APPENDIX C

MODBUS TCP Registers

This appendix lists the CGS-2520-specific read-only registers. MODBUS clients use them to communicate with a MODBUS server (the switch). There are no writable registers. For information about MODBUS TCP, see Chapter 5, "Configuring MODBUS TCP."

System Information Registers

Memory address spaces 0x0800 through 0x0FFF are system information registers. Clients use the 0x03 Read Multiple Registers MODBUS function code.

Table C-1 System Information Registers

Address	Number of Registers	Description	R/W	Format	Example	CLI[1] Command
0800	64	Product ID	R	Text	"CGS-2520-24TC	**show version** user EXEC command
0840	64	Software image name	R	Text	"CGS2520-IPSERVICES-M"	
0880	64	Software image version	R	Text	"12.2(0.0.62)EX"	
08C0	64	Host name	R	Text	"CGS2520"	**show running-config** privileged EXEC command
0900	64	Alarm 1 description	R	Text	"Door 1"	**show env alarm-contact** user EXEC command
0940	64	Alarm 2 description	R	Text	"Door 2"	
0980	64	Alarm 3 description	R	Text	"Door 3"	
09C0	64	Alarm 4 description	R	Text	"Door 4"	
0A00	1	Alarm 1 status	R	Uint16	0x1	
0A01	1	Alarm 2 status	R	Uint16	0x0	
0A02	1	Alarm 3 status	R	Uint16	0x0	
0A03	1	Alarm 4 status	R	Uint16	0x0	

Table C-1 System Information Registers (continued)

Address	Number of Registers	Description	R/W	Format	Example	CLI[1] Command
0A04	1	Total number of 10/100 Ethernet ports	R	Uint16	0x18	**show version** user EXEC command
0A05	1	Total number of Gigabit Ethernet ports	R	Uint16	0x2	
0A06	1	Total number of alarms	R	Uint16	0x4	**show env alarm-contact** user EXEC command
0A07	1	Total number of power supplies	R	Uint16	0x2	**show env power** user EXEC command
0A08	1	PS1 status	R	Uint16	0x0	
0A09	1	PS2 status	R	Uint16	0x2	
0A0A	1	System temperature (in Celsius)	R	Uint16	38	**show env temperature** user EXEC command

1. Command-line interface

Table C-2 System Information: Interpretation of Uint16 Values

Address	Description	Value
0A00	Alarm 1 status	0x0: Alarm not asserted 0x1: Alarm asserted
0A01	Alarm 2 status	
0A02	Alarm 3 status	
0A03	Alarm 4 status	
0A08	Power supply 1 status	0x0: PS is functional 0x1: PS is not functional 0x2: PS is not present 0x3: PS is not recognized
0A09	Power supply 2 status	

Port Information Registers

Port Information Registers with 64-Bit Interface Counters

Memory address spaces 0x1000 through 0x2FFF are interface registers. Clients use the 0x03 Read Multiple Registers MODBUS function code to access the registers. See the "Port Information for 64-Bit Counters" section on page C-8 for an explanation of the values for the Uint16 and local port number (LPN)-to-interface mapping.

Table C-3 Port Information Registers, 64-Bit Interface Counters

Address	Number of Registers	Description	R/W	Format
1000	64	Port 1 name	R	Text
1040	64	Port 2 name	R	Text
1080	64	Port 3 name	R	Text
10C0	64	Port 4 name	R	Text
1100	64	Port 5 name	R	Text
1140	64	Port 6 name	R	Text
1180	64	Port 7 name	R	Text
11C0	64	Port 8 name	R	Text
1200	64	Port 9 name	R	Text
1240	64	Port 10 name	R	Text
1280	64	Port 11 name	R	Text
12C0	64	Port 12 name	R	Text
1300	64	Port 13 name	R	Text
1340	64	Port 14 name	R	Text
1380	64	Port 15 name	R	Text
13C0	64	Port 16 name	R	Text
1400	64	Port 17 name	R	Text
1440	64	Port 18 name	R	Text
1480	64	Port 19 name	R	Text
14C0	64	Port 20 name	R	Text
1500	64	Port 21 name	R	Text
1540	64	Port 22 name	R	Text
1580	64	Port 23 name	R	Text
15C0	64	Port 24 name	R	Text
1600	64	Port 25 name	R	Text
1640	64	Port 26 state	R	Text
1680	1	Port 1 state	R	Uint16
1681	1	Port 2 state	R	Uint16
1682	1	Port 3 state	R	Uint16
1683	1	Port 4 state	R	Uint16
1684	1	Port 5 state	R	Uint16
1685	1	Port 6 state	R	Uint16
1686	1	Port 7 state	R	Uint16

Table C-3 Port Information Registers, 64-Bit Interface Counters (continued)

Address	Number of Registers	Description	R/W	Format
1687	1	Port 8 state	R	Uint16
1688	1	Port 9 state	R	Uint16
1689	1	Port 10 state	R	Uint16
168A	1	Port 11 state	R	Uint16
168B	1	Port 12 state	R	Uint16
168C	1	Port 13 state	R	Uint16
168D	1	Port 14 state	R	Uint16
168E	1	Port 15 state	R	Uint16
168F	1	Port 16 state	R	Uint16
1690	1	Port 17 state	R	Uint16
1691	1	Port 18 state	R	Uint16
1692	1	Port 19 state	R	Uint16
1693	1	Port 20 state	R	Uint16
1694	1	Port 21 state	R	Uint16
1695	1	Port 22 state	R	Uint16
1696	1	Port 23 state	R	Uint16
1697	1	Port 24 state	R	Uint16
1698	1	Port 25 state	R	Uint16
1699	1	Port 26 state	R	Uint16
169A	4	Port 1 statistics, number of packets received	R	Uint64
169E	4	Port 2 statistics, number of packets received	R	Uint64
16A2	4	Port 3 statistics, number of packets received	R	Uint64
16A6	4	Port 4 statistics, number of packets received	R	Uint64
16AA	4	Port 5 statistics, number of packets received	R	Uint64
16AE	4	Port 6 statistics, number of packets received	R	Uint64
16B2	4	Port 7 statistics, number of packets received	R	Uint64
16B6	4	Port 8 statistics, number of packets received	R	Uint64
16BA	4	Port 9 statistics, number of packets received	R	Uint64
16BE	4	Port 10 statistics, number of packets received	R	Uint64
16C2	4	Port 11 statistics, number of packets received	R	Uint64
16C6	4	Port 12 statistics, number of packets received	R	Uint64
16CA	4	Port 13 statistics, number of packets received	R	Uint64
16CE	4	Port 14 statistics, number of packets received	R	Uint64
16D2	4	Port 15 statistics, number of packets received	R	Uint64

Table C-3 Port Information Registers, 64-Bit Interface Counters (continued)

Address	Number of Registers	Description	R/W	Format
16D6	4	Port 16 statistics, number of packets received	R	Uint64
16DA	4	Port 17 statistics, number of packets received	R	Uint64
16DE	4	Port 18 statistics, number of packets received	R	Uint64
16E2	4	Port 19 statistics, number of packets received	R	Uint64
16E6	4	Port 20 statistics, number of packets received	R	Uint64
16EA	4	Port 21 statistics, number of packets received	R	Uint64
16EE	4	Port 22 statistics, number of packets received	R	Uint64
16F2	4	Port 23 statistics, number of packets received	R	Uint64
16F6	4	Port 24 statistics, number of packets received	R	Uint64
16FA	4	Port 25 statistics, number of packets received	R	Uint64
16FE	4	Port 26 statistics, number of packets received	R	Uint64
1702	4	Port 1 statistics, number of packets sent	R	Uint64
1706	4	Port 2 statistics, number of packets sent	R	Uint64
170A	4	Port 3 statistics, number of packets sent	R	Uint64
170E	4	Port 4 statistics, number of packets sent	R	Uint64
1712	4	Port 5 statistics, number of packets sent	R	Uint64
1716	4	Port 6 statistics, number of packets sent	R	Uint64
171A	4	Port 7 statistics, number of packets sent	R	Uint64
171E	4	Port 8 statistics, number of packets sent	R	Uint64
1722	4	Port 9 statistics, number of packets sent	R	Uint64
1726	4	Port 10 statistics, number of packets sent	R	Uint64
172A	4	Port 11 statistics, number of packets sent	R	Uint64
172E	4	Port 12 statistics, number of packets sent	R	Uint64
1732	4	Port 13 statistics, number of packets sent	R	Uint64
1736	4	Port 14 statistics, number of packets sent	R	Uint64
173A	4	Port 15 statistics, number of packets sent	R	Uint64
173E	4	Port 16 statistics, number of packets sent	R	Uint64
1742	4	Port 17 statistics, number of packets sent	R	Uint64
1746	4	Port 18 statistics, number of packets sent	R	Uint64
174A	4	Port 19 statistics, number of packets sent	R	Uint64
174E	4	Port 20 statistics, number of packets sent	R	Uint64
1752	4	Port 21 statistics, number of packets sent	R	Uint64
1756	4	Port 22 statistics, number of packets sent	R	Uint64
175A	4	Port 23 statistics, number of packets sent	R	Uint64

Table C-3 Port Information Registers, 64-Bit Interface Counters (continued)

Address	Number of Registers	Description	R/W	Format
175E	4	Port 24 statistics, number of packets sent	R	Uint64
1762	4	Port 25 statistics, number of packets sent	R	Uint64
1766	4	Port 26 statistics, number of packets sent	R	Uint64
176A	4	Port 1 statistics, number of bytes received	R	Uint64
176E	4	Port 2 statistics, number of bytes received	R	Uint64
1772	4	Port 3 statistics, number of bytes received	R	Uint64
1776	4	Port 4 statistics, number of bytes received	R	Uint64
177A	4	Port 5 statistics, number of bytes received	R	Uint64
177E	4	Port 6 statistics, number of bytes received	R	Uint64
1782	4	Port 7 statistics, number of bytes received	R	Uint64
1786	4	Port 8 statistics, number of bytes received	R	Uint64
178A	4	Port 9 statistics, number of bytes received	R	Uint64
178E	4	Port 10 statistics, number of bytes received	R	Uint64
1792	4	Port 11 statistics, number of bytes received	R	Uint64
1796	4	Port 12 statistics, number of bytes received	R	Uint64
179A	4	Port 13 statistics, number of bytes received	R	Uint64
179E	4	Port 14 statistics, number of bytes received	R	Uint64
17A2	4	Port 15 statistics, number of bytes received	R	Uint64
17A6	4	Port 16 statistics, number of bytes received	R	Uint64
17AA	4	Port 17 statistics, number of bytes received	R	Uint64
17AE	4	Port 18 statistics, number of bytes received	R	Uint64
17B2	4	Port 19 statistics, number of bytes received	R	Uint64
17B6	4	Port 20 statistics, number of bytes received	R	Uint64
17BA	4	Port 21 statistics, number of bytes received	R	Uint64
17BE	4	Port 22 statistics, number of bytes received	R	Uint64
17C2	4	Port 23 statistics, number of bytes received	R	Uint64
17C6	4	Port 24 statistics, number of bytes received	R	Uint64
17CA	4	Port 25 statistics, number of bytes received	R	Uint64
17CE	4	Port 26 statistics, number of bytes received	R	Uint64
17D2	4	Port 1 statistics, number of bytes sent	R	Uint64
17D6	4	Port 2 statistics, number of bytes sent	R	Uint64
17DA	4	Port 3 statistics, number of bytes sent	R	Uint64
17DE	4	Port 4 statistics, number of bytes sent	R	Uint64
17E2	4	Port 5 statistics, number of bytes sent	R	Uint64

Table C-3 Port Information Registers, 64-Bit Interface Counters (continued)

Address	Number of Registers	Description	R/W	Format
17E6	4	Port 6 statistics, number of bytes sent	R	Uint64
17EA	4	Port 7 statistics, number of bytes sent	R	Uint64
17EE	4	Port 8 statistics, number of bytes sent	R	Uint64
17F2	4	Port 9 statistics, number of bytes sent	R	Uint64
17F6	4	Port 10 statistics, number of bytes sent	R	Uint64
17FA	4	Port 11 statistics, number of bytes sent	R	Uint64
17FE	4	Port 12 statistics, number of bytes sent	R	Uint64
1802	4	Port 13 statistics, number of bytes sent	R	Uint64
1806	4	Port 14 statistics, number of bytes sent	R	Uint64
180A	4	Port 15 statistics, number of bytes sent	R	Uint64
180E	4	Port 16 statistics, number of bytes sent	R	Uint64
1812	4	Port 17 statistics, number of bytes sent	R	Uint64
1816	4	Port 18 statistics, number of bytes sent	R	Uint64
181A	4	Port 19 statistics, number of bytes sent	R	Uint64
181E	4	Port 20 statistics, number of bytes sent	R	Uint64
1822	4	Port 21 statistics, number of bytes sent	R	Uint64
1826	4	Port 22 statistics, number of bytes sent	R	Uint64
182A	4	Port 23 statistics, number of bytes sent	R	Uint64
182E	4	Port 24 statistics, number of bytes sent	R	Uint64
1832	4	Port 25 statistics, number of bytes sent	R	Uint64
1836	4	Port 26 statistics, number of bytes sent	R	Uint64

Port Information for 64-Bit Counters

Table C-4 Port Information: Interpretation of Uint16 Values

Address	Description	Value
0x1680 to 0x1699	Port 1 state to Port 26 state	The upper byte represents the interface state: • 0x0: Interface is down • 0x1: Interface is going down • 0x2: Interface is in the initializing state • 0x3: Interface is coming up • 0x4: Interface is up and running • 0x5: Interface is reset by the user • 0x6: Interface is shut down by the user • 0x7: Interface is being deleted The lower byte represents the line protocol state: • 0x1: Line protocol state is up • 0x0: Line protocol state is down

Table C-5 Interface-to-LPN Mapping

Interface	LPN
Fast Ethernet 0/1	1
Fast Ethernet 0/2	2
Fast Ethernet 0/3	3
Fast Ethernet 0/4	4
Fast Ethernet 0/5	5
Fast Ethernet 0/6	6
Fast Ethernet 0/7	7
Fast Ethernet 0/8	8
Fast Ethernet 0/9	9
Fast Ethernet 0/10	10
Fast Ethernet 0/11	11
Fast Ethernet 0/12	12
Fast Ethernet 0/13	13
Fast Ethernet 0/14	14
Fast Ethernet 0/15	15
Fast Ethernet 0/16	16
Fast Ethernet 0/17	17
Fast Ethernet 0/18	18

Table C-5 Interface-to-LPN Mapping (continued)

Interface	LPN
Fast Ethernet 0/19	19
Fast Ethernet 0/20	20
Fast Ethernet 0/21	21
Fast Ethernet 0/22	22
Fast Ethernet 0/23	23
Fast Ethernet 0/24	24
Gigabit Ethernet 0/1	25
Gigabit Ethernet 0/2	26

Port Information Registers with 32-Bit Interface Counters

The counter registers for the 32-bit interface counters are mapped to the lower 32-bits of the 64-bit interface counters. See the "Port Information for 64-Bit Counters" section on page C-8 for an explanation of the values of the local port number (LPN)-to-interface mapping.

Table C-6 Port Information Registers, 32-Bit Interface Counters

Address	Number of Registers	Description	R/W	Format
183A	2	Port 1 statistics, number of packets received	R	Uint32
183C	2	Port 2 statistics, number of packets received	R	Uint32
183E	2	Port 3 statistics, number of packets received	R	Uint32
1840	2	Port 4 statistics, number of packets received	R	Uint32
1842	2	Port 5 statistics, number of packets received	R	Uint32
1844	2	Port 6 statistics, number of packets received	R	Uint32
1846	2	Port 7 statistics, number of packets received	R	Uint32
1848	2	Port 8 statistics, number of packets received	R	Uint32
184A	2	Port 9 statistics, number of packets received	R	Uint32
184C	2	Port 10 statistics, number of packets received	R	Uint32
184E	2	Port 11 statistics, number of packets received	R	Uint32
1850	2	Port 12 statistics, number of packets received	R	Uint32
1852	2	Port 13 statistics, number of packets received	R	Uint32
1854	2	Port 14 statistics, number of packets received	R	Uint32
1856	2	Port 15 statistics, number of packets received	R	Uint32
1858	2	Port 16 statistics, number of packets received	R	Uint32
185A	2	Port 17 statistics, number of packets received	R	Uint32
185C	2	Port 18 statistics, number of packets received	R	Uint32
185E	2	Port 19 statistics, number of packets received	R	Uint32

Table C-6 Port Information Registers, 32-Bit Interface Counters (continued)

Address	Number of Registers	Description	R/W	Format
1860	2	Port 20 statistics, number of packets received	R	Uint32
1862	2	Port 21 statistics, number of packets received	R	Uint32
1864	2	Port 22 statistics, number of packets received	R	Uint32
1866	2	Port 23 statistics, number of packets received	R	Uint32
1868	2	Port 24 statistics, number of packets received	R	Uint32
186A	2	Port 25 statistics, number of packets received	R	Uint32
186C	2	Port 26 statistics, number of packets received	R	Uint32
186E	2	Port 1 statistics, number of packets sent	R	Uint32
1870	2	Port 2 statistics, number of packets sent	R	Uint32
1872	2	Port 3 statistics, number of packets sent	R	Uint32
1874	2	Port 4 statistics, number of packets sent	R	Uint32
1876	2	Port 5 statistics, number of packets sent	R	Uint32
1878	2	Port 6 statistics, number of packets sent	R	Uint32
187A	2	Port 7 statistics, number of packets sent	R	Uint32
187C	2	Port 8 statistics, number of packets sent	R	Uint32
187E	2	Port 9 statistics, number of packets sent	R	Uint32
1880	2	Port 10 statistics, number of packets sent	R	Uint32
1882	2	Port 11 statistics, number of packets sent	R	Uint32
1884	2	Port 12 statistics, number of packets sent	R	Uint32
1886	2	Port 13 statistics, number of packets sent	R	Uint32
1888	2	Port 14 statistics, number of packets sent	R	Uint32
188A	2	Port 15 statistics, number of packets sent	R	Uint32
188C	2	Port 16 statistics, number of packets sent	R	Uint32
188E	2	Port 17 statistics, number of packets sent	R	Uint32
1890	2	Port 18 statistics, number of packets sent	R	Uint32
1892	2	Port 19 statistics, number of packets sent	R	Uint32
1894	2	Port 20 statistics, number of packets sent	R	Uint32
1896	2	Port 21 statistics, number of packets sent	R	Uint32
1898	2	Port 22 statistics, number of packets sent	R	Uint32
189A	2	Port 23 statistics, number of packets sent	R	Uint32
189C	2	Port 24 statistics, number of packets sent	R	Uint32
189E	2	Port 25 statistics, number of packets sent	R	Uint32
18A0	2	Port 26 statistics, number of packets sent	R	Uint32
18A2	2	Port 1 statistics, number of bytes received	R	Uint32
18A4	2	Port 2 statistics, number of bytes received	R	Uint32
18A6	2	Port 3 statistics, number of bytes received	R	Uint32

Table C-6 Port Information Registers, 32-Bit Interface Counters (continued)

Address	Number of Registers	Description	R/W	Format
18A8	2	Port 4 statistics, number of bytes received	R	Uint32
18AA	2	Port 5 statistics, number of bytes received	R	Uint32
18AC	2	Port 6 statistics, number of bytes received	R	Uint32
18AE	2	Port 7 statistics, number of bytes received	R	Uint32
18B0	2	Port 8 statistics, number of bytes received	R	Uint32
18B2	2	Port 9 statistics, number of bytes received	R	Uint32
18B4	2	Port 10 statistics, number of bytes received	R	Uint32
18B6	2	Port 11 statistics, number of bytes received	R	Uint32
18B8	2	Port 12 statistics, number of bytes received	R	Uint32
18BA	2	Port 13 statistics, number of bytes received	R	Uint32
18BC	2	Port 14 statistics, number of bytes received	R	Uint32
18BE	2	Port 15 statistics, number of bytes received	R	Uint32
18C0	2	Port 16 statistics, number of bytes received	R	Uint32
18C2	2	Port 17 statistics, number of bytes received	R	Uint32
18C4	2	Port 18 statistics, number of bytes received	R	Uint32
18C6	2	Port 19 statistics, number of bytes received	R	Uint32
18C8	2	Port 20 statistics, number of bytes received	R	Uint32
18CA	2	Port 21 statistics, number of bytes received	R	Uint32
18CC	2	Port 22 statistics, number of bytes received	R	Uint32
18CE	2	Port 23 statistics, number of bytes received	R	Uint32
18D0	2	Port 24 statistics, number of bytes received	R	Uint32
18D2	2	Port 25 statistics, number of bytes received	R	Uint32
18D4	2	Port 26 statistics, number of bytes received	R	Uint32
18D6	2	Port 1 statistics, number of bytes sent	R	Uint32
18D8	2	Port 2 statistics, number of bytes sent	R	Uint32
18DA	2	Port 3 statistics, number of bytes sent	R	Uint32
18DC	2	Port 4 statistics, number of bytes sent	R	Uint32
18DE	2	Port 5 statistics, number of bytes sent	R	Uint32
18E0	2	Port 6 statistics, number of bytes sent	R	Uint32
18E2	2	Port 7 statistics, number of bytes sent	R	Uint32
18E4	2	Port 8 statistics, number of bytes sent	R	Uint32
18E6	2	Port 9 statistics, number of bytes sent	R	Uint32
18E8	2	Port 10 statistics, number of bytes sent	R	Uint32
18EA	2	Port 11 statistics, number of bytes sent	R	Uint32
18EC	2	Port 12 statistics, number of bytes sent	R	Uint32
18EE	2	Port 13 statistics, number of bytes sent	R	Uint32

Table C-6 Port Information Registers, 32-Bit Interface Counters (continued)

Address	Number of Registers	Description	R/W	Format
18F0	2	Port 14 statistics, number of bytes sent	R	Uint32
18F2	2	Port 15 statistics, number of bytes sent	R	Uint32
18F4	2	Port 16 statistics, number of bytes sent	R	Uint32
18F6	2	Port 17 statistics, number of bytes sent	R	Uint32
18F8	2	Port 18 statistics, number of bytes sent	R	Uint32
18FA	2	Port 19 statistics, number of bytes sent	R	Uint32
18FC	2	Port 20 statistics, number of bytes sent	R	Uint32
18FE	2	Port 21 statistics, number of bytes sent	R	Uint32
1900	2	Port 22 statistics, number of bytes sent	R	Uint32
1902	2	Port 23 statistics, number of bytes sent	R	Uint32
1904	2	Port 24 statistics, number of bytes sent	R	Uint32
1906	2	Port 25 statistics, number of bytes sent	R	Uint32
1908	2	Port 26 statistics, number of bytes sent	R	Uint32