

Programming for HECO compliance CDD (Concentrator Data Device) web server



Introduction

This instruction provides the method to reprogram the ABB CDD (Concentrator Data Device) to the Hawaii Electric Company, Inc. (HECO) “ultra-fast trip” Transient Over-voltage (TrOV-2) requirements and Frequency & Voltage Ride-Through (FVRT) mitigation requirements as described in the document “Appendix IIA Full Ride Through Settings for O’ahu, Maui, Hawai’i” dated January, 2015. Details of these requirements are available on the HECO website at: http://www.hawaiianelectric.com/vcmcontent/StaticFiles/pdf/TrOVandFVRT_Public_Feb2015.pdf.

Verification of inverters and CDDs set to HECO requirements for the islands of O’ahu, Maui, and Hawai’i

ABB and Power-One branded inverters, in conjunction with ABB’s CDD, are compliant to the FVRT and TrOV-2 requirements when they operate with the firmware version and country standard revision specified in Table 1 below:

Brand	Inverter model	Firmware versions	Country standard revision
ABB Power-One	MICRO-0.25-I-OUTD-US-208/240	– CDD supervisor firmware 2.3.7 or later	
ABB Power-One	MICRO-0.3-I-OUTD-US-208/240	– Inverter supervisor firmware C112 or later – Inverter DSP firmware B159 or later	HAWAII240@60HzSplitPhCSA Rev. 13 or later or
ABB Power-One	MICRO-0.3HV-I-OUTD-US-208/240	– CDD supervisor firmware 2.3.7 or later – Inverter supervisor firmware C011 or later – Inverter DSP firmware B101 or later	HAWAII208@60HzCSA Rev. 13 or later

Table 1 - Brand/model/firmware version/country standard revision

Instruction for CDD and inverter firmware upgrade

If the firmware revision of the CDD or inverter is earlier than listed in Table 1 above, the inverter or CDD must be upgraded to the latest firmware before selecting the Hawai’i grid settings. For information on programming ABB MICRO inverters to HECO compliance, refer to the instruction entitled “Programming for HECO compliance - MICRO-0.25-I-OUTD-US-208/240 / MICRO-0.3-I-OUTD-US-208/240 / MICRO-0.3HV-I-OUTD-US-208/240” located at <http://www.abb.com/abblibrary/DownloadCenter/> (search for “MICRO Programming for HECO compliance”).

Equipment and software needed

- Computer with access to the Internet.
- CDD product manual and, if needed, the MICRO-0.25/0.3/0.3HV-I-OUTD-US product manual for reference, located at <http://www.abb.com/abblibrary/DownloadCenter/> (search for “CDD product manual” or “MICRO product manual”).

Contact information

For answers to questions regarding reprogramming of the product in this instruction, contact ABB solar inverter post-sales technical support at 1-877-261-1374, 6 a.m. – 6 p.m. MST.

CDD web server — firmware version and country standard setting

To verify the CDD's latest firmware and country standard settings, complete steps 1 to 5.

Step 1

- Connect to the CDD web server as indicated in the CDD product manual.

Step 2

- Once connected to the CDD web server, click on the INFO menu as shown in Figure 1 below.

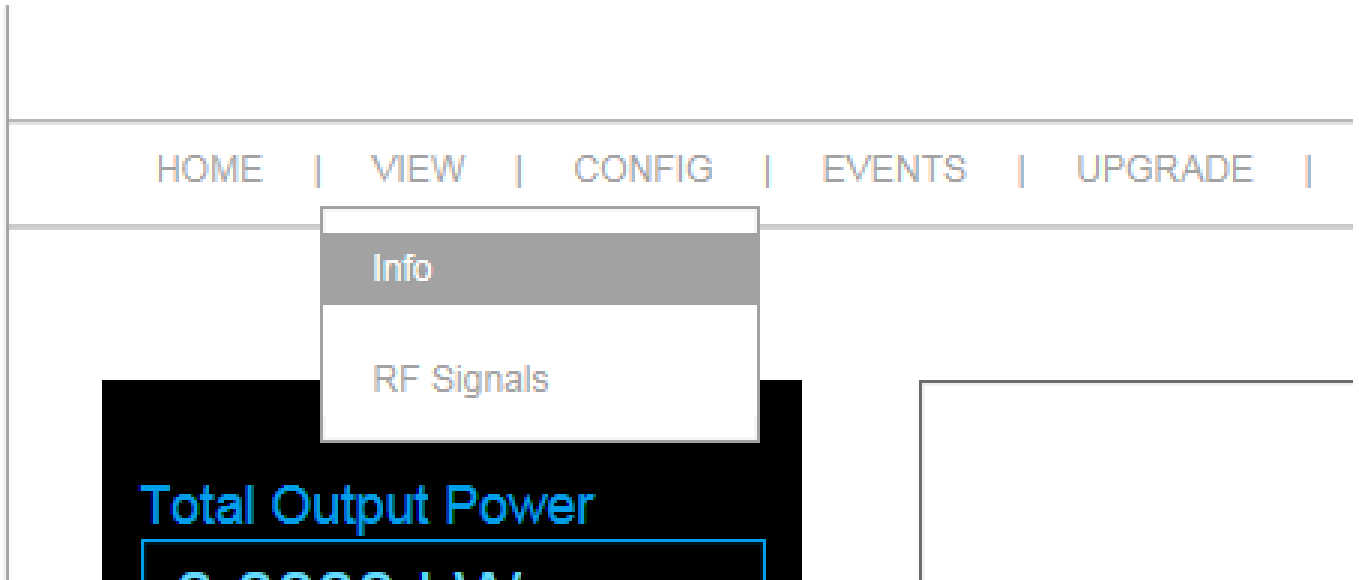


Figure 1 - Click on the INFO menu

Step 3

- In the System area of the Info menu, verify that the firmware version is 2.3.7 or later (see Figure 2 below), and in the Plant area of the Info menu, confirm that the country standard is rev 13 or later (see Figure 3 on the next page).


HOME VIEW CONFIG EVENTS UPGRADE REGISTRATION Ita	
Total Output Power 0.0000 kW	
Total Energy 0.000 kWh	
CO2 Saved 0.00 t	
Plant Status OK	
Generic-GMT-7 12-06-15 15:16 DST not active 	
Micro # 0	
WLess type WP_INFRASTRUCTURE	
IP Portal	54.187.83.135
IP Upgrade	151.22.100.240
Send Data Time(sec)	900
Date/Time (edit)	
Date	12/06/15
Time	15:14:26
System	
Serial number	059165-3M60-3012
Firmware microP	v2.3.7.d - ABB
Firmware microP build date	Jul 15 2014 08:20:54
Stack TCPIP version	v5.42
Firmware WLess module	v18.7
Radio module	ABB EMB-PWO
Firmware radio module	v1.35.7.13.1
Boot	

Figure 2 - Verify the firmware version

HOME | VIEW | CONFIG | EVENTS | UPGRADE | REGISTRATION |

Total Output Power
0.0000 kW

Total Energy
0.000 kWh

CO2 Saved
0.00 t

Plant Status
OK

Generic-GMT-7
16-06-15 08:57
DST not active

Info

Plant (edit)

Plant Name	Power-One Training
Location	Phoenix
Address	3201 E. Harbour Dr
Latitude	N33.41
Longitude	W112.04
Time Zone	Generic-GMT-7
Country Std	HAWAII240V@60HzSplitPhCSA Rev. 13

Network (edit)

Host Name	P1
MAC address	00:1E:C0:03:F9:1A
MAC address RF	00:12:4B:00:02:29:E3:D5
IP Address	10.123.26.35

Figure 3 - Verify country standard rev

Step 4

- Click on the Config menu and then select Plant (see Figure 4 below) from the drop down selection to access Plant Configuration (see Figure 5 on the next page). Select the appropriate country standard.

HOME | VIEW | CONFIG | EVENTS | UPGR

Plant

Micro Manager

Figure 4- Select Plant from the drop down menu

Note: To comply with HECO requirements, either country standard HAWAII240V@60HzSplitPhCSA or HAWAII208V@60HzPhCSA needs to be selected, depending on the local grid voltage rules in effect where the CDDs and MICROS are installed.

Figure 5 - Select the Hawaiian country standard

Step 5

- After selecting the appropriate country standard, click confirm.

Verify CDD web server has correct country standards to meet HECO requirements

To verify or change parameters provided in the document “Appendix IIA Full Ride Through Settings for O’ahu, Maui, Hawai’i” dated January, 2015, complete steps 1 to 3 that follow.

Step 1

- From the Config menu, select the CS Param drop down (see Figure 6 below).

Figure 6 - Select the CS Param drop down

Step 2

- Type admin/admin in the Username and Password fields that appear after selecting the CS Param drop down.

Step 3

- Check that all parameters related to the country standard chosen (HAWAII240V@60HzSplitPhCSA or HAWAII208V@60HzPhCSA) match the parameters provided in the document "Appendix IIA Full Ride Through Settings for O'ahu, Maui, Hawai'i" dated January, 2015, and if they do not match, change the values in the Value column, as shown in Figure 7 below and Figure 8 on the next page.

NOTE: The HECO country standard (HAWAII240V@60HzSplitPhCSA or HAWAII208V@60HzPhCSA) values are set by default. When one of these country standards is selected, the list of parameters is already compliant with HECO requirements. If there is a local exception and there is a requirement to change parameters, the user can modify the settings by inputting the required values in the **Value** column. Values can be changed only within the *Min-Max* range (the changed value must be greater than the default minimum value – for example, a change to a default *Frequency Ride Through* minimum of 20 must be input with the value of at least 20.1 and not more than the maximum of 21.0).

HAWAII240V@60HzSplitPhCSA

Par	Name	Min	Max	Value	Rules
2	U> Ph-Ph(Restr.Range)[V]	264.2	288.0	264.4	
3	U< Ph-Ph(Restr.Range)[V]	168.0	211.0	211.0	
22	U> Ph-N(Restr. Range)[V]	132.1	144.0	132.2	
23	U< Ph-N(Restr. Range)[V]	84.0	105.5	105.5	
29	F< (Restr. Range) [Hz]	56.0	57.0	57.0	
32	Uconn Time[s]	300.0	600.0	306.0	
33	U<(Restr. Range) Time[ms]	20000.0	20940.0	20100.0	
42	Fconn Time[s]	300.0	600.0	306.0	
47	U>(Restr. Range)Time[ms]	920.0	970.0	920.0	
50	F<(Restr. Range)Time[s]	20.0	21.0	20.1	
55	F>(Restr. Range)Time[s]	20.0	21.0	20.1	
56	U2<(Restr.Range)Time[ms]	10100.0	10940.0	10100.0	
68	F> (Restr. Range) [Hz]	63.0	64.0	63.0	
69	U2<(Restr.Range)Ph-Ph[V]	120.0	167.8	167.8	
70	U2<(Restr. Range)Ph-N[V]	60.0	83.9	83.9	

Confirm Reset

Figure 7 - Parameters for country code HAWAII240V@60HzSplitPhCSA

Par	Name	Min	Max	Value	Rules
2	U> Ph-Ph(Restr.Range)[V]	229.0	249.6	249.6	
3	U< Ph-Ph(Restr.Range)[V]	145.6	183.0	183.0	
22	U> Ph-N(Restr. Range)[V]	114.5	124.8	124.8	
23	U< Ph-N(Restr. Range)[V]	72.8	91.5	91.5	
29	F< (Restr. Range) [Hz]	56.0	57.0	57.0	
32	Uconn Time[s]	300.0	600.0	306.0	
33	U<(Restr. Range) Time[ms]	20000.0	20940.0	20100.0	
42	Fconn Time[s]	300.0	600.0	306.0	
47	U>(Restr. Range)Time[ms]	920.0	970.0	930.0	
50	F<(Restr. Range)Time[s]	20.0	21.0	20.1	
55	F>(Restr. Range)Time[s]	20.0	21.0	20.1	
56	U2<(Restr.Range)Time[ms]	10000.0	10960.0	10100.0	
57	U>> Time[ms]	7.0	150.0	80.0	
68	F> (Restr. Range) [Hz]	63.0	64.0	63.0	
69	U2<(Restr.Range)Ph-Ph[V]	104.0	145.2	145.0	
70	U2<(Restr. Range)Ph-N[V]	52.0	72.8	52.0	

Confirm Reset

Figure 8 - Parameters for country code HAWAII208V@60HzPhCSA

For more information please contact:
www.abb.com/solarinverters

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