Conext™ Gateway

Modbus Interface Specification (503)
Conext™ SW Inverter/Chargers

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Feb 13, 2020

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Revision History

Rev	Date	Description of Change
A	Feb 13, 2020	v1.06 Firmware Release

Document Applicability

This Modbus map applies to the following products:

Product ID	Product Description
865-2524	CSW2524-120/240
865-2524-61	CSW2524-230
865-4024	CSW4024-120/240
865-4024-21	CSW4024-120/240
865-4024-55	CSW4024-230
865-4024-61	CSW4024-230
865-4048	CSW4048-120/240
865-4048-21	CSW4048-120/240
865-4048-55	CSW4048-230
865-4048-61	CSW4048-230

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⚠WARNING

UNINTENDED OPERATION

The use of this product with Modbus communications requires expertise in the design, operation, and programming of the device. Only qualified personnel should program, install, alter, and commission this product. Unless specified, information on safety, specifications, installation and operation is as shown in the primary documentation received with the product. Qualified personnel must be familiar with that information before proceeding. When writing values to the device, you must ensure other persons are not working with the device.

Failure to follow these instructions can result in death or serious injury, and/or equipment damage.

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⚠WARNING

LOSS OF CONTROL

Do not assign the same address to two Modbus devices. The entire serial bus may behave unexpectedly if the master device cannot communicate with all the slave devices on the bus.

Failure to follow these instructions can result in death or serious injury, and/or equipment damage.

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Overview

This document describes the structure of the Modbus register address map, which is used to configure, control, and monitor the device. Use this document in conjunction with the device Owner's Guide. The information in this document is intended for use only by qualified personnel who have a detailed technical understanding of the Modbus protocol. The Modbus map is divided into rows of Modbus registers. Each row indicates the Modbus register address, its name, data type, access type, units, scale, offset, and applicable notes as required. External Modbus master devices, such as the Schneider Electric M340 PLC, can read and write the Modbus registers to configure, control, or monitor the device remotely.

Writing Modbus Registers

Modbus does not provide an error response when data written to a Modbus register is out of range or invalid. To confirm that a Modbus register is correctly written, you should read it back and compare it with the expected value. For descriptions of settings and their valid values, refer to the product's Owner's Guide.

Supported Modbus Data Types

Data Type	Description
uint16	unsigned 16-bit integer [0,65535]
sint16	signed 16-bit integer [-32768,32767]
uint32	unsigned 32-bit integer [0,4294967295]
sint32	signed 32-bit integer [-2147483648,2147483647]
str<nn>	packed 8-bit character string, where <nn> is the length of characters in the string. Two characters are packed into each Modbus register. Example: str20 = 20-character string (packed into 10 Modbus registers) str16 = 16-character string (packed into 8 Modbus registers)

Modbus Device Addressing

The Modbus slave address registers are automatically assigned on a first come, first served basis. The first detected device is assigned to the start of the address range. Subsequently added devices are assigned the next available address in the range.

Once assigned, the modbus slave address is associated to the serial number of the device, ensuring the consistency of the modbus address for the lifetime of the installation.

If Modbus slave addresses need to be changed, the Conext Gateway can be reset to its factory defaults and devices added one by one to establish the desired modbus address mapping.

ModbusTCP port	503
Modbus Slave Address Range	[90 .. 109]

Modbus Register Addressing

The Register Number is the 1-based register identifier. Some 3rd party Modbus tools require 1-based register addressing.

The Register Address is the zero-based register address representing the register address as it is transmitted on-the-wire inside the Modbus data frame.

Modbus Error Response

The Modbus Server will respond with a 02 ILLEGAL DATA ADDRESS error if an attempt is made to read/write registers which don't exist or if a request is made to read only part of a 32-bit register. This error will also be thrown if a read/write address range contains a data point which does not exist, or if the read/write address range starts or ends halfway through a 32-bit word.

A blank row in the Modbus Register map indicates a boundary between sets of contiguous registers. Multi-register reads/writes across these boundaries will result in a 02 ILLEGAL DATA ADDRESS error

Modbus Cybersecurity Considerations

⚠WARNING
CYBERSECURITY RISK: POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY Always secure the Local Area Network on which the Conext Gateway is connected. Modbus TCP must NEVER be routed over a public network. Use cybersecurity best practices to help prevent unauthorized access. **Failure to follow these instructions can result in unintended access to sensitive or secure customer data, permanent loss of data, and equipment damage.**

Modbus TCP is a legacy protocol in widespread use within the Solar industry. It is appreciated by system operators due to its simplicity and ease of use in control and monitoring applications. However, Modbus TCP is an insecure protocol which does not provide any data security, encryption, or authentication.

Anyone with access to the local area network on which the Conext Gateway is connected can monitor and control the power conversion devices attached to the Conext Gateway.

Modbus TCP should only be used on trusted, private, and highly secure local area networks for local control and monitoring applications only. Failure to properly secure the Local Area Network on which the Conext Gateway is connected can allow a remote attacker to compromise your power system installation.

1   Register Map for Conext^{TM} SW Inverter/Chargers

Reg. No.	Reg. Addr.	Name	Type	R/W	Units	Scale	Offset	Notes
1	0x0000	Device Name	str16	r				
9	0x0008	reserved	uint16	r				
10	0x0009	reserved	uint16	r				
11	0x000A	FGA Number	str20	r				
21	0x0014	Unique ID Number	uint32	r				
31	0x001E	Firmware Version	uint32	r				
41	0x0028	Modbus Slave Address (Port 503)	uint16	rw		1.0	0.0	
42	0x0029	Device Number	uint16	r		1.0	0.0	
43	0x002A	System Instance	uint16	r		1.0	0.0	
44	0x002B	Hardware Serial Number	str20	r				
54	0x0035	Configuration Status	uint16	r		1.0	0.0	0=Refreshing 1=Done
55	0x0036	Configuration Refresh Counter	uint32	r		1.0	0.0	
65	0x0040	Device State	uint16	r		1.0	0.0	See section 2.1
66	0x0041	Device Present	uint16	r		1.0	0.0	0=Inactive (all data invalid) 1=Active (data valid)
67	0x0042	Inverter Enabled	uint16	r		1.0	0.0	0=Disabled 1=Enabled
68	0x0043	Charger Enabled	uint16	r		1.0	0.0	0=Disabled 1=Enabled
69	0x0044	Active Faults Flag	uint16	r		1.0	0.0	0=No Faults 1=Unit has active Faults
70	0x0045	Active Warnings Flag	uint16	r		1.0	0.0	0=No Warnings 1=Unit has active Warnings

Reg. No.	Reg. Addr.	Name	Type	R/W	Units	Scale	Offset	Notes
71	0x0046	Charge Mode Status	uint16	r		1.0	0.0	0=Stand alone 1=Primary 2=Secondary
72	0x0047	Fault Bitmap 0	uint16	r		1.0	0.0	See section 2.2
73	0x0048	Fault Bitmap 1	uint16	r		1.0	0.0	See section 2.3
74	0x0049	Fault Bitmap 2	uint16	r		1.0	0.0	See section 2.4
75	0x004A	Warning Bitmap 0	uint16	r		1.0	0.0	See section 2.5
76	0x004B	Inverter Status	uint16	r		1.0	0.0	See section 2.6
77	0x004C	Configuration Errors	uint32	r		1.0	0.0	
79	0x004E	Battery Voltage	uint32	r	V	0.001	0.0	
81	0x0050	Battery Current	sint32	r	A	0.001	0.0	
83	0x0052	Battery Power	sint32	r	W	1.0	0.0	
85	0x0054	Battery Temperature	uint16	r	degC	0.01	-273.0	
86	0x0055	Charger Status	uint16	r		1.0	0.0	See section 2.7
87	0x0056	Invert DC Current	uint32	r	A	0.001	0.0	
89	0x0058	Invert DC Power	uint32	r	W	1.0	0.0	
91	0x005A	Charge DC Current	uint32	r	A	0.001	0.0	
93	0x005C	Charge DC Power	uint32	r	W	1.0	0.0	
95	0x005E	Charge DC Power Percentage	uint16	r	%	1.0	0.0	
96	0x005F	AC1 Frequency	uint16	r	Hz	0.01	0.0	
97	0x0060	AC1 Voltage	uint32	r	V	0.001	0.0	
99	0x0062	AC1 Input Current	sint32	r	A	0.001	0.0	
101	0x0064	AC1 Input Power	sint32	r	W	1.0	0.0	
103	0x0066	AC1 Input Power - Apparent	sint32	r	VA	1.0	0.0	
105	0x0068	AC1 L1 Voltage	uint32	r	V	0.001	0.0	
107	0x006A	AC1 L2 Current	sint32	r	A	0.001	0.0	
109	0x006C	AC1 L2 Voltage	uint32	r	V	0.001	0.0	
111	0x006E	AC1 L1 Current	sint32	r	A	0.001	0.0	
113	0x0070	AC1 Voltage Qualified	uint16	r		1.0	0.0	See section 2.8
114	0x0071	AC1 Frequency Qualified	uint16	r		1.0	0.0	See section 2.9
115	0x0072	AC1 Qualified Duration	uint32	r	s	1.0	0.0	
121	0x0078	Load AC Voltage	uint32	r	V	0.001	0.0	

Reg. No.	Reg. Addr.	Name	Type	R/W	Units	Scale	Offset	Notes
123	0x007A	Load AC L1 Voltage	uint32	r	V	0.001	0.0	
125	0x007C	Load AC L2 Voltage	uint32	r	V	0.001	0.0	
127	0x007E	Load AC L1 Current	sint32	r	A	0.001	0.0	
129	0x0080	Load AC L2 Current	sint32	r	A	0.001	0.0	
131	0x0082	Load AC Current	sint32	r	A	0.001	0.0	
133	0x0084	Load AC Power	sint32	r	W	1.0	0.0	
135	0x0086	reserved	uint16	r				
136	0x0087	reserved	uint16	r				
137	0x0088	Load AC Power - Apparent	sint32	r	VA	1.0	0.0	
139	0x008A	Load AC Frequency	uint16	r	Hz	0.01	0.0	
145	0x0090	Energy From Battery This Hour	uint32	r	kWh	0.001	0.0	
147	0x0092	Battery Discharge Active This Hour	uint32	r	s	1.0	0.0	
149	0x0094	Energy From Battery Today	uint32	r	kWh	0.001	0.0	
151	0x0096	Battery Discharge Active Today	uint32	r	s	1.0	0.0	
153	0x0098	Energy From Battery This Week	uint32	r	kWh	0.001	0.0	
155	0x009A	Battery Discharge Active This Week	uint32	r	s	1.0	0.0	
157	0x009C	Energy From Battery This Month	uint32	r	kWh	0.001	0.0	
159	0x009E	Battery Discharge Active This Month	uint32	r	s	1.0	0.0	
161	0x00A0	Energy From Battery This Year	uint32	r	kWh	0.001	0.0	
163	0x00A2	Battery Discharge Active This Year	uint32	r	s	1.0	0.0	
165	0x00A4	Energy From Battery Lifetime	uint32	r	kWh	0.001	0.0	
167	0x00A6	Battery Discharge Active Lifetime	uint32	r	s	1.0	0.0	
169	0x00A8	Energy To Battery This Hour	uint32	r	kWh	0.001	0.0	
171	0x00AA	Battery Charge Active This Hour	uint32	r	s	1.0	0.0	
173	0x00AC	Energy To Battery Today	uint32	r	kWh	0.001	0.0	

Reg. No.	Reg. Addr.	Name	Type	R/W	Units	Scale	Offset	Notes
175	0x00AE	Battery Charge Active Today	uint32	r	s	1.0	0.0	
177	0x00B0	Energy To Battery This Week	uint32	r	kWh	0.001	0.0	
179	0x00B2	Battery Charge Active This Week	uint32	r	s	1.0	0.0	
181	0x00B4	Energy To Battery This Month	uint32	r	kWh	0.001	0.0	
183	0x00B6	Battery Charge Active This Month	uint32	r	s	1.0	0.0	
185	0x00B8	Energy To Battery This Year	uint32	r	kWh	0.001	0.0	
187	0x00BA	Battery Charge Active This Year	uint32	r	s	1.0	0.0	
189	0x00BC	Energy To Battery Lifetime	uint32	r	kWh	0.001	0.0	
191	0x00BE	Battery Charge Active Lifetime	uint32	r	s	1.0	0.0	
193	0x00C0	AC1 Input Energy This Hour	uint32	r	kWh	0.001	0.0	
195	0x00C2	AC1 Input Active This Hour	uint32	r	s	1.0	0.0	
197	0x00C4	AC1 Input Energy Today	uint32	r	kWh	0.001	0.0	
199	0x00C6	AC1 Input Active Today	uint32	r	s	1.0	0.0	
201	0x00C8	AC1 Input Energy This Week	uint32	r	kWh	0.001	0.0	
203	0x00CA	AC1 Input Active This Week	uint32	r	s	1.0	0.0	
205	0x00CC	AC1 Input Energy This Month	uint32	r	kWh	0.001	0.0	
207	0x00CE	AC1 Input Active This Month	uint32	r	s	1.0	0.0	
209	0x00D0	AC1 Input Energy This Year	uint32	r	kWh	0.001	0.0	
211	0x00D2	AC1 Input Active This Year	uint32	r	s	1.0	0.0	
213	0x00D4	AC1 Input Energy Lifetime	uint32	r	kWh	0.001	0.0	
215	0x00D6	AC1 Input Active Lifetime	uint32	r	s	1.0	0.0	

Reg. No.	Reg. Addr.	Name	Type	R/W	Units	Scale	Offset	Notes
217	0x00D8	Load Output Energy This Hour	uint32	r	kWh	0.001	0.0	
219	0x00DA	Load Output Active This Hour	uint32	r	s	1.0	0.0	
221	0x00DC	Load Output Energy Today	uint32	r	kWh	0.001	0.0	
223	0x00DE	Load Output Active Today	uint32	r	s	1.0	0.0	
225	0x00E0	Load Output Energy This Week	uint32	r	kWh	0.001	0.0	
227	0x00E2	Load Output Active This Week	uint32	r	s	1.0	0.0	
229	0x00E4	Load Output Energy This Month	uint32	r	kWh	0.001	0.0	
231	0x00E6	Load Output Active This Month	uint32	r	s	1.0	0.0	
233	0x00E8	Load Output Energy This Year	uint32	r	kWh	0.001	0.0	
235	0x00EA	Load Output Active This Year	uint32	r	s	1.0	0.0	
237	0x00EC	Load Output Energy Lifetime	uint32	r	kWh	0.001	0.0	
239	0x00EE	Load Output Active Lifetime	uint32	r	s	1.0	0.0	
241	0x00F0	Inverter Enable/Disable	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
242	0x00F1	Charger Enable/Disable	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
243	0x00F2	Force Charger State	uint16	rw		1.0	0.0	1=Bulk 2=Float 3=No Float
244	0x00F3	Operating Mode	uint16	rw		1.0	0.0	2=Standby 3=Operating
245	0x00F4	Reset	uint16	rw		1.0	0.0	0=Reboot 2=Reset to Factory
246	0x00F5	Clear	uint16	rw		1.0	0.0	See section 2.10

Reg. No.	Reg. Addr.	Name	Type	R/W	Units	Scale	Offset	Notes
247	0x00F6	Search Mode	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
248	0x00F7	Inverter Mode	uint16	rw		1.0	0.0	See section 2.11
249	0x00F8	Charge Cycle	uint16	rw		1.0	0.0	1=3 Stage 2=2 Stage 3=CVCC
250	0x00F9	Maximum Charge Rate	uint16	rw	%	1.0	0.0	
251	0x00FA	Equalize Now	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
252	0x00FB	Charger Override Enable/Disable	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
253	0x00FC	Default Battery Temperature	uint16	rw		1.0	0.0	0=Cold 1=Warm 2=Hot
254	0x00FD	Battery Type	uint16	rw		1.0	0.0	See section 2.12
255	0x00FE	Nominal Battery Voltage	uint32	r	V	0.001	0.0	
257	0x0100	Battery Bank Capacity	uint16	rw	Ah	1.0	0.0	
258	0x0101	Battery Temperature Coefficient	uint16	rw	mV/degC	1.0	0.0	
259	0x0102	Recharge Voltage	uint32	rw	V	0.001	0.0	
261	0x0104	Low Battery Cut Out	uint32	rw	V	0.001	0.0	
263	0x0106	Low Battery Cut Out Delay	uint16	rw	s	0.01	0.0	
264	0x0107	AC1 Breaker Size	uint16	rw	A	0.01	0.0	
265	0x0108	High Battery Cut Out	uint32	rw	V	0.001	0.0	
267	0x010A	Maximum Search Watts	uint16	rw	W	1.0	0.0	
268	0x010B	Search Delay	uint16	rw	s	0.01	0.0	
269	0x010C	Equalize Voltage Set Point	uint32	rw	V	0.001	0.0	
271	0x010E	Equalize Support	uint16	rw		1.0	0.0	0=Equalization Not Allowed 1=Equalization Allowed
272	0x010F	reserved	uint16	r				

Reg. No.	Reg. Addr.	Name	Type	R/W	Units	Scale	Offset	Notes
273	0x0110	Bulk/Boost Voltage Set Point	uint32	rw	V	0.001	0.0	
275	0x0112	Absorption Voltage Set Point	uint32	rw	V	0.001	0.0	
277	0x0114	Absorption Time	uint16	rw	min	0.016667	0.0	
278	0x0115	reserved	uint16	r				
279	0x0116	Float Voltage Set Point	uint32	rw	V	0.001	0.0	
281	0x0118	Charge Block Start	uint16	rw	min	1.0	0.0	
282	0x0119	Charge Block Stop	uint16	rw	min	1.0	0.0	
283	0x011A	Load Shave Stop	uint16	rw	min	1.0	0.0	Load Shave stops when the Load Shave block period ends.
284	0x011B	Load Shave Start	uint16	rw	min	1.0	0.0	Load Shave starts when the Load Shave block period begins.
285	0x011C	Invert Block Start	uint16	rw	min	1.0	0.0	
286	0x011D	Invert Block Stop	uint16	rw	min	1.0	0.0	
287	0x011E	AC1 Low Voltage	uint32	rw	V	0.001	0.0	
289	0x0120	AC Qualify Time	uint16	rw	s	0.01	0.0	
290	0x0121	reserved	uint16	r				
291	0x0122	AC1 High Voltage	uint32	rw	V	0.001	0.0	
293	0x0124	AC1 Low Frequency	uint16	rw	Hz	0.01	0.0	
294	0x0125	AC1 High Frequency	uint16	rw	Hz	0.01	0.0	
295	0x0126	Identify Enable	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
296	0x0127	European Frequency	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
297	0x0128	Peak Load Shaving Enable	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
298	0x0129	AC Support Mode Enable	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
299	0x012A	Peak Load Shaving Current	uint32	rw	A	0.001	0.0	
301	0x012C	Refresh Configuration Data	uint16	rw		1.0	0.0	1=Refresh
302	0x012D	AC Output Association (Loads)	uint16	rw		1.0	0.0	See section 2.13

Reg. No.	Reg. Addr.	Name	Type	R/W	Units	Scale	Offset	Notes
303	0x012E	AC Input Association (Generator)	uint16	rw		1.0	0.0	See section 2.14
304	0x012F	DC Association (Battery)	uint16	rw		1.0	0.0	See section 2.15
305	0x0130	Low Battery Cut Out Hysteresis	uint32	rw	V	0.001	0.0	
307	0x0132	reserved	uint16	r				
308	0x0133	Store Invert State	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
309	0x0134	AC Coupling	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
310	0x0135	AC Support on Battery SOC Enable	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
311	0x0136	State of Charge Level to Start AC Support	uint16	rw	%	1.0	0.0	
312	0x0137	State of Charge Level to Stop AC Support	uint16	rw	%	1.0	0.0	
313	0x0138	Maximum Discharge Current	uint16	rw	A	1.0	0.0	
314	0x0139	Maximum Discharge Time Interval	uint16	rw	s	0.01	0.0	
315	0x013A	Peak Load Shaving Delay	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
316	0x013B	Enhanced AC Support	uint16	rw		1.0	0.0	0=Disabled 1=Enabled
317	0x013C	Maximum Bulk Charge Current	uint32	rw	A	0.001	0.0	
319	0x013E	Maximum Absorption Charge Current	uint32	rw	A	0.001	0.0	
321	0x0140	Maximum Float Charge Current	uint32	rw	A	0.001	0.0	
323	0x0142	Time Delay to Enter AC Support on SOC	uint16	rw	s	1.0	0.0	
324	0x0143	Time Delay to Exit AC Support on SOC	uint16	rw	s	1.0	0.0	
337	0x0150	AC Support Voltage	uint32	rw	V	0.001	0.0	

Reg. No.	Reg. Addr.	Name	Type	R/W	Units	Scale	Offset	Notes
345	0x0158	AC1 Net Current	sint32	r	A	0.001	0.0	
347	0x015A	AC1 Net Power	sint32	r	W	1.0	0.0	
353	0x0160	AC1 Output Energy This Hour	uint32	r	kWh	0.001	0.0	
355	0x0162	AC1 Output Active This Hour	uint32	r	s	1.0	0.0	
357	0x0164	AC1 Output Energy Today	uint32	r	kWh	0.001	0.0	
359	0x0166	AC1 Output Active Today	uint32	r	s	1.0	0.0	
361	0x0168	AC1 Output Energy This Week	uint32	r	kWh	0.001	0.0	
363	0x016A	AC1 Output Active This Week	uint32	r	s	1.0	0.0	
365	0x016C	AC1 Output Energy This Month	uint32	r	kWh	0.001	0.0	
367	0x016E	AC1 Output Active This Month	uint32	r	s	1.0	0.0	
369	0x0170	AC1 Output Energy This Year	uint32	r	kWh	0.001	0.0	
371	0x0172	AC1 Output Active This Year	uint32	r	s	1.0	0.0	
373	0x0174	AC1 Output Energy Lifetime	uint32	r	kWh	0.001	0.0	
375	0x0176	AC1 Output Active Lifetime	uint32	r	s	1.0	0.0	
377	0x0178	No Load Voltage Derating	uint16	rw		1.0	0.0	0=Disabled 1=Enabled

2   Data Point Enumerations

2.1   Conext SW Operating State

The following operating states may be reported:

0=Hibernate
1=Power Save
2=Safe Mode
3=Operating

4=Diagnostic Mode
5=Remote Power Off
255=Data Not Available

2.2 Fault Bitmap 0

The Conext SW may report one or more of the following faults

bit0=F01:AC Output Under-Voltage
bit1=F02:AC Output Over-Voltage
bit2=F17:AC Backfeed (L1)
bit3=F18:AC Backfeed (L2)
bit4=F44:Battery Over-Temperature
bit5=F46:Reserved
bit6=F47:DC Under-Voltage (Immediate)
bit7=F48:DC Under Voltage
bit8=F49:DC Over-Voltage
bit9=F52:EEPROM Error (Cal Fail)
bit10=F53:EEPROM Error (Config Fail)
bit11=F54:Reserved
bit12=F55:EEPROM Error (Log Fail)
bit13=F56:EEPROM Error (Strings Fail)
bit14=F57:FET1 Over-Temperature
bit15=F58:FET2 Over-Temperature

2.3 Fault Bitmap 1

The Conext SW may report one or more of the following faults

bit0=F59:Reserved
bit1=F60:Reserved
bit2=F61:Reserved
bit3=F62:Reserved
bit4=F63:Power Board Temperature Unreadable
bit5=F64:AC Overload
bit6=F67:Reserved
bit7=F68:Transformer Over-Temperature
bit8=F69:Reserved
bit9=F70:Unique Device Number Needed
bit10=F71:Too Many Masters
bit11=F72:Check AC Associations
bit12=F73:Transformer Temperature Unreadable

bit13=F74:Other Unit Invert Fault
bit14=F75:Master Inverter Lost
bit15=F76:No Masters

2.4   Fault Bitmap 2

The Conext SW may report one or more of the following faults:

bit0=F77:Reserved
bit1=F79:Battery Sensor Short
bit2=F85:Power Board Over-Temperature
bit3=F86:Dead Battery Detected
bit4=F87:Multi-Unit Frequency Error
bit5=F88:MPPT Ground Fault
bit6=F90:External BMS Disconnected
bit7=F93:Wrong Battery Temperature Sensor
bit8=F65:AC Overload
bit9=F89:Battery Discharge Over Current

2.5   Warning Bitmap

The Conext SW may report one or more of the following warnings:

bit0=W48:DC Under Voltage
bit1=W69:AGS Not Connected
bit2=W92:Three Phase AC Connected
bit3=W93:Wrong Battery Temperature Sensor
bit4=W99:Auto Clear Enable

2.6   Conext SW Invert Status

The following Conext SW inverter states may be reported:

1024=Invert
1025=AC Pass Through
1026=APS Only
1027=Load Sense
1028=Inverter Disabled
1029=Load Sense Ready
1030=Engaging Inverter

1031=Invert Fault
1032=Inverter Standby
1033=Grid-Tied
1034=Grid Support
1035=Gen Support
1036=Sell-to-Grid
1037=Load Shaving
1038=Grid Frequency Stabilization
1039=AC Coupling
1040=Reverse Ibatt

2.7 Conext SW Charger Status

The Conext SW Charger may be in one of the following states:

768=Not Charging
769=Bulk
770=Absorption
771=Overcharge
772=Equalize
773=Float
774=No Float
775=Constant VI
776=Charger Disabled
777=Qualifying AC
778=Qualifying APS
779=Engaging Charger
780=Charge Fault
781=Charger Suspend
782=AC Good
783=APS Good
784=AC Fault
785=Charge
786=Absorption Exit Pending
787=Ground Fault
788=AC Good Pending
789=Load Shaving
790=AC Support
791=AC Coupled
792=AC Coupled Bulk
793=AC Coupled Absorption
794=AC Coupled Float
795=AC Coupled No Float

796=External BMS
797=Load Sense

2.8   AC1 Voltage Qualification States

The Conext SW may report one of the following AC line qualification values:

0=Not Qualifying
1=Qualifying
2=Missing
3=Too Low
4=Too High
5=Qualification Good

2.9   AC1 Frequency Qualification States

The Conext SW may report one of the following AC line qualification values:

0=Not Qualifying
1=Qualifying
2=Missing
3=Too Low
4=Too High
5=Qualification Good

2.10   Clear Command

The Clear Command can be used to clear the fault; warning; event; and communication logs. The following values are supported:

1=Fault Log
2=Active Faults
4=Warning Log
8=Active Warnings
16=State Event Log
32=Communication Statistics
64=Statistics
128=User Statistics
255=All

2.11   Conext SW Inverter Configuration

The Conext SW may be configured as one of the following:

0=Invalid
1=Single Phase Stand Alone
11=Single Phase Master
12=Single Phase Slave
20=Split Phase Stand Alone
21=Split Phase Master
22=Split Phase Slave

2.12   Battery Type

The Conext SW supports the following battery types:

0=Flooded
1=Gel
2=AGM
3=Custom
6=Li-Ion

2.13   AC Output Association

The following associations are supported:

51=AC Load 1
52=AC Load 2
53=AC Load 3
54=AC Load 4
55=AC Load 5
56=AC Load 6
57=AC Load 7
58=AC Load 8
59=AC Load 9
60=AC Load 10

2.14   AC Input Association

The following associations are supported:

1=None
19=Generator 1
67=Grid 1

2.15   DC Input Output Association

The following associations are supported:

3=House Battery Bank 1
4=House Battery Bank 2
5=House Battery Bank 3
6=House Battery Bank 4
7=House Battery Bank 5