



SIMATIC S7-1500, TM NPU, technology module for applications with artificial intelligence, 1x Ethernet, 1x USB, 1x SD

General information	
Product type designation	TM NPU
HW functional status	04
Firmware version	V2.0
• FW update possible	Yes
Product function	
• I&M data	Yes; I&M0 to I&M3
• Artificial intelligence/processing of neural networks	Yes
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	STEP 7 V17 or higher with HSP
• STEP 7 configurable/integrated from version	- / -
• PROFIBUS from GSD version/GSD revision	- / -
• PROFINET from GSD version/GSD revision	GSDML V2.35
Installation type/mounting	
Mounting position	Horizontal, vertical
Rail mounting	Yes
Control cabinet installation	Yes
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Short-circuit protection	Yes
Mains buffering	
• Mains/voltage failure stored energy time	5 ms
Input current	
Current consumption (rated value)	0.35 A; 24 V input voltage, USB load of 800 mA, 25 °C ambient temperature
Current consumption, max.	0.6 A
Inrush current, max.	3 A
I ² t	0.17 A ² ·s
Power	
Power consumption from the backplane bus	0.65 W
Power consumption from the backplane bus (balanced)	1.1 W
Power loss	
Power loss, typ.	4.6 W
Processor	
Processor type	Myriad X 2x LEON processor with 700 MHz
Address area	
Address space per module	
• Inputs	254 byte; +2 bytes QI and application-specific status bytes

• Outputs	254 byte; +2 application-specific control bytes
Interfaces	
Number of Ethernet interfaces	1
Number of USB interfaces	1
Ethernet interface	Yes
USB port	Yes
SD card slot	Yes
1. Interface	
Interface type	Ethernet
Isolated	Yes; 1500 V AC (type test)
supported image format	YUYV422, UYVY422
supported image resolution	1 280 x 1 024, 1 280 x 720, 640 x 480
Interface types	
• RJ 45 (Ethernet)	Yes
• Number of ports	1
• integrated switch	No
2. Interface	
Interface type	USB
Isolated	Yes; 500 V DC (type test)
supported image format	YUYV422
supported image resolution	1 280 x 720
Interface types	
• USB	Yes; only for commissioning and test purposes
• Number of ports	1
• Output current of the interface, max.	900 mA
Interface types	
RJ 45 (Ethernet)	
• 1000 Mbps	Yes
USB port	
• USB specification	USB 3.1
• Design of the USB ports	USB type A socket
Protocols	
Protocols (Ethernet)	
• GigE Vision	Yes; V2.1
Web server	
• supported	Yes; only for Debug purposes. Should be disabled during normal operation.
Interrupts/diagnostics/status information	
Status indicator	Yes
Alarms	No
Diagnostics function	Yes
Diagnostics indication LED	
• RUN LED	Yes
• ERROR LED	Yes
• MAINT LED	Yes
• LINK LED	Yes
• Monitoring of the supply voltage (PWR-LED)	Yes
Isolation	
Isolation tested with	1 500 V AC between Ethernet and functional ground
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	-25 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-25 °C
• vertical installation, max.	40 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	2 000 m
Decentralized operation	

to SIMATIC S7-300	Yes
to SIMATIC S7-400	Yes
to SIMATIC S7-1200	Yes
to SIMATIC S7-1500	Yes
to standard PROFIBUS master	No
to standard PROFINET controller	No

Dimensions

Width	35 mm
Height	147 mm
Depth	129 mm

Weights

Weight, approx.	400 g
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Classifications

	Version	Classification
eClass	14	27-24-22-05
eClass	12	27-24-22-05
eClass	9.1	27-24-22-05
eClass	9	27-24-22-05
eClass	8	27-24-22-05
eClass	7.1	27-24-22-05
eClass	6	27-24-22-05
ETIM	9	EC001422
ETIM	8	EC001422
ETIM	7	EC001422
IDEA	4	3567
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval



[Manufacturer Declaration](#)



[KC](#)



General Product Approval

For use in hazardous locations

[KC](#)



[FM](#)

[CCC-Ex](#)



For use in hazardous locations

Marine / Shipping

[Miscellaneous](#)



[NK / Nippon Kaiji Kyokai](#)

Marine / Shipping

Environment



[CCS \(China Classification Society\)](#)



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