SIEMENS

Data sheet 6ES7672-7AC00-0YA0

SIMATIC S7-1500, SOFTWARE CONTROLLER CPU 1507S
VERSION 1.8, SINGLE LICENSE F. 1 INSTALL, R-SW, SW AND
DOCU. ON DVD, LICENSE KEY ON USB STICK, RT-SW CLASS A,
6 LANGUAGES (GE,EN,FR,IT,SP,CN) EXECUTABLE UNDER
WINDOWS 7 REFERENCE-HW: SIMATIC IPC4X7D, IPC6X7D,
IPC8X7D

General information	
Product type designation	CPU 1507S
Software version	V1.8
Engineering with	
• STEP 7 TIA Portal configurable/integrated as of version	V13 SP1 Update 4

Memory	
SIMATIC memory card required	No; Use of the PC mass storage
Work memory	
• integrated (for program)	5 Mbyte
• integrated (for data)	20 Mbyte
• integrated (for CPU function library of CPU Runtime)	19 Mbyte
Load memory	
• integrated (on PC mass storage)	300 Mbyte
Backup	
• with UPS	Yes; all memory areas declared retentive
• with non-volatile memory	Yes

CPU processing times	
for bit operations, typ.	1 ns; on SIMATIC IPC427D, Intel Core i7 processor, 1.7 GHz
for word operations, typ.	2 ns; on SIMATIC IPC427D, Intel Core i7 processor, 1.7 GHz
for fixed point arithmetic, typ.	2 ns; on SIMATIC IPC427D, Intel Core i7 processor, 1.7 GHz
for floating point arithmetic, typ.	2 ns; on SIMATIC IPC427D, Intel Core i7 processor, 1.7 GHz

CPU-blocks	
Number of blocks (total)	6 000
DB	
• Number, max.	6 000; Number range: 1 to 65535
• Size, max.	16 Mbyte
FB	
• Number, max.	5 998; Number range: 1 to 65535
• Size, max.	512 kbyte
FC	
• Number, max.	5 999; Number range: 1 to 65535
• Size, max.	512 kbyte
OB	
• Size, max.	1 048 kbyte
• Number of free cycle OBs	100
• Number of time alarm OBs	20
• Number of delay alarm OBs	20
• Number of cyclic interrupt OBs	20
• Number of process alarm OBs	50
• Number of DPV1 alarm OBs	3
• Number of isochronous mode OBs	0
• Number of technology synchronous alarm OBs	2
• Number of startup OBs	100
• Number of asynchronous error OBs	4
• Number of synchronous error OBs	2
• Number of diagnostic alarm OBs	1
Nesting depth	
• per priority class	24

Counters, timers and their retentivity	
S7 counter	
• Number	2 048
Retentivity	
— adjustable	Yes
IEC counter	
• Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes

S7 times	
• Number	2 048
Retentivity	
— adjustable	Yes
IEC timer	
• Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes

Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	135 kbyte; On SIMATIC IPC427D and IPC477D; 35 KB on SIMATIC IPC627D and IPC677D
Flag	
• Number, max.	16 kbyte
• Number of clock memories	8; 8 clock memory bits, grouped into one clock memory byte
Data blocks	
• Retentivity adjustable	Yes
• Retentivity preset	No
Local data	
• per priority class, max.	64 kbyte; max. 16 KB per block

Address area	
Number of IO modules	8 192
I/O address area	
• Inputs	32 kbyte
• Outputs	32 kbyte
of which per assigned PC interface	
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
Subprocess images	
• Number of subprocess images, max.	32

Hardware configuration	
Number of distributed IO systems	20
Number of DP masters	
• via PC interfaces	1
Number of IO Controllers	
• via PC interfaces	1

Time of day	
Clock	
• Type	Software clock, synchronizable, no battery backup
• Deviation per day, max.	Depending on PC hardware
Clock synchronization	
• supported	Yes

• to DP, master	No
• on Ethernet via NTP	Yes
• on Windows clock, slave	Yes

Interfaces

Number of interfaces	3
Number of PROFINET interfaces	2; In case of I-Device configuration, only one PROFINET interface is supported
Number of PROFIBUS interfaces	1

1. Interface

Interface type	Onboard PROFINET / IE interface X2 of the SIMATIC IPC, Intel Springville i210T

Interface types

• Number of ports	1
• RJ 45 (Ethernet)	Yes
— Transmission rate, max.	100 Mbit/s
— Industrial Ethernet status LED	Yes

Functionality

• Number of connections via this interface	128
• PROFINET IO Controller	Yes
• PROFINET IO Device	Yes
• SIMATIC communication	Yes
• Open IE communication	Yes
• Web server	Yes

PROFINET IO Controller

Services

— Isochronous mode	No
— IRT	No
— MRP	No
— Prioritized startup	Yes; Max. 32 PROFINET devices; if you want to use the "Prioritized startup" functionality in STEP 7 for the PROFINET interface of the CPU, the CPU and the device must be separated by means of a switch (e.g. SCALANCE X205)
— Number of connectable IO Devices, max.	128
— Number of connectable IO Devices for RT, max.	128
— of which in line, max.	128
— Number of IO Devices that can be simultaneously activated/deactivated, max.	8
— IO Devices changing during operation (partner ports), supported	Yes
— Number of IO Devices per tool, max.	8

— Updating times	The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data
Update time for RT	
— for send cycle of 1 ms	1 ms to 512 ms
PROFINET IO Device	
Services	
— Isochronous mode	No
— IRT	No
— MRP	No
— Prioritized startup	Yes; If you want to use the "Prioritized startup" functionality in STEP 7 for the PROFINET interface of the CPU, the CPU and the device must be separated by means of a switch (e.g. SCALANCE X205)
— Shared device	Yes
— Number of IO Controllers with shared device, max.	2
2. Interface	
Interface type	PROFIBUS with CP 5622, CP 5622 onboard
Interface types	
• RS 485	Yes
Functionality	
• Number of connections via this interface	44
• PROFIBUS DP master	Yes
• PROFIBUS DP slave	No
• SIMATIC communication	Yes; no PG/STEP 7 connection possible
DP master	
• Number of DP slaves, max.	64
Services	
— Equidistance	No
— Isochronous mode	No
3. Interface	
Interface type	PROFIBUS with CP 5623
Functionality	
• Number of connections via this interface	44
• SIMATIC communication	Yes; no PG/STEP 7 connection possible
DP master	
• Number of DP slaves, max.	125
Services	
— Equidistance	No
— Isochronous mode	No
Protocols	

Number of connections	
• Number of connections, max.	128
• Number of connections reserved for ES/HMI/web	10

SIMATIC communication	
• PG/OP communication	Yes
• S7 routing	Yes
• S7 communication, as server	Yes
• S7 communication, as client	Yes
• User data per job, max.	64 kbyte; BSEND/BRCV: 64 KB; PUT/GET: 960 bytes

Open IE communication	
• TCP/IP	Yes
— Data length, max.	64 kbyte
• ISO-on-TCP (RFC1006)	Yes
— Data length, max.	64 kbyte
• UDP	Yes
— Data length, max.	1 472 byte
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes

Web server	
• HTTP	Yes; Standard and user-defined pages
• HTTPS	Yes; Standard and user-defined pages

S7 message functions	
Number of login stations for message functions, max.	32
Program alarms	Yes
Number of configurable program alarms	10 000
Number of simultaneously active program alarms	1 000

Test commissioning functions	
Status block	Yes; up to 8 simultaneously
Single step	Yes

Status/control	
• Status/control variable	Yes
• Variables	Inputs, outputs, memory bits, DB, times, counters
• Number of variables, max.	
— of which status variables, max.	200
— of which control variables, max.	200

Forcing	
• Forcing	Yes
• Forcing, variables	Inputs, outputs

• Number of variables, max.	200
Diagnostic buffer	
• present	Yes
• Number of entries, max.	1 000
— of which powerfail-proof	300
Traces	
• Number of configurable Traces	4
• Memory size per trace, max.	512 kbyte

Interrupts/diagnostics/status information

Diagnostics indication LED	
• RUN/STOP LED	Yes; only for IPC4x7D, no LED support for IPC6x7D and IPC8x7D
• ERROR LED	Yes; only for IPC4x7D, no LED support for IPC6x7D and IPC8x7D
• MAINT LED	Yes; only for IPC4x7D, no LED support for IPC6x7D and IPC8x7D

Supported technology objects

Motion Control	Yes
• Speed-controlled axis	
— Number of speed-controlled axes, max.	60; configurable, up to 60 axes in total (speed-controlled, positioning axis, external encoders) are supported
• Positioning axis	
— Number of positioning axes, max.	60; configurable, up to 60 axes in total (speed-controlled, positioning axis, external encoders) are supported
• Synchronized axes (relative gear synchronization)	
— Number of axes, max.	30; Max. number of synchronous axes (requirement: there must be no other motion technology objects created)
• External encoders	
— Number of external encoders, max.	60; configurable, up to 60 axes in total (speed-controlled, positioning axis, external encoders) are supported
Controller	
• PID_Compact	Yes; Universal PID controller with integrated optimization
• PID_3Step	Yes; PID controller with integrated optimization for valves
Counting and measuring	
• High-speed counter	Yes

Hardware requirement

Hardware required	SIMATIC IPC4x7D, IPC6x7D, IPC8x7D
Processor	
• Single-core processor	No
• Single-core processor with hyper-threading	No
• Multi-core processor	Yes
• Multi-core processor with hyper-threading	Yes
• occupied cores	1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S

Lifetime of module	
• Work memory, min.	4 Gbyte
• Hard disk memory required for installation	100 Mbyte
• Hard disk memory required at runtime	400 Mbyte

Operating systems

pre-installed operating system	
• Windows XP	No
• Windows 7	Yes; Professional, Enterprise, Ultimate (32 bits and 64 bits)
• Windows Embedded Standard 7	Yes; With the delivery image of the SIMATIC PC
• Windows 8	No
• Windows Embedded Standard 8	No

Configuration

Programming	
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	No
— GRAPH	Yes

Know-how protection	
• User program protection/password protection	Yes
• Copy protection	Yes
• Block protection	Yes

Access protection	
• Protection level: Write protection	Yes
• Protection level: Read/write protection	Yes
• Protection level: Complete protection	Yes

Cycle time monitoring	
• lower limit	adjustable minimum cycle time
• upper limit	adjustable maximum cycle time

Open Development interfaces	
• Size of ODK SO file, max.	1 Mbyte

Dimensions

Width	18.2 cm; Packaging
Height	26.5 cm
Depth	3 cm

Weights

Weight, approx.	200 g

10/31/2017