0AA0
Basic communication module with one RS 232 interface, Freeport, 3964(R) and USS protocols, 9-pin sub D connector, max. 19.2 kbit/s	
CM PtP RS 232 HF communication module	6ES7541-1AD00-0AB0
High Feature communication module with one RS 232 interface, Freeport, 3964(R), USS and Modbus RTU protocols, 9-pin sub D connector, max. 115.2 kbit/s	
CM PtP RS 422/485 BA communication module	6ES7540-1AB00-0AA0
Basic communication module with one RS 422/485 interface, Freeport, 3964(R) and USS protocols, 15-pin sub D socket, max. 19.2 kbit/s	
CM PtP RS 422/485 HF communication module	6ES7541-1AB00-0AB0
High Feature communication module with one RS 422/485 interface, Freeport, 3964(R), USS and Modbus RTU protocols, 15-pin sub D socket, max. 115.2 kbit/s	

	Article No.
Accessories	
RS 232 connecting cable	
For linking to SIMATIC S7	
5 m	6ES7902-1AB00-0AA0
10 m	6ES7902-1AC00-0AA0
15 m	6ES7902-1AD00-0AA0
RS 422/485 connecting cable	
For linking to SIMATIC S7	
5 m	6ES7902-3AB00-0AA0
10 m	6ES7902-3AC00-0AA0
50 m	6ES7902-3AG00-0AA0
SIMATIC Manual Collection	6ES7998-8XC01-8YE0
Electronic manuals on DVD, multi-language: LOGO!, SIMADYN, SIMATIC bus components, SIMATIC C7, SIMATIC Distributed I/O, SIMATIC HMI, SIMATIC Sensors, SIMATIC NET, SIMATIC PC-based Automation, SIMATIC PCS 7, SIMATIC PG/PC, SIMATIC S7, SIMATIC Software, SIMATIC TDC	
SIMATIC Manual Collection update service for 1 year	6ES7998-8XC01-8YE2
Current "Manual Collection" DVD and the three subsequent updates	

4

Overview

DP-M	DP-S	FMS	PG/OP	S7	
●	●		●	●	

The CM 1542-5 communications module expands the SIMATIC S7-1500 controller to include a PROFIBUS connection for communication with lower-level PROFIBUS devices in bandwidths from 9.6 kbps to 12 Mbps. The module can also be used to implement separate PROFIBUS lines, in other words, to control a number of different field devices via a number of PROFIBUS segments. The CM 1542-5 assumes all communication tasks, thus reducing the CPU workload.

The CM 1542-5 is suitable for S7 communication as well as for conventional PROFIBUS communication. This makes it possible to establish communication between the S7-1500 controller and other devices, for example those from the SIMATIC S7-300/400 range.

- PROFIBUS DP master or DP slave with electrical interface for connecting the SIMATIC S7-1500 to PROFIBUS at up to 12 Mbps (including 45.45 kbps)
- Communication services:
  - PROFIBUS DP
  - PG/OP communication
  - S7 communication
  - Open user communication (SEND/RECEIVE) via FDL
- Time synchronization
- Simple programming and configuration over PROFIBUS
- Cross-network PG communication using S7 routing
- Module replacement without a PG
- Data record routing (PROFIBUS DP)
- Adding or modifying distributed I/O during operation

Technical specifications

Article number	**6GK7542-5DX00-0XE0**
Product type designation	CM 1542-5
Transmission rate	
Transfer rate	
• at the 1st interface acc. to PROFIBUS	9.6 kbit/s ... 12 Mbps
Interfaces	
Number of interfaces acc. to Industrial Ethernet	0
Number of electrical connections	
• at the 1st interface acc. to PROFIBUS	1
Type of electrical connection	
• at the 1st interface acc. to PROFIBUS	9-pin Sub-D socket (RS485)
Supply voltage, current consumption, power loss	
Type of voltage of the supply voltage	DC
Supply voltage 1 from backplane bus	15 V
Relative symmetrical tolerance at DC	
• at 15 V	3 %
Consumed current	
• from backplane bus at DC at 15 V typical	0.2 A
Power loss [W]	3 W
Permitted ambient conditions	
Ambient temperature	
• for vertical installation during operation	0 ... 40 °C
• for horizontally arranged busbars during operation	0 ... 60 °C
• during storage	-40 ... +70 °C
• during transport	-40 ... +70 °C
Relative humidity at 25 °C without condensation during operation maximum	95 %
Protection class IP	IP20
Design, dimensions and weight	
Module format	Compact module S7-1500 single width
Width	35 mm
Height	142 mm
Depth	129 mm
Net weight	0.4 kg
Mounting type	
• S7-1500 rail mounting	Yes
Product properties, functions, components general	
Number of units	
• per CPU maximum	8
• Note	depending on CPU type
Performance data open communication	
Number of possible connections for open communication by means of SEND/RECEIVE blocks maximum	30
Amount of data	
• as user data per connection for open communication by means of SEND/RECEIVE blocks maximum	240 byte

SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

CM 1542-5

■ **Technical specifications** (continued)

Article number	6GK7542-5DX00-0XE0
Product type designation	CM 1542-5
Performance data PROFIBUS DP	
Service as DP master	
• DPV1	Yes
Number of DP slaves on DP master usable	125
Amount of data	
• of the address area of the inputs as DP master total	8 192 byte
• of the address area of the outputs as DP master total	8 192 byte
• of the address area of the inputs per DP slave	244 byte
• of the address area of the outputs per DP slave	244 byte
Service as DP slave	
• DPV0	Yes
• DPV1	Yes
Amount of data	
• of the address area of the inputs as DP slave total	240 byte
• of the address area of the outputs as DP slave total	240 byte
Performance data S7 communication	
Number of possible connections for S7 communication	
• maximum	48
• Note	depending on the system upper limit
Performance data multi-protocol mode	
Number of active connections with multi-protocol mode	48
Performance data telecontrol	
Protocol is supported	
• TCP/IP	No
Product functions management, configuration	
Configuration software	
• required	STEP 7 Professional V12 (TIA Portal) or higher
Identification & maintenance function	
• I&M0 - device-specific information	Yes
• I&M1 – higher-level designation/ location designation	Yes
Product functions Diagnosis	
Product function Web-based diagnostics	Yes; yes, via S7-1500 CPU
Product functions Time	
Product function pass on time synchronization	Yes

■ **Ordering data** | **Article No.**

CM 1542-5 communication module	
Communications module for electrical connection of SIMATIC S7-1500 to PROFIBUS as DP master or DP slave; S7 and PG/OP communication, data record routing, time synchronization, diagnostics	6GK7542-5DX00-0XE0
Accessories	
PROFIBUS FastConnect RS 485 connection plug	
With 90° cable outlet; insulation displacement technology, max. transmission rate 12 Mbps	
• Without PG interface	6ES7972-0BA52-0XA0
• With programming device interface	6ES7972-0BB52-0XA0
PROFIBUS FC Standard Cable	
2-wire bus cable, shielded, special design for fast mounting, delivery unit: max. 1000 m, minimum order quantity 20 m, sold by the meter	6XV1830-0EH10
PROFIBUS FastConnect stripping tool	
Stripping tool for fast stripping of the PROFIBUS FastConnect bus cable	6GK1905-6AA00
PROFIBUS bus terminal 12M	
Bus terminal for connection of PROFIBUS nodes up to 12 Mbps with connecting cable	6GK1500-0AA10

4

Overview

DP-M	DP-S	FMS	PG/OP	S7/S5	
●	●		●		

The CP 1542-5 communications processor expands the SIMATIC S7-1500 controller to include a PROFIBUS connection for communication with lower-level PROFIBUS devices in bandwidths from 9.6 kbps to 12 Mbps. This processor allows the implementation of separate PROFIBUS lines, in other words the control of multiple field devices over multiple PROFIBUS segments. The CP 1542-5 handles all communication tasks, thus reducing the CPU load.

- PROFIBUS DP master or DP slave with electrical interface for connecting the SIMATIC S7-1500 to PROFIBUS at up to 12 Mbps (including 45.45 kbps)

Communication services:

- PROFIBUS DP
- PG/OP communication
- Time synchronization
- Simple programming and configuration over PROFIBUS
- Cross-network PG communication using S7 routing
- Module replacement without a PG

Technical specifications

Article number	**6GK7542-5FX00-0XE0**
Product type designation	CP 1542-5
Transmission rate	
Transfer rate	
• at the 1st interface acc. to PROFIBUS	9.6 kbit/s ... 12 Mbps
Interfaces	
Number of interfaces acc. to Industrial Ethernet	0
Number of electrical connections	
• at the 1st interface acc. to PROFIBUS	1
Type of electrical connection	
• at the 1st interface acc. to PROFIBUS	9-pin Sub-D socket (RS485)
Supply voltage, current consumption, power loss	
Type of voltage of the supply voltage	DC
Supply voltage 1 from backplane bus	15 V
Relative symmetrical tolerance at DC	
• at 15 V	3 %
Consumed current	
• from backplane bus at DC at 15 V typical	0.1 A
Power loss [W]	1.5 W
Permitted ambient conditions	
Ambient temperature	
• for vertical installation during operation	0 ... 40 °C
• for horizontally arranged busbars during operation	0 ... 60 °C
• during storage	-40 ... +70 °C
• during transport	-40 ... +70 °C
Relative humidity at 25 °C without condensation during operation maximum	95 %
Protection class IP	IP20
Design, dimensions and weight	
Module format	Compact module S7-1500 single width
Width	35 mm
Height	142 mm
Depth	129 mm
Net weight	0.27 kg
Mounting type	
• S7-1500 rail mounting	Yes
Product properties, functions, components general	
Number of units	
• per CPU maximum	8
• Note	depending on CPU type

SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

CP 1542-5

■ **Technical specifications** (continued)	
Article number	**6GK7542-5FX00-0XE0**
Product type designation	CP 1542-5
Performance data PROFIBUS DP	
Service as DP master	
• DPV1	Yes
Number of DP slaves on DP master usable	32
Amount of data	
• of the address area of the inputs as DP master total	2 048 byte
• of the address area of the outputs as DP master total	2 048 byte
• of the address area of the inputs per DP slave	244 byte
• of the address area of the outputs per DP slave	244 byte
Service as DP slave	
• DPV0	Yes
• DPV1	Yes
Amount of data	
• of the address area of the inputs as DP slave total	240 byte
• of the address area of the outputs as DP slave total	240 byte
Performance data S7 communication	
Number of possible connections for S7 communication	
• maximum	16
• Note	depending on the system upper limit
Performance data multi-protocol mode	
Number of active connections with multi-protocol mode	16
Performance data telecontrol	
Protocol is supported	
• TCP/IP	No
Product functions management, configuration	
Configuration software	
• required	STEP 7 Professional V12 SP1 (TIA Portal) or higher
Identification & maintenance function	
• I&M0 - device-specific information	Yes
• I&M1 – higher-level designation/ location designation	Yes
Product functions Diagnosis	
Product function Web-based diagnostics	Yes; yes, via S7-1500 CPU
Product functions Time	
Product function pass on time synchronization	Yes

■ **Ordering data**	**Article No.**
CP 1542-5 communications processor	
Communications module for electrical connection of SIMATIC S7-1500 to PROFIBUS as DP master or DP slave; PG/OP communication, time synchronization, diagnostics; smaller quantity structure	**6GK7542-5FX00-0XE0**
Accessories	
PROFIBUS FastConnect RS 485 connection plug	
With 90° cable outlet; insulation displacement technology, max. transmission rate 12 Mbps	
• Without programming device interface	**6ES7972-0BA52-0XA0**
• With programming device interface	**6ES7972-0BB52-0XA0**
PROFIBUS FC Standard Cable	
2-wire bus cable, shielded, special design for fast mounting, delivery unit: max. 1000 m, minimum order quantity 20 m, sold by the meter	**6XV1830-0EH10**
PROFIBUS FastConnect stripping tool	
Stripping tool for fast stripping of the PROFIBUS FastConnect bus cable	**6GK1905-6AA00**
PROFIBUS bus terminal 12M	
Bus terminal for connection of PROFIBUS stations for up to 12 Mbps with connecting cable	**6GK1500-0AA10**

■ **Overview**

Communications module for connecting a SIMATIC S7-1500 to PROFINET networks as PROFINET IO controller or PROFINET IO device.

The CM 1542-1 supports the following communication services:

- PG/OP communication
- S7 communication
- Open communication (SEND/RECEIVE)
- PROFINET communication
- IT communication;
  - web diagnostics by means of access to the Web server of the S7-1500 system
  - Static IP routing with up to 1 Mbps via IPv4 to other CM 1543-1 / CM 1542-1 units in an S7-1500 station, e.g., for web server accesses without real-time capability.

4

ISO	TCP/UDP	PN	MRP	IT	IP-R	PG/OP	S7/S5
	●	●	●	●	●	●	●

■ **Technical specifications**

Article number	6GK7542-1AX00-0XE0
Product type designation	CM 1542-1
Transmission rate	
Transfer rate	
• at the 1st interface	10 ... 100 Mbps
Interfaces	
Number of interfaces acc. to Industrial Ethernet	1
Number of electrical connections	
• at the 1st interface acc. to Industrial Ethernet	2
Type of electrical connection	
• at the 1st interface acc. to Industrial Ethernet	RJ45 port
Supply voltage, current consumption, power loss	
Type of voltage of the supply voltage	DC
Supply voltage 1 from backplane bus	15 V
Relative symmetrical tolerance at DC	
• at 15 V	3 %
Consumed current	
• from backplane bus at DC at 15 V typical	0.22 A
Power loss [W]	3.3 W
Permitted ambient conditions	
Ambient temperature	
• for vertical installation during operation	0 ... 40 °C
• for horizontally arranged busbars during operation	0 ... 60 °C
• during storage	-40 ... +70 °C
• during transport	-40 ... +70 °C
Relative humidity at 25 °C without condensation during operation maximum	95 %
Protection class IP	IP20

Article number	6GK7542-1AX00-0XE0
Product type designation	CM 1542-1
Design, dimensions and weight	
Module format	Compact module S7-1500 single width
Width	35 mm
Height	142 mm
Depth	129 mm
Net weight	0.4 kg
Mounting type	
• S7-1500 rail mounting	Yes
Product properties, functions, components general	
Number of units	
• per CPU maximum	8
• Note	depending on CPU type
Performance data open communication	
Number of possible connections for open communication	
• by means of T blocks maximum	64; depending on the system upper limit
Amount of data	
• as user data per ISO on TCP connection for open communication by means of T blocks maximum	65 536 byte
Number of Multicast stations	6
Performance data S7 communication	
Number of possible connections for S7 communication	
• maximum	64
• Note	depending on the system upper limit

SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

■ **Technical specifications** (continued)

Article number	6GK7542-1AX00-0XE0
Product type designation	CM 1542-1
Performance data multi-protocol mode	
Number of active connections with multi-protocol mode	64
Performance data PROFINET communication as PN IO-Controller	
Product function PROFINET IO controller	Yes
Number of PN IO devices on PROFINET IO controller usable total	128
Number of PN IO IRT devices on PROFINET IO controller usable	64
Number of external PN IO lines with PROFINET per rack	10
Amount of data	
• as user data for input variables as PROFINET IO controller maximum	8 Kibyte
• as user data for input variables as PROFINET IO controller maximum	8 Kibyte
• as user data for input variables per PN IO device as PROFINET IO controller maximum	1 433 byte
• as user data for output variables per PN IO device as PROFINET IO controller maximum	1 433 byte
• as user data for input variables per PN IO device for each sub-module as PROFINET IO controller maximum	256 byte
• as user data for output variables per PN IO device for each sub-module as PROFINET IO controller maximum	256 byte
Performance data PROFINET communication as PN IO-Device	
Product function PROFINET IO device	Yes
Amount of data	
• as user data for input variables as PROFINET IO device maximum	8 192 byte
• as user data for input variables as PROFINET IO device maximum	8 192 byte
• as user data for input variables for each sub-module as PROFINET IO device	256 byte
• as user data for input variables for each sub-module as PROFINET IO device	256 byte
• as user data for the consistency area for each sub-module	256 byte
Number of submodules per PROFINET IO-Device	32
Performance data telecontrol	
Protocol is supported	
• TCP/IP	Yes
Product functions management, configuration	
Product function MIB support	Yes
Protocol is supported	
• SNMP v1	Yes
• DCP	Yes
• LLDP	Yes
Configuration software	
• required	STEP 7 Professional V14 (TIA Portal) or higher

Article number	6GK7542-1AX00-0XE0
Product type designation	CM 1542-1
Identification & maintenance function	
• I&M0 - device-specific information	Yes
• I&M1 – higher-level designation/ location designation	Yes
Product functions Diagnosis	
Product function Web-based diagnostics	Yes; yes, via S7-1500 CPU
Product functions switch	
Product feature Switch	Yes
Product function	
• switch-managed	No
• with IRT PROFINET IO switch	Yes
• Configuration with STEP 7	Yes
Product functions Routing	
Service Routing Note	IP routing up to 1 Mbps
Product function	
• Static IP routing	Yes
• Static IP routing IPv6	No
• dynamic IP routing	No
• dynamic IP routing IPv6	No
Protocol is supported	
• RIP v1	No
• RIPv2	No
• RIPnG for IPv6	No
• OSPFv2	No
• OSPFv3 for IPv6	No
• VRRP	No
• VRRP for IPv6	No
• BGP	No
• PPP	No
• PPoE via DSL	No
Product functions Redundancy	
Product function	
• Ring redundancy	Yes
• Redundancy manager	Yes
Protocol is supported Media Redundancy Protocol (MRP)	Yes
Product functions Security	
Product function	
• switch-off of non-required services	Yes
• Blocking of communication via physical ports	No
• log file for unauthorized access	No
Product functions Time	
Product function SICLOCK support	Yes
Product function pass on time synchronization	Yes
Protocol is supported	
• NTP	Yes

4

■ Ordering data

	Article No.		Article No.
CM 1542-1 communications module	**6GK7542-1AX00-0XE0**	**Accessories**	
		IE FC RJ45 plug 4 x 2	
For connecting SIMATIC S7-1500 to PROFINET IO, TCP/IP, ISO-on-TCP, UDP, S7 communication, IP broadcast/multicast, SNMPV1, time synchronization via NTP; 2 x RJ45 interface with 10/100 Mbps		RJ45 plug connector for Industrial Ethernet (10/100/1000 Mbps) with a rugged metal enclosure and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface	
		• 1 pack = 1 unit	**6GK1901-1BB11-2AA0**
		• 1 pack = 10 units	**6GK1901-1BB11-2AB0**
		• 1 pack = 50 units	**6GK1901-1BB11-2AE0**
		IE FC TP Standard Cable GP 4 x 2	
		8-wire, shielded TP installation cable for connection to IE FC RJ45 Modular Outlet for universal applications; with UL approval; sold by the meter; max. delivery unit 1000 m, minimum order quantity 20 m	
		• AWG22, for connection to IE FC RJ45 Modular Outlet	**6XV1870-2E**
		• AWG24, for connection to IE FC RJ45 plug 4 x 2	**6XV1878-2A**

4

SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

■ Overview

ISO	TCP/UDP	PN	MRP	IT	IP-R	PG/OP	S7/S5
●	●			●	●	●	●

The SIMATIC CP 1543-1 communications processor securely connects the new SIMATIC S7-1500 controller to Industrial Ethernet networks. By combining a variety of security features such as stateful packet inspection firewalls and VPNs, and data encryption protocols such as FTPS and SNMPv3, the communications processor protects individual S7-1500 stations or even entire automation cells against unauthorized access.

The CP can also be used for linking the S7-1500 station into an IPv6-based network. All functions are configured by means of STEP 7 Professional V12 (TIA Portal) or higher.

The CP 1543-1 supports the following communications services:

- PG/OP communication
- S7 communication
- Open user communication (SEND/RECEIVE, FETCH/WRITE)
- IT communication
  - FTP functions (File Transfer Protocol FTP/FTPS) for file management and access to data blocks in the CPU (client and server function)
  - Access (read and write modes) to csv files stored on the memory card of the CPU via FTP(S)
  - Sending emails via SMTP or ESMTP with "SMTP-Auth" for authentication on an email server (also with IPv6)
  - Static IP routing with up to 1 Mbps via IPv4 to other CM 1543-1 / CM 1542-1 units in an S7-1500 system, e.g., for web server accesses without real-time capability. Securing a cell by activating the security function in the CP 1543-1 automatically deactivates IP routing.
- Security Integrated
  - Stateful Packet Inspection Firewall
  - Secure communication via VPN (IPsec)
- Protocols for secure communication
  - Secure access to the web server of the CPU via the HTTPS protocol
  - Secure file transfer using FTPS
  - Secure transfer of the time of day (NTP)
  - SNMPv3 for tap-proof transfer of network analysis information
  - Encrypted email communication via SMTPS (Port 587)
  - Open communication over TCP/IP
- Integration of the S7-1500 into IPv6-based networks
  An IPv6-compliant IP address can be used for the following communication services:
  - FETCH/WRITE access (CP as server)
  - FTP server mode
  - FTP client mode with addressing by program block
  - Email transfer with addressing by program block

■ Technical specifications

Article number	**6GK7543-1AX00-0XE0**
Product type designation	CP 1543-1
Transmission rate	
Transfer rate	
• at the 1st interface	10 ... 1 000 Mbps
Interfaces	
Number of interfaces acc. to Industrial Ethernet	1
Number of electrical connections	
• at the 1st interface acc. to Industrial Ethernet	1
Type of electrical connection	
• at the 1st interface acc. to Industrial Ethernet	RJ45 port
Supply voltage, current consumption, power loss	
Type of voltage of the supply voltage	DC
Supply voltage 1 from backplane bus	15 V
Relative symmetrical tolerance at DC	
• at 15 V	3 %
Consumed current	
• from backplane bus at DC at 15 V typical	0.35 A
Power loss [W]	5.3 W

Article number	**6GK7543-1AX00-0XE0**
Product type designation	CP 1543-1
Permitted ambient conditions	
Ambient temperature	
• for vertical installation during operation	0 ... 40 °C
• for horizontally arranged busbars during operation	0 ... 60 °C
• during storage	-40 ... +70 °C
• during transport	-40 ... +70 °C
Relative humidity at 25 °C without condensation during operation maximum	95 %
Protection class IP	IP20
Design, dimensions and weight	
Module format	Compact module S7-1500 single width
Width	35 mm
Height	142 mm
Depth	129 mm
Net weight	0.35 kg
Mounting type	
• S7-1500 rail mounting	Yes

■ **Technical specifications** (continued)

Article number	6GK7543-1AX00-0XE0
Product type designation	CP 1543-1
Product properties, functions, components general	
Number of units	
• per CPU maximum	8
• Note	depending on CPU type
Performance data open communication	
Number of possible connections for open communication	
• by means of T blocks maximum	118; depending on the system upper limit
Amount of data	
• as user data per ISO on TCP connection for open communication by means of T blocks maximum	65 536 byte
Number of Multicast stations	118
Performance data S7 communication	
Number of possible connections for S7 communication	
• maximum	118
• Note	depending on the system upper limit
Performance data multi-protocol mode	
Number of active connections with multi-protocol mode	118
Performance data IT functions	
Number of possible connections	
• as client by means of FTP maximum	32
• as server by means of FTP maximum	16
Number of possible connections	
• as server by means of HTTP maximum	4
• as e-mail client maximum	1
Amount of data as user data for email maximum	64 Kibyte
Performance data telecontrol	
Protocol is supported	
• TCP/IP	Yes
Product functions management, configuration	
Product function MIB support	Yes
Protocol is supported	
• SNMP v1	Yes
• DCP	Yes
• LLDP	No
Configuration software	
• required	STEP 7 Professional V14 (TIA Portal) or higher
Identification & maintenance function	
• I&M0 - device-specific information	Yes
• I&M1 – higher-level designation/ location designation	Yes

Article number	6GK7543-1AX00-0XE0
Product type designation	CP 1543-1
Product functions Diagnosis	
Product function Web-based diagnostics	Yes; yes, via S7-1500 CPU
Product functions Routing	
Service Routing Note	IP routing up to 1 Mbps
Product function	
• Static IP routing	Yes
• Static IP routing IPv6	No
• dynamic IP routing	No
• dynamic IP routing IPv6	No
Protocol is supported	
• RIP v1	No
• RIPv2	No
• RIPnG for IPv6	No
• OSPFv2	No
• OSPFv3 for IPv6	No
• VRRP	No
• VRRP for IPv6	No
• BGP	No
• PPP	No
• PPoE via DSL	No
Product functions Security	
Firewall version	stateful inspection
Product function with VPN connection	IPSec
Type of encryption algorithms with VPN connection	AES-256, AES-192, AES-128, 3DES-168, DES-56
Type of authentication procedure with VPN connection	Preshared key (PSK), X.509v3 certificates
Type of hashing algorithms with VPN connection	MD5, SHA-1
Number of possible connections with VPN connection	16
Product function	
• password protection for Web applications	No
• ACL - IP-based	No
• ACL - IP-based for PLC/routing	No
• switch-off of non-required services	Yes
• Blocking of communication via physical ports	No
• log file for unauthorized access	Yes
Product functions Time	
Product function SICLOCK support	Yes
Product function pass on time synchronization	Yes
Protocol is supported	
• NTP	Yes

4

SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

CP 1543-1

■ Ordering data

	Article No.		Article No.
CP 1543-1 communications processor For connecting SIMATIC S7-1500 to Industrial Ethernet via TCP/IP, ISO and UDP and security functions (VPN, firewall); 1 x RJ45 interface with 10/100/1000 Mbps; SNMPv1/V3; time synchronization via NTP, FTP, email, IPv4/IPv6	6GK7543-1AX00-0XE0	**IE FC TP Standard Cable GP 2 x 2 (Type A)** 4-wire, shielded TP installation cable for connection to IE FC outlet RJ45/IE FC RJ45 plug; PROFINET-compatible; with UL approval; sold by the meter; max. delivery unit 1000 m, minimum order quantity 20 m	6XV1840-2AH10
Accessories			
IE FC RJ45 plug 180 2 x 2 RJ45 plug connector for Industrial Ethernet with a rugged metal enclosure and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; with 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface		**IE FC TP Standard Cable GP 4 x 2** 8-wire, shielded TP installation cable for connection to IE FC RJ45 Modular Outlet for universal applications; with UL approval; sold by the meter; max. delivery unit 1000 m, minimum order quantity 20 m	
• 1 pack = 1 unit	6GK1901-1BB10-2AA0		
• 1 pack = 10 units	6GK1901-1BB10-2AB0	• AWG22, for connection to IE FC RJ45 Modular Outlet	6XV1870-2E
• 1 pack = 50 units	6GK1901-1BB10-2AE0	• AWG24, for connection to IE FC RJ45 plug 4 x 2	6XV1878-2A
IE FC RJ45 plug 4 x 2 RJ45 plug connector for Industrial Ethernet (10/100/1000 Mbps) with a rugged metal enclosure and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables; 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface		**IE FC stripping tool** Pre-adjusted stripping tool for fast stripping of Industrial Ethernet FC cables	6GK1901-1GA00
• 1 pack = 1 unit	6GK1901-1BB11-2AA0		
• 1 pack = 10 units	6GK1901-1BB11-2AB0		
• 1 pack = 50 units	6GK1901-1BB11-2AE0		

4

4

Overview

- TIM 1531 IRC communication module for telecontrol applications with four interfaces as a stand-alone device for SIMATIC S7-1500 for use in wide area networks (WANs)
- For universal use in a station, node station and control center
- Communication either via the SINAUT ST7, IEC 60870-5-101/104 or DNP3 telecontrol protocols
- Operation via VPN (IPsec/OpenVPN) with additional SIMATIC NET components
- Wireless communication via mobile wireless routers, modems or radio devices
- Wired communication via Ethernet, Internet, 2/4 wire cables (SHDSL), dialup modems or dedicated line modem
- Frame buffer for seamless recording of data
- Support of redundant communication paths
- Simple configuration with STEP 7 Professional V15.1 (TIA Portal)

Technical specifications

Article number	6GK7543-1MX00-0XE0
Product type designation	TIM 1531 IRC
Transmission rate	
Transfer rate	
• at the 1st interface	10 ... 1 000 Mbps
• at the 2nd interface	10 ... 100 Mbps
• at interface 3	10 ... 100 Mbps
• acc. to RS 232	300 ... 115 200 bit/s
Interfaces	
Number of interfaces acc. to Industrial Ethernet	3
Number of electrical connections	
• for external data transmission acc. to RS 232	1
• for power supply	1
Number of slots	
• for memory cards	1
Type of electrical connection	
• of Industrial Ethernet interface	RJ45 port
• at interface 1 for external data transmission	9 pin Sub-D-connector, RS232 switchable to RS485
• for power supply	2-pole plugable terminal block
Slot version	
• of the memory card	SD 1.0, SD 1.1, SDHC, Siemens SMC
Storage capacity of the memory card maximum	32 Gibyte
Supply voltage, current consumption, power loss	
Type of voltage of the supply voltage	DC
Supply voltage	24 V
Supply voltage	20.4 ... 28.8 V
Supply voltage external at DC Rated value	24 V
Supply voltage external at DC rated value	20.4 ... 28.8 V

Article number	6GK7543-1MX00-0XE0
Product type designation	TIM 1531 IRC
Consumed current	
• from external supply voltage at DC at 24 V typical	0.15 A
• from external supply voltage at DC at 24 V maximum	0.3 A
Power loss [W] with external supply voltage at 24 V DC	
• in update mode typical	3.9 W
• in communication mode typical	3.9 W
Product extension optional Backup battery	No
Permitted ambient conditions	
Ambient temperature	
• during operation	0 ... 70 °C
• for vertical installation during operation	0 ... 50 °C
• for horizontally arranged busbars during operation	0 ... 70 °C
• during storage	-40 ... +70 °C
• during transport	-40 ... +70 °C
Relative humidity at 25 °C without condensation during operation maximum	95 %
Protection class IP	IP20
Design, dimensions and weight	
Module format	Compact module S7-1500 double-wide
Width	70 mm
Height	147 mm
Depth	129 mm
Net weight	0.525 kg
Mounting type	
• 35 mm DIN rail mounting	No
• S7-300 rail mounting	No
• S7-1500 rail mounting	Yes

SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

TIM 1531 IRC (for S7-1500)

■ **Technical specifications** (continued)

Article number	6GK7543-1MX00-0XE0
Product type designation	TIM 1531 IRC
Product properties, functions, components general	
Product function	
• DynDNS client	No
Number of units	
• Note	Number of TIM per S7-1500: 1
Wire length	
• with RS 232 interface maximum	6 m
• with RS 485 interface maximum	30 m
Performance data S7 communication	
Number of possible connections for S7 communication	
• maximum	132
• with PG connections maximum	4
• with PG/OP connections maximum	4
• with OP connections maximum	4
• Note	only via LAN
Service	
• of SIMATIC communication as server	Yes
• SINAUT ST7 via S7 communication	Yes
• PG/OP communication	Yes
Performance data IT functions	
Number of possible connections	
• as server by means of HTTP maximum	2
• as server by means of HTTPS maximum	2
• as e-mail client maximum	1
Performance data telecontrol	
Suitability for use	
• Node station	Yes
• substation	Yes
• TIM control center	Yes
Protocol is supported	
• DNP3	Yes
• IEC 60870-5	Yes
• SINAUT ST1 protocol	No
• SINAUT ST7 protocol	Yes
• Modbus RTU	No
Product function data buffering if connection is aborted	Yes
Number of data points per station maximum	3 000
Number of DNP3 masters	
• for Ethernet maximum	4
• with RS 232 interface maximum	4
Product feature Buffered message frame memory	Yes
Transmission format	
• for SINAUT ST7 protocol with polling or spontaneous 10-bit or 11-bit	Yes
Operating mode for scanning of data transmission	
• with dedicated line/radio link with SINAUT ST7 protocol	Polling, polling with time slot procedure
• with dial-up network with SINAUT ST7 protocol	spontaneous
Hamming distance	
• for SINAUT ST7 protocol	4

Article number	6GK7543-1MX00-0XE0
Product type designation	TIM 1531 IRC
Performance data Teleservice	
Diagnostics function online diagnostics with SIMATIC STEP 7	Yes
Product function	
• program download with SIMATIC STEP 7	Yes
• Remote firmware update	Yes
• remote configuration	Yes
Product functions management, configuration	
Product function MIB support	Yes
Protocol is supported	
• SNMP v1	Yes
• SNMP v3	Yes
• DCP	Yes
• LLDP	Yes
Configuration software	
• required	STEP 7 Professional V14 SP1 (TIA Portal) or higher
• for CPU configuring required SINAUT TD7 block library for CPU	No
• for PG configuring required SINAUT ST7 configuration software for PG	No
Storage location of TIM configuration data	Flash or SD card of the TIM 1531 IRC
Identification & maintenance function	
• I&M0 - device-specific information	Yes
• I&M1 – higher-level designation/ location designation	Yes
• I&M2 - installation date	Yes
• I&M3 - comment	Yes
Product functions Diagnosis	
Product function Web-based diagnostics	Yes
Product functions Routing	
Service Routing Note	IP routing up to 1 Mbps
Product function	
• Static IP routing	Yes
• Static IP routing IPv6	Yes
• dynamic IP routing	No
• dynamic IP routing IPv6	No
Protocol is supported	
• RIP v1	No
• RIPv2	No
• RIPnG for IPv6	No
• OSPFv2	No
• OSPFv3 for IPv6	No
• VRRP	No
• VRRP for IPv6	No
• BGP	No
• PPP	No
• PPoE via DSL	No

4

■ **Technical specifications** (continued)

Article number	**6GK7543-1MX00-0XE0**
Product type designation	TIM 1531 IRC
Product functions Security	
Product function	
• MSC client via GPRS modem with MSC capability	Yes
Protocol	
• is supported MSC protocol	Yes
• with Virtual Private Network MSC is supported	TCP/IP
Key length for MSC with Virtual Private Network	128 bit
Number of possible connections	
• as MSC client with VPN connection	1
• as MSC server with VPN connection	127
Product functions Time	
Product function SICLOCK support	No
Product function pass on time synchronization	Yes
Protocol is supported	
• NTP	Yes
• NTP (secure)	Yes
Product component Hardware real-time clock	No
Product feature Hardware real-time clock w. battery backup	No
time synchronization	
• from NTP-server	Yes
• from GPS-signal	No
• from control center	Yes
• from mobile network provider	No
• PC	No
• manual setting	No
Product functions Position recognition	
Product function	
• position detection with GPS	No
• pass on position data	No

■ **Ordering data** | **Article No.** |
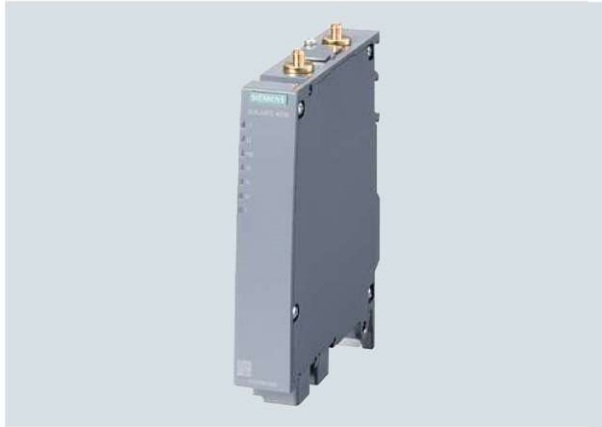|---|---|
TIM 1531 IRC communication module	**6GK7543-1MX00-0XE0**
TIM 1531 IRC communication module for SIMATIC S7-1500, S7-400, S7-300 with SINAUT ST7, DNP3 and IEC 60870-5-101/104 with three RJ45 interfaces for communication via IP-based networks (WAN/LAN) and an RS 232/RS 485 interface for communication via conventional WANs	
Accessories	
Engineering software STEP 7 Professional V15.1	
SIMATIC STEP 7 Professional V15.1 floating license	**6ES7822-1AA05-0YA5**
Upgrade SIMATIC STEP 7 Basic V11 ... V14 -> V15.1 floating license	**6ES7822-0AA05-0YE5**
Upgrade SIMATIC STEP 7 Professional V11 ... V14 -> V15.1 ‖ V11 ... V14/201x combo -> V15.1/ 2017 SR1 combo or 2006 ... 2010 -> V15.1/2017 SR1 combo floating license	**6ES7822-1AA05-0YE5**
DIN rail	**6ES7590-1AB60-0AA0**
SIMATIC S7-1500, 160 mm DIN rail; incl. grounding screw, integrated DIN rail for mounting small items, such as terminals, relays	
SIMATIC memory card	**6ES7954-8LF03-0AA0**
SIMATIC S7, Memory Card for S7-1x 00 CPU/SINAMICS, 3.3 V flash, 24 MB	
SCALANCE M874-2	**6GK5874-2AA00-2AA2**
2G mobile wireless routers (GPRS/EDGE); 2 RJ45 ports, firewall, VPN, NAT	
SCALANCE M874-3	**6GK5874-3AA00-2AA2**
3G mobile wireless routers (GPRS/EDGE/HSPA+); 2 RJ45 ports, firewall, VPN, NAT	
SCALANCE M876-3	**6GK5876-3AA02-2BA2**
3G router; for wireless IP communication of Ethernet-based programmable controllers via 3G mobile radio HSPA+/EV-DO, VPN, firewall, NAT; 4-port switch; antenna diversity; 1 x digital input, 1 x digital output; note country approvals. Note provider approvals!	
SCALANCE M876-4 (EU)	**6GK5876-4AA00-2BA2**
4G router; for wireless IP communication of Ethernet-based programmable controllers via LTE (4G) mobile radio optimized for use in Europe, VPN, firewall, NAT; 4-port switch; 2 x SMA antenna, MIMO technology; 1 x digital input, 1 x digital output; note country approvals.	

4

SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

TIM 1531 IRC (for S7-1500)

■ Ordering data	Article No.
SCALANCE M876-4 (NAM)	6GK5876-4AA00-2DA2
4G router (NAM); for wireless IP communication of Ethernet-based programmable controllers via LTE (4G) mobile radio optimized for use in North America, VPN, firewall, NAT; 4-port switch; 2 x SMA antenna, MIMO technology; 1 x digital input, 1 x digital output; note country approvals!	
SCALANCE M812-1 ADSL router	6GK5812-1BA00-2AA2
For wired IP communication of Ethernet-based automation devices via Internet Service Providers; VPN, firewall, NAT; 1x Ethernet RJ45 port, 1x digital input, 1x digital output; ADSL2+, Annex B	
SCALANCE M812-1 ADSL router	6GK5812-1BA00-2AA2
For wired IP communication of Ethernet-based automation devices via Internet Service Providers; VPN, firewall, NAT; 4-port switch; 1x digital input, 1x digital output; ADSL2+, Annex A	
SCALANCE M816-1 ADSL router	6GK5816-1BA00-2AA2
For wired IP communication of Ethernet-based automation devices via Internet Service Providers; VPN, firewall, NAT; 4-port switch; 1x digital input, 1x digital output; ADSL2+, Annex B, J	
SCALANCE M826-2 SHDSL router	6GK5826-2AB00-2AB2
For IP communication via the 2-wire and 4-wire cables of Ethernet-based automation devices; SHDSL topology: point-to-point, bonding, line bridge mode; routing mode with VPN, firewall, NAT; 4-port switch; 1x digital input, 1x digital output	

	Article No.
MD720 modem	6NH9720-3AA01-0XX0
GSM/GPRS, 2G mobile modem with RS 232 interface; for GSM services CSD, GPRS, SMS; Quadband GSM; AT command interface; note country-specific approvals! Autom. GPRS connection; including gender changer for RS 232/PPI adapter	
Connecting cable	6NH7701-4BN
With one end open for connecting a TIM (RS 232) to a third-party modem or radio unit (RS 232); cable length 2.5 m	
Connecting cable	6NH7701-0AR
For connecting two TIMs via their RS 232 interfaces without modems (null modem); cable length 6 m	
SITOP compact 24 V/0.6 A	6EP1331-5BA00
1-phase power supply with wide range input 85 ... 264 V AC/ 110 ... 300 V DC, 24 V stabilized output voltage, 0.6 A nominal value of output current, slim design	
SIMATIC PM 1507 24 V/3 A	6EP1332-4BA00
Stabilized power supply for SIMATIC S7-1500 input: 120/230 V AC output: 24 V DC/3 A	
SIMATIC PM 1507 24 V/8 A	6EP1333-4BA00
Stabilized power supply for SIMATIC S7-1500 input: 120/230 V AC output: 24 V DC/8 A	

4

■ Overview

- Access points in SIMATIC S7-1500 design are suitable for applications where the device is to be mounted in the control cabinet

■ Technical specifications

Article number	6GK5774-1FX00-0AA0
	6GK5774-1FX00-0AB0 [1]
	6GK5774-1FX00-0AC0 [2]
Product type designation	SCALANCE W774-1 RJ45
Transmission rate	
Transfer rate	
• with WLAN maximum	300 Mbps
• for Industrial Ethernet	10, 100 Mbps
Transfer rate for Industrial Ethernet	
• minimum	10 Mbps
• maximum	100 Mbps
Interfaces	
Number of electrical connections	
• for network components or terminal equipment	2
• for power supply	1
• for redundant voltage supply	1
Type of electrical connection	
• for network components or terminal equipment	RJ45 socket
• for power supply	4-pole screw terminal, PoE
design of the removable storage	
• C-PLUG	Yes
• KEY-PLUG	Yes
Interfaces wireless	
Number of radio cards permanently installed	1
Transmission mode for multiple input multiple output (MIMO)	2x2
Number of spatial streams	2
Number of electrical connections for external antenna(s)	2
Type of electrical connection for external antenna(s)	R-SMA (socket)
Product feature external antenna can be mounted directly on device	Yes

Article number	6GK5774-1FX00-0AA0
	6GK5774-1FX00-0AB0 [1]
	6GK5774-1FX00-0AC0 [2]
Product type designation	SCALANCE W774-1 RJ45
Supply voltage, current consumption, power loss	
Type of voltage of the supply voltage	DC
Supply voltage 1	
• from terminal block	19.2 V
Supply voltage 2	
• from terminal block	28.8 V
Supply voltage	
• from Power-over-Ethernet acc. to IEEE802.3at for type 1 and IEEE802.3af	48 V
Consumed current	
• at DC at 24 V typical	0.25 A
• with Power-over-Ethernet according to IEEE802.3at for type 1 and IEEE802.3af typical	0.125 A
Power loss [W]	
• at DC at 24 V typical	6 W
• with Power-over-Ethernet according to IEEE802.3at for type 1 and IEEE802.3af typical	6 W
Permitted ambient conditions	
Ambient temperature	
• during operation	-20 ... +60 °C
• during storage	-40 ... +85 °C
• during transport	-40 ... +85 °C
Relative humidity at 25 °C without condensation during operation maximum	97 %
Ambient condition for operation	When used under hazardous conditions (Zone 2), the SCALANCE W774-1 RJ45 or W734-1 RJ45 product must be installed in an enclosure. To comply with EN 50021, this enclosure must meet the requirements of at least IP 54 in compliance with EN 60529.
Protection class IP	IP30

[1] Wireless approval in the USA
[2] Wireless approval in Israel

SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

SCALANCE W774 RJ45 for the control cabinet

■ **Technical specifications** (continued)

Article number	6GK5774-1FX00-0AA0
	6GK5774-1FX00-0AB0 [1]
	6GK5774-1FX00-0AC0 [2]
Product type designation	SCALANCE W774-1 RJ45
Design, dimensions and weight	
Width	26 mm
Height	156 mm
Depth	127 mm
Width of the enclosure without antenna	26 mm
Height of the enclosure without antenna	147 mm
Depth of the enclosure without antenna	127 mm
Net weight	0.52 kg
Mounting type	wall mounting only if flat mounted
• S7-300 rail mounting	Yes
• S7-1500 rail mounting	Yes
• 35 mm DIN rail mounting	Yes
• wall mounting	Yes
Wireless frequencies	
Operating frequency	
• for WLAN in 2.4 GHz frequency band	2.41 ... 2.48 GHz
• for WLAN in 5 GHz frequency band	4.9 ... 5.8 GHz
Product properties, functions, components general	
Product function Access Point Mode	Yes
Product function Client Mode	Yes
Number of SSIDs	4
Product function	
• iPCF Access Point	Yes; Only in combination with the 'KEY-PLUG W780 iFeatures'
• iPCF client	Yes; Only in combination with the 'KEY-PLUG W740 iFeatures'
• iPCF-MC Access Point	No
• iPCF-MC client	Yes; Only in combination with the 'KEY-PLUG W740 iFeatures'
No. of iPCF-capable radio modules	1
Product function iREF	Yes; Only in combination with the 'KEY-PLUG W780 iFeatures' or 'KEY-PLUG W740 iFeatures'
No. of iREF-capable radio modules	1
Product function iPRP	Yes; In combination with the 'KEY-PLUG W780 iFeatures' only
Product functions management, configuration	
Number of manageable IP addresses in client	8
Product function	
• CLI	Yes
• web-based management	Yes
• MIB support	Yes
• TRAPs via email	Yes
• Configuration with STEP 7	Yes
• configuration with STEP 7 in the TIA Portal	Yes
• operation with IWLAN controller	No
• operation with Enterasys WLAN controller	No
• forced roaming on IP down with IWLAN	Yes
• forced roaming on link down with IWLAN	Yes
• WDS	Yes

Article number	6GK5774-1FX00-0AA0
	6GK5774-1FX00-0AB0 [1]
	6GK5774-1FX00-0AC0 [2]
Product type designation	SCALANCE W774-1 RJ45
Protocol is supported	
• Address Resolution Protocol (ARP)	Yes
• ICMP	Yes
• Telnet	Yes
• HTTP	Yes
• HTTPS	Yes
• TFTP	Yes
• DCP	Yes
• LLDP	Yes
Identification & maintenance function	
• I&M0 - device-specific information	Yes
• I&M1 – higher-level designation/ location designation	Yes
Product functions Diagnosis	
Product function	
• PROFINET IO diagnosis	Yes
• Link Check	No
• connection monitoring IP-Alive	No
• localization via Aeroscout	Yes
• SysLog	Yes
Protocol is supported	
• SNMP v1	Yes
• SNMP v2	Yes
• SNMP v3	Yes
Product functions VLAN	
Product function	
• function VLAN with IWLAN	Yes
Product functions DHCP	
Product function	
• DHCP client	Yes
• in Client Mode DHCP server via LAN	Yes
• DHCP Option 82	Yes
Product functions Redundancy	
Protocol is supported	
• STP/RSTP	Yes
• MSTP	Yes
• RSTP	Yes
Product functions Security	
Product function	
• ACL - MAC-based	Yes
• Management security, ACL-IP based	Yes
• IEEE 802.1x (radius)	Yes
• NAT/NAPT	No
• access protection according to IEEE802.11i	Yes
• WPA/WPA2	Yes
• TKIP/AES	Yes
Protocol is supported	
• SSH	Yes
• RADIUS	Yes
Product functions Time	
Protocol is supported	
• NTP	Yes
• SNTP	Yes
• SIMATIC Time	Yes

[1] Wireless approval in the USA
[2] Wireless approval in Israel

Technical specifications (continued)

Article number	**6GK5774-1FX00-0AA0**
	6GK5774-1FX00-0AB0 [1]
	6GK5774-1FX00-0AC0 [2]
Product type designation	SCALANCE W774-1 RJ45
Standards, specifications, approvals	
Standard	
• for FM	FM 3611: Class I, Division 2, Groups A,B,C,D, T4 / Class 1, Zone 2, Group IIC, T4
• for hazardous zone	EN 60079-15:2005, EN 60079-0:2006, II 3 G Ex nA II T4 KEMA 07 ATEX 0145X
• for safety from CSA and UL	UL 60950-1 CSA C22.2 No. 60950-1
Certificate of suitability	
• EC declaration of conformity	Yes
• CE marking	Yes
• C-Tick	Yes
• E1 approval	No
• Railway application in accordance with EN 50155	No
• Railway application in accordance with EN 50121-4	No
• NEMA TS2	No
• IEC 61375	No
• IEC 61850-3	No
• NEMA4X	No
• Power-over-Ethernet according IEEE802.3at for type 1 and IEEE802.3af	Yes
• Power-over-Ethernet according to IEEE802.3at for type 2	Yes
Standard for wireless communication	
• IEEE 802.11a	Yes
• IEEE 802.11b	Yes
• IEEE 802.11e	Yes
• IEEE 802.11g	Yes
• IEEE 802.11h	Yes
• IEEE 802.11i	Yes
• IEEE 802.11n	Yes
Wireless approval	You will find the current list of countries at: www.siemens.com/ wireless-approvals
Marine classification association	
• American Bureau of Shipping Europe Ltd. (ABS)	Yes
• Bureau Veritas (BV)	Yes
• DNV GL	Yes
• Lloyds Register of Shipping (LRS)	Yes
• Nippon Kaiji Kyokai (NK)	Yes
• Polski Rejestr Statkow (PRS)	Yes
• Royal Institution of Naval Architects (RINA)	Yes
Accessories	
accessories	24 V DC screw terminal included in scope of delivery

[1] Wireless approval in the USA
[2] Wireless approval in Israel

Ordering data

	Article No.
Access Points SCALANCE W774	
IWLAN access points with built-in wireless interface for establishing wireless connections with iFeatures; wireless networks IEEE 802.11a/b/ g/h/n at 2.4/5 GHz up to 300 Mbps; WPA2/AES; integrated 2-port switch; Power over Ethernet (PoE), IP30 degree of protection (-20°C to +60°C); scope of supply: Mounting hardware; 4-pin screw terminal for 24 V DC; manual on CD-ROM; English/German	
SCALANCE W774-1 RJ45	
IWLAN Access Point with one built-in wireless interface	
• Country approvals for operation outside the USA	**6GK5774-1FX00-0AA0**
• Country approvals for operation within the USA [1]	**6GK5774-1FX00-0AB0**
• Country approvals for operation in Israel [1]	**6GK5774-1FX00-0AC0**
Accessories	
KEY-PLUG W780 iFeatures	**6GK5907-8PA00**
Removable data storage medium for enabling additional iFeatures, for simple device replacement if a fault occurs and for storage of configuration data; can be used in SCALANCE W access points with PLUG compartment	
C-PLUG	**6GK1900-0AB10**
Removable data storage medium for simple replacement of devices if a fault occurs; for storing configuration data; can be used in SIMATIC NET products with PLUG compartment	
IE FC RJ45 plug 180 2 x 2	
RJ45 connector for Industrial Ethernet with a rugged metal enclosure and integrated insulation-displacement contacts for connecting Industrial Ethernet FC installation cables; with a 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface	
• 1 pack = 1 unit	**6GK1901-1BB10-2AA0**
• 1 pack = 10 units	**6GK1901-1BB10-2AB0**
• 1 pack = 50 units	**6GK1901-1BB10-2AE0**
IE FC Standard Cable GP 2 x 2	**6XV1840-2AH10**
4-wire, shielded TP installation cable for connection to IE FC RJ45 outlet plug / IE FC RJ45 plug; PROFINET-compliant; with UL approval; sold by the meter; max. delivery unit 1 000 m, minimum order quantity 20 m	
IE FC stripping tool	**6GK1901-1GA00**
Pre-adjusted stripping tool for fast stripping of Industrial Ethernet FC cables	

[1] Please note country approvals under:
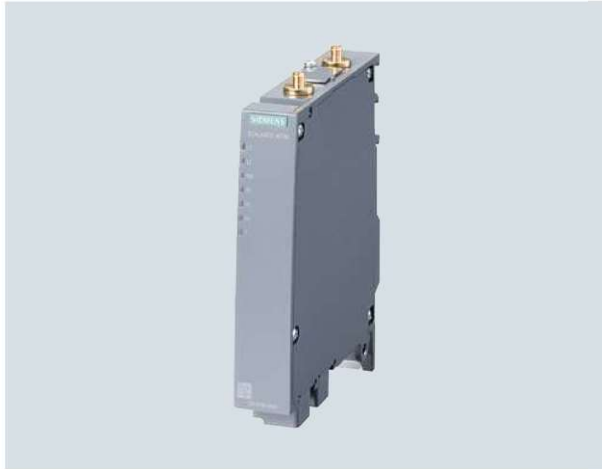http://www.siemens.com/wireless-approvals

SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

SCALANCE W734 RJ45 for the control cabinet

■ Overview

- Client modules in SIMATIC S7-1500 design are suitable for applications where the device is to be mounted in the control cabinet

ET 200MP station with SCALANCE W734 RJ45

■ Technical specifications

Article number	6GK5734-1FX00-0AA0
	6GK5734-1FX00-0AB0 [1]
Product type designation	SCALANCE W734-1 RJ45
Transmission rate	
Transfer rate	
• with WLAN maximum	300 Mbps
• for Industrial Ethernet	10, 100 Mbps
Transfer rate for Industrial Ethernet	
• minimum	10 Mbps
• maximum	100 Mbps
Interfaces	
Number of electrical connections	
• for network components or terminal equipment	2
• for power supply	1
• for redundant voltage supply	1
Type of electrical connection	
• for network components or terminal equipment	RJ45 socket
• for power supply	4-pole screw terminal, PoE
design of the removable storage	
• C-PLUG	Yes
• KEY-PLUG	Yes
Interfaces wireless	
Number of radio cards permanently installed	1
Transmission mode for multiple input multiple output (MIMO)	2x2
Number of spatial streams	2
Number of electrical connections for external antenna(s)	2
Type of electrical connection for external antenna(s)	R-SMA (socket)
Product feature external antenna can be mounted directly on device	Yes

Article number	6GK5734-1FX00-0AA0
	6GK5734-1FX00-0AB0 [1]
Product type designation	SCALANCE W734-1 RJ45
Supply voltage, current consumption, power loss	
Type of voltage of the supply voltage	DC
Supply voltage 1	
• from terminal block	19.2 V
Supply voltage 2	
• from terminal block	28.8 V
Supply voltage	
• from Power-over-Ethernet acc. to IEEE802.3at for type 1 and IEEE802.3af	48 V
Consumed current	
• at DC at 24 V typical	0.25 A
• with Power-over-Ethernet according to IEEE802.3at for type 1 and IEEE802.3af typical	0.125 A
Power loss [W]	
• at DC at 24 V typical	6 W
• with Power-over-Ethernet according to IEEE802.3at for type 1 and IEEE802.3af typical	6 W
Permitted ambient conditions	
Ambient temperature	
• during operation	-20 ... +60 °C
• during storage	-40 ... +85 °C
• during transport	-40 ... +85 °C
Relative humidity at 25 °C without condensation during operation maximum	95 %
Ambient condition for operation	When used under hazardous conditions (Zone 2), the SCALANCE W774-1 RJ45 or W734-1 RJ45 product must be installed in an enclosure. To comply with EN 50021, this enclosure must meet the requirements of at least IP 54 in compliance with EN 60529.
Protection class IP	IP30

[1] Wireless approval in the USA

■ Technical specifications (continued)

Article number	6GK5734-1FX00-0AA0
	6GK5734-1FX00-0AB0 [1]
Product type designation	SCALANCE W734-1 RJ45
Design, dimensions and weight	
Width	26 mm
Height	156 mm
Depth	127 mm
Width of the enclosure without antenna	26 mm
Height of the enclosure without antenna	147 mm
Depth of the enclosure without antenna	127 mm
Net weight	0.52 kg
Mounting type	wall mounting only if flat mounted
• S7-300 rail mounting	Yes
• S7-1500 rail mounting	Yes
• 35 mm DIN rail mounting	Yes
• wall mounting	Yes
Wireless frequencies	
Operating frequency	
• for WLAN in 2.4 GHz frequency band	2.41 ... 2.48 GHz
• for WLAN in 5 GHz frequency band	4.9 ... 5.8 GHz
Product properties, functions, components general	
Product function Access Point Mode	No
Product function Client Mode	Yes
Product function	
• iPCF client	Yes; Only in combination with the 'KEY-PLUG W780 iFeatures' or 'KEY-PLUG W740 iFeatures'
• iPCF-MC client	Yes; Only in combination with 'KEY-PLUG W780 iFeatures' or 'KEY-PLUG W740 iFeatures'
Number of iPCF-capable radio modules	1
Product function iPRP	Yes; In combination with the 'KEY-PLUG W780 iFeatures' or 'KEY-PLUG W740 iFeatures' only
Product functions management, configuration	
Number of manageable IP addresses in client	8
Product function	
• CLI	Yes
• web-based management	Yes
• MIB support	Yes
• TRAPs via email	Yes
• Configuration with STEP 7	Yes
• configuration with STEP 7 in the TIA Portal	Yes
• WDS	No
Protocol is supported	
• Address Resolution Protocol (ARP)	Yes
• ICMP	Yes
• Telnet	Yes
• HTTP	Yes
• HTTPS	Yes
• TFTP	Yes
• DCP	Yes
• LLDP	No
Identification & maintenance function	
• I&M0 - device-specific information	Yes
• I&M1 – higher-level designation/ location designation	Yes

Article number	6GK5734-1FX00-0AA0
	6GK5734-1FX00-0AB0 [1]
Product type designation	SCALANCE W734-1 RJ45
Product functions Diagnosis	
Product function	
• PROFINET IO diagnosis	Yes
• Link Check	No
• connection monitoring IP-Alive	No
• SysLog	Yes
Protocol is supported	
• SNMP v1	Yes
• SNMP v2	Yes
• SNMP v3	Yes
Product functions VLAN	
Product function	
• function VLAN with IWLAN	No
Product functions DHCP	
Product function	
• DHCP client	Yes
• in Client Mode DHCP server via LAN	Yes
• DHCP Option 82	Yes
Product functions Redundancy	
Protocol is supported	
• STP/RSTP	Yes
• MSTP	Yes
• RSTP	Yes
Product functions Security	
Product function	
• ACL - MAC-based	Yes
• Management security, ACL-IP based	Yes
• IEEE 802.1x (radius)	Yes
• NAT/NAPT	Yes
• access protection according to IEEE802.11i	Yes
• WPA/WPA2	Yes
• TKIP/AES	Yes
Protocol is supported	
• SSH	Yes
• RADIUS	Yes
Product functions Time	
Protocol is supported	
• NTP	Yes
• SNTP	Yes
• SIMATIC Time	Yes

[1] Wireless approval in the USA

4

SIMATIC S7-1500 Advanced Controllers
I/O modules
Communication

SCALANCE W734 RJ45 for the control cabinet

Technical specifications (continued)

Article number	**6GK5734-1FX00-0AA0**
	6GK5734-1FX00-0AB0 [1]
Product type designation	SCALANCE W734-1 RJ45
Standards, specifications, approvals	
Standard	
• for FM	FM 3611: Class I, Division 2, Groups A,B,C,D, T4 / Class 1, Zone 2, Group IIC, T4
• for hazardous zone	EN 60079-15:2005, EN 60079-0:2006, II 3 G Ex nA II T4 KEMA 07 ATEX 0145X
• for safety from CSA and UL	UL 60950-1 CSA C22.2 No. 60950-1
Certificate of suitability	
• EC declaration of conformity	Yes
• CE marking	Yes
• C-Tick	Yes
• E1 approval	No
• Railway application in accordance with EN 50155	No
• NEMA TS2	No
• IEC 61375	No
• IEC 61850-3	No
• NEMA4X	No
• Power-over-Ethernet according IEEE802.3at for type 1 and IEEE802.3af	Yes
• Power-over-Ethernet according to IEEE802.3at for type 2	Yes
Standard for wireless communication	
• IEEE 802.11a	Yes
• IEEE 802.11b	Yes
• IEEE 802.11e	Yes
• IEEE 802.11g	Yes
• IEEE 802.11h	Yes
• IEEE 802.11i	Yes
• IEEE 802.11n	Yes
Wireless approval	You will find the current list of countries at: www.siemens.com/wireless-approvals
Marine classification association	
• American Bureau of Shipping Europe Ltd. (ABS)	Yes
• Bureau Veritas (BV)	Yes
• DNV GL	Yes
• Lloyds Register of Shipping (LRS)	Yes
• Nippon Kaiji Kyokai (NK)	Yes
• Polski Rejestr Statkow (PRS)	Yes
• Royal Institution of Naval Architects (RINA)	Yes
Accessories	
accessories	24 V DC screw terminal included in scope of delivery

[1] Wireless approval in the USA

Ordering data

	Article No.
Client Modules SCALANCE W734	
IWLAN Ethernet client modules with built-in wireless interface; wireless networks IEEE 802.11a/b/g/h/n at 2.4/5 GHz up to 300 Mbps; WPA2/AES; integrated 2-port switch; Power over Ethernet (PoE), IP30 degree of protection (-20°C to +60°C); scope of supply: Mounting hardware; 4-pin screw terminal for 24 V DC; manual on CD-ROM; English/German	
SCALANCE W734-1 RJ45	
For managing the wireless connection of up to eight linked devices with Industrial Ethernet connection;	
• Country approvals for operation outside the USA	**6GK5734-1FX00-0AA0**
• Country approvals for operation within the USA [1]	**6GK5734-1FX00-0AB0**
Accessories	
KEY-PLUG W740 iFeatures	**6GK5907-4PA00**
Removable data storage medium for enabling additional iFeatures, for simple device replacement if a fault occurs and for storage of configuration data; can be used in SCALANCE W client modules with plug slot	
C-PLUG	**6GK1900-0AB10**
Removable data storage medium for simple replacement of devices if a fault occurs; for storing configuration data; can be used in SIMATIC NET products with PLUG compartment	
IE FC RJ45 plug 180 2 x 2	
RJ45 connector for Industrial Ethernet with a rugged metal enclosure and integrated insulation-displacement contacts for connecting Industrial Ethernet FC installation cables; with a 180° cable outlet; for network components and CPs/CPUs with Industrial Ethernet interface	
• 1 pack = 1 unit	**6GK1901-1BB10-2AA0**
• 1 pack = 10 units	**6GK1901-1BB10-2AB0**
• 1 pack = 50 units	**6GK1901-1BB10-2AE0**
IE FC Standard Cable GP 2 x 2	**6XV1840-2AH10**
4-wire, shielded TP installation cable for connection to IE FC RJ45 outlet plug / IE FC RJ45 plug; PROFINET-compliant; with UL approval; sold by the meter; max. delivery unit 1 000 m, minimum order quantity 20 m	
IE FC stripping tool	**6GK1901-1GA00**
Pre-adjusted stripping tool for fast stripping of Industrial Ethernet FC cables	

[1] Please note country approvals under: http://www.siemens.com/wireless-approvals

4

Overview

- Modules for serial communication connections, scaled according to interface types, protocols, and performance
- 4 versions with different physical transmission characteristics:
  - RS 232C, max. 19.2 kbps
  - RS 232C, max. 115.2 kbps
  - RS 422/RS 485, max. 19.2 kbps
  - RS 422/RS 485, max. 115.2 kbps
- Protocols supported
  - Freeport: User-parameterizable telegram format for universal communication
  - 3964(R) for improved transmission reliability
  - Modbus RTU Master
  - Modbus RTU Slave
  - USS, implemented through instructions

Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products. SIPLUS extreme specific information was added.

Technical specifications

Article number	**6AG1540-1AD00-7AA0**	**6AG1541-1AD00-7AB0**	**6AG1540-1AB00-7AA0**	**6AG1541-1AB00-7AB0**
Based on	**6ES7540-1AD00-0AA0**	**6ES7541-1AD00-0AB0**	**6ES7540-1AB00-0AA0**	**6ES7541-1AB00-0AB0**
	SIPLUS S7-1500 CM PtP RS232 BA	SIPLUS S7-1500 CM PtP RS232 HF	SIPLUS S7-1500 CM PtP RS 422/485 BA	SIPLUS S7-1500 CM PtP RS 422/485 HF
Ambient conditions				
Ambient temperature during operation				
• horizontal installation, min.	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C
• horizontal installation, max.	70 °C	70 °C	70 °C	70 °C
• vertical installation, min.	-40 °C; = Tmin; Startup @ -25 °C	-40 °C; = Tmin; Startup @ -25 °C	-40 °C; = Tmin; Startup @ -25 °C	-40 °C; = Tmin; Startup @ -25 °C
• vertical installation, max.	40 °C	40 °C	40 °C	40 °C
Altitude during operation relating to sea level				
• Installation altitude above sea level, max.	5 000 m	5 000 m	5 000 m	5 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)
Relative humidity				
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance				
Coolants and lubricants				
- Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air	Yes; Incl. diesel and oil droplets in the air	Yes; Incl. diesel and oil droplets in the air	Yes; Incl. diesel and oil droplets in the air

SIMATIC S7-1500 Advanced Controllers
I/O modules
SIPLUS communication

Technical specifications (continued)

Article number	6AG1540-1AD00-7AA0	6AG1541-1AD00-7AB0	6AG1540-1AB00-7AA0	6AG1541-1AB00-7AB0
Based on	6ES7540-1AD00-0AA0	6ES7541-1AD00-0AB0	6ES7540-1AB00-0AA0	6ES7541-1AB00-0AB0
	SIPLUS S7-1500 CM PtP RS232 BA	SIPLUS S7-1500 CM PtP RS232 HF	SIPLUS S7-1500 CM PtP RS 422/485 BA	SIPLUS S7-1500 CM PtP RS 422/485 HF
Use in stationary industrial systems				
- to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
- to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
- to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *	Yes; Class 3S4 incl. sand, dust, *	Yes; Class 3S4 incl. sand, dust, *	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea				
- to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
- to chemically active substances according to EN 60721-3-6	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
- to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *	Yes; Class 6S3 incl. sand, dust; *	Yes; Class 6S3 incl. sand, dust; *	Yes; Class 6S3 incl. sand, dust; *
Remark				
- Note regarding classification of environmental conditions acc. to EN 60721	* The supplied plug covers must remain in place over the unused interfaces during operation!	* The supplied plug covers must remain in place over the unused interfaces during operation!	* The supplied plug covers must remain in place over the unused interfaces during operation!	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating				
• Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high availability	Yes; Class 2 for high availability	Yes; Class 2 for high availability	Yes; Class 2 for high availability
• Protection against fouling acc. to EN 60664-3	Yes; Type 1 protection	Yes; Type 1 protection	Yes; Type 1 protection	Yes; Type 1 protection
• Military testing according to MIL-I-46058C, Amendment 7	Yes; Discoloration of coating possible during service life	Yes; Discoloration of coating possible during service life	Yes; Discoloration of coating possible during service life	Yes; Discoloration of coating possible during service life
• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A	Yes; Conformal coating, Class A	Yes; Conformal coating, Class A	Yes; Conformal coating, Class A	Yes; Conformal coating, Class A

Ordering data

	Article No.		Article No.
SIPLUS CM PtP RS 232 BA communication module (Extended temperature range and exposure to media) Basic communication module with 1 interface RS 232, Freeport, 3964(R) and USS protocols, 9-pin sub D connector, max. 19.2 kbps	6AG1540-1AD00-7AA0	**SIPLUS CM PtP RS 422/485 BA communication module** (Extended temperature range and exposure to media) Basic communication module with 1 interface RS 422/485, Freeport, 3964(R) and USS protocols, 15-pin sub D socket, max. 19.2 kbps	6AG1540-1AB00-7AA0
SIPLUS CM PtP RS 232 HF communication module (Extended temperature range and exposure to media) High Feature communication module with 1 interface RS 232, Freeport, 3964(R), USS and Modbus RTU protocols, 9-pin sub D connector, max. 115.2 kbps	6AG1541-1AD00-7AB0	**SIPLUS CM PtP RS 422/485 HF communication module** (Extended temperature range and exposure to media) High Feature communication module with 1 interface RS 422/485, Freeport, 3964(R), USS and Modbus RTU protocols, 15-pin sub D socket, max. 115.2 kbps	6AG1541-1AB00-7AB0
		Accessories	See SIMATIC S7-1500, CM PtP communication module, page 4/144

Overview

DP-M	DP-S	FMS	PG/OP	S7/S5	
●	●		●	●	

The CM 1542-5 communication module expands the SIMATIC S7-1500 controller to include a PROFIBUS connection for communication with lower-level PROFIBUS devices in bandwidths from 9.6 kbps to 12 Mbps. The module can also be used to implement separate PROFIBUS lines, in other words, to control a number of different field devices via a number of PROFIBUS segments. The CM 1542-5 handles all communication tasks, thus reducing the CPU load.

Apart from classic PROFIBUS communication, the CM 1542-5 is also suitable for S7 communication. This makes it possible to establish communication between the S7-1500 controller and other devices, for example those from the SIMATIC S7-300/400 range.

- PROFIBUS DP master or DP slave with electrical interface for connecting a SIMATIC S7-1500 to PROFIBUS at up to 12 Mbps (including 45.45 kbps)
- Communications services:
  - PROFIBUS DP
  - PG/OP communication
  - S7 communication
- Time synchronization
- Simple programming and configuration over PROFIBUS
- Cross-network PG communication using S7 routing
- Module replacement without a PG
- Data record routing (PROFIBUS DP)
- Adding or modifying distributed I/O during operation

Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products. SIPLUS extreme specific information was added.

Ordering data

	Article No.
SIPLUS CM 1542-5 communication module	
(Extended temperature range and medial exposure)	
Communication module for electrical connection of SIMATIC S7-1500 to PROFIBUS as a DP master or DP slave	**6AG1542-5DX00-7XE0**
Accessories	See SIMATIC S7-1500, CM 1542-5 communication module, page 4/148

4

SIMATIC S7-1500 Advanced Controllers
I/O modules
SIPLUS communication

SIPLUS NET CP 1543-1

■ Overview

ISO	TCP/UDP	PN	MRP	IT	IP-R	PG/OP	S7/S5
●	●			●	●	●	●

The SIMATIC CP 1543-1 communications processor securely connects the new SIMATIC S7-1500 controller to Industrial Ethernet networks. By combining a variety of security features such as an SPI (Stateful Packet Inspection) firewall, VPN and data encryption protocols such as FTPS and SNMPv3, the communications processor protects individual S7-1500 stations or even entire automation cells against unauthorized access.

The CP can also be used for linking the S7-1500 station into an IPv6-based network. All functions are configured by means of STEP 7 Professional V12 (TIA Portal) or higher.

The CP 1543-1 supports the following communications services:

- PG/OP communication
- S7 communication
- Open communication (SEND/RECEIVE, FETCH/WRITE)
- IT communication
  - FTP functions (File Transfer Protocol FTP/FTPS) for file management and access to data blocks in the CPU (client and server function)
  - Sending e-mails via SMTP or ESMTP with "SMTP-Auth" for authentication on an e-mail server (also with IPv6)
- Security functions
  - Stateful Packet Inspection (layers 3 and 4) firewall
  - Secure communication via VPN (IPsec)
  - Secure access to the Web server of the CPU via the HTTPS protocol
  - Secure file transfer using FTPS
  - Secure transfer of the time of day (NTP)
  - SNMPv3 for tap-proof transfer of network analysis information
- Integration of an S7-1500 into IPv6-based networks; An IPv6-compliant IP address can be used for the following communication services:
  - FETCH/WRITE access (CP as server)
  - FTP server mode
  - FTP client mode with addressing by program block
  - E-mail transfer with addressing by program block

Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products. SIPLUS extreme specific information was added.

■ Ordering data

	Article No.
SIPLUS NET CP 1543-1 communications processor (Extended temperature range and exposure to media) For connection of SIMATIC S7-1500 to Industrial Ethernet via TCP/IP, ISO and UDP and Security functions; 1 x RJ45 interface with 10/100/1000 Mbps; electronic manual on DVD	**6AG1543-1AX00-2XE0**
Accessories	See SIMATIC S7-1500, SIMATIC CP 1543-1 communications processor, page 4/154