

## 5 EMU Local Interface

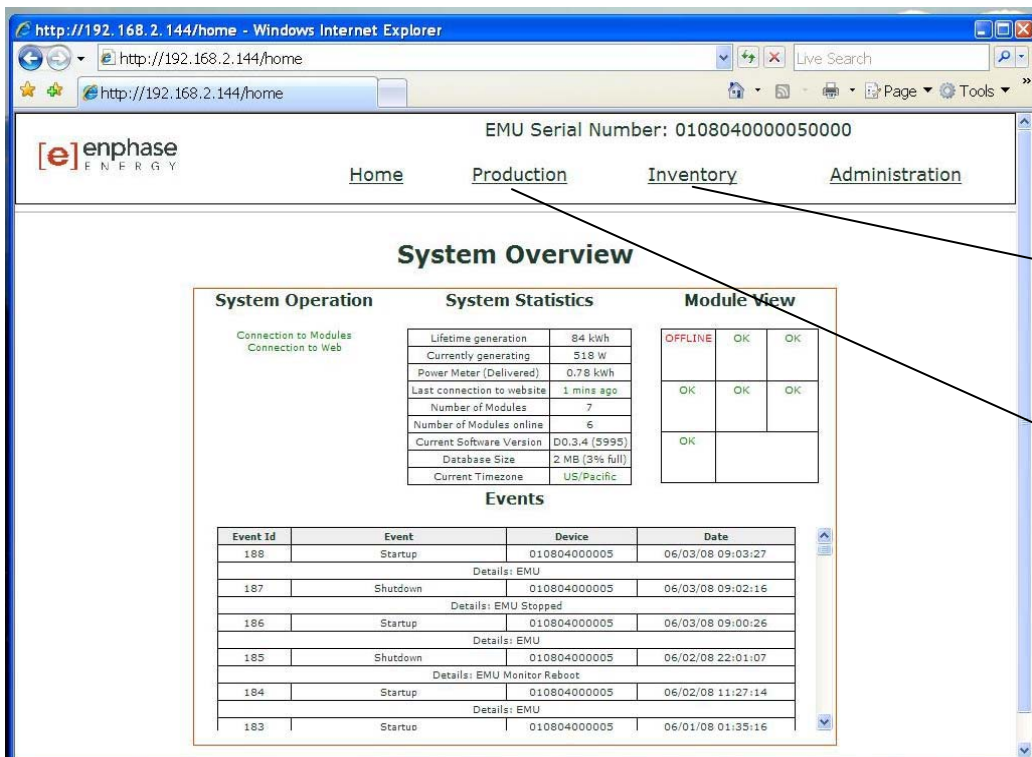
Connection to the Enphase Enlighten™ web-based monitoring and analysis requires an Internet connection. However, if there is no Internet access at the installation site, it is still possible to communicate directly with the EMU using the Ethernet port and a personal computer with a web browser. The following steps describe how to access the EMU and the data that is available through the local connection.

1. Connect one end of the Ethernet cable supplied with the EMU to the EMU port labeled "Ethernet".
2. Connect the other end of the Ethernet cable to the RJ45 network port of the computer.
3. Open the Internet browser application on the computer.
4. In the browser address window enter the IP address displayed in the LCD window of the EMU (192.194.2.141 in this example).

If you fail to make a connection at this point, you can try to manually configure your subnet to match any address from the range 169.254.x.x/16 (for example, 169.254.5.39). If this does not correct the problem, call Enphase Customer Support at 877-797-4743.

### Home Screen

Once the browser has successfully connected with the EMU, the following screen is displayed in the browser. This home screen provides a system overview and shows the current status of the inverters that have been identified by this EMU. From this screen, you can access other screens in the interface.



The screenshot shows a web browser window displaying the Enphase EMU interface. The address bar shows `http://192.168.2.144/home`. The page title is "EMU Serial Number: 0108040000050000". The navigation menu includes "Home", "Production", "Inventory", and "Administration". The main content area is titled "System Overview" and contains three sections: "System Operation", "System Statistics", and "Module View".

**System Operation**

- Connection to Modules
- Connection to Web

**System Statistics**

Lifetime generation	84 kwh
Currently generating	518 W
Power Meter (Delivered)	0.78 kwh
Last connection to website	1 mins ago
Number of Modules	7
Number of Modules online	6
Current Software Version	D0.3.4 (5995)
Database Size	2 MB (3% full)
Current Timezone	US/Pacific

**Module View**

OFFLINE	OK	OK
OK	OK	OK
OK		

**Events**

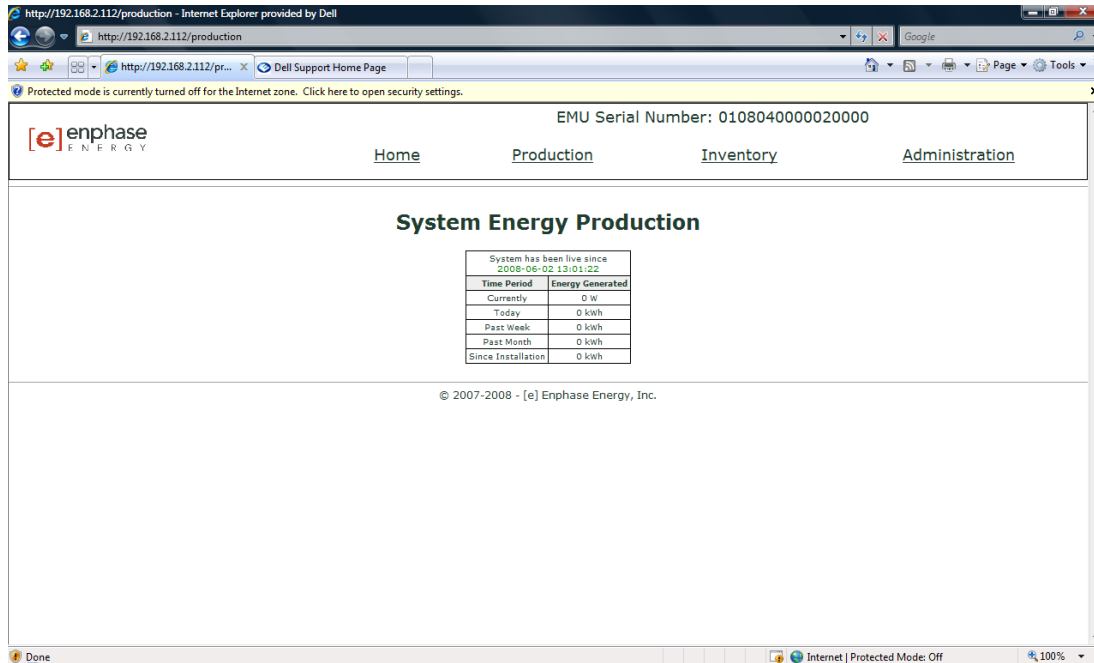
Event Id	Event	Device	Date
188	Startup	010804000005	06/03/08 09:03:27
Details: EMU			
187	Shutdown	010804000005	06/03/08 09:02:16
Details: EMU Stopped			
186	Startup	010804000005	06/03/08 09:00:26
Details: EMU			
185	Shutdown	010804000005	06/02/08 22:01:07
Details: EMU Monitor Reboot			
184	Startup	010804000005	06/02/08 11:27:14
Details: EMU			
183	Startup	010804000005	06/01/08 01:35:16

Annotations on the right side of the screenshot:

- Click to view Inventory screen (pointing to the "Inventory" link)
- Click to view Production screen (pointing to the "Production" link)

## Production Screen

To view system energy production statistics for your system, click "Production" from the EMU home screen to navigate to the production screen.



EMU Serial Number: 0108040000020000

Home Production Inventory Administration

### System Energy Production

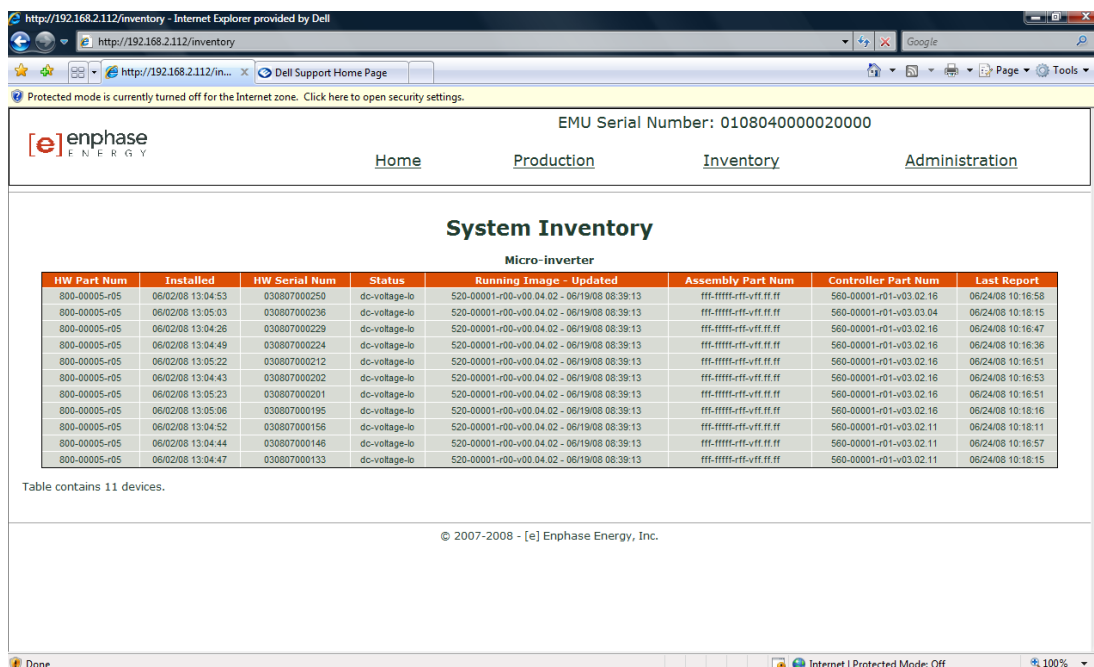
Time Period	Energy Generated
Currently	0 kWh
Today	0 kWh
Past Week	0 kWh
Past Month	0 kWh
Since Installation	0 kWh

System has been live since 2008-06-02 13:01:22

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## Inventory Screen

To view a listing of the Micro-inverters in your system, click "Inventory" from any screen to navigate to the inventory screen.



EMU Serial Number: 0108040000020000

Home Production Inventory Administration

### System Inventory

Micro-inverter

HW Part Num	Installed	HW Serial Num	Status	Running Image - Updated	Assembly Part Num	Controller Part Num	Last Report
800-00005-05	06/02/08 13:04:53	030807000250	dc-voltage-lo	520-00001-r00-v00.04.02 - 06/19/08 08:39:13	fff-fffff-rff-vff-fff-fff	560-00001-r01-v03.02.16	06/24/08 10:16:58
800-00005-05	06/02/08 13:05:03	030807000236	dc-voltage-lo	520-00001-r00-v00.04.02 - 06/19/08 08:39:13	fff-fffff-rff-vff-fff-fff	560-00001-r01-v03.03.04	06/24/08 10:18:15
800-00005-05	06/02/08 13:04:26	030807000229	dc-voltage-lo	520-00001-r00-v00.04.02 - 06/19/08 08:39:13	fff-fffff-rff-vff-fff-fff	560-00001-r01-v03.02.16	06/24/08 10:16:47
800-00005-05	06/02/08 13:04:49	030807000224	dc-voltage-lo	520-00001-r00-v00.04.02 - 06/19/08 08:39:13	fff-fffff-rff-vff-fff-fff	560-00001-r01-v03.02.16	06/24/08 10:16:36
800-00005-05	06/02/08 13:05:22	030807000212	dc-voltage-lo	520-00001-r00-v00.04.02 - 06/19/08 08:39:13	fff-fffff-rff-vff-fff-fff	560-00001-r01-v03.02.16	06/24/08 10:16:51
800-00005-05	06/02/08 13:04:43	030807000202	dc-voltage-lo	520-00001-r00-v00.04.02 - 06/19/08 08:39:13	fff-fffff-rff-vff-fff-fff	560-00001-r01-v03.02.16	06/24/08 10:16:53
800-00005-05	06/02/08 13:05:23	030807000201	dc-voltage-lo	520-00001-r00-v00.04.02 - 06/19/08 08:39:13	fff-fffff-rff-vff-fff-fff	560-00001-r01-v03.02.16	06/24/08 10:16:51
800-00005-05	06/02/08 13:05:06	030807000195	dc-voltage-lo	520-00001-r00-v00.04.02 - 06/19/08 08:39:13	fff-fffff-rff-vff-fff-fff	560-00001-r01-v03.02.16	06/24/08 10:18:16
800-00005-05	06/02/08 13:04:52	030807000158	dc-voltage-lo	520-00001-r00-v00.04.02 - 06/19/08 08:39:13	fff-fffff-rff-vff-fff-fff	560-00001-r01-v03.02.11	06/24/08 10:18:11
800-00005-05	06/02/08 13:04:44	030807000148	dc-voltage-lo	520-00001-r00-v00.04.02 - 06/19/08 08:39:13	fff-fffff-rff-vff-fff-fff	560-00001-r01-v03.02.11	06/24/08 10:16:57
800-00005-05	06/02/08 13:04:47	030807000133	dc-voltage-lo	520-00001-r00-v00.04.02 - 06/19/08 08:39:13	fff-fffff-rff-vff-fff-fff	560-00001-r01-v03.02.11	06/24/08 10:18:15

Table contains 11 devices.

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## Event Messages

The table below lists messages that the EMU can produce to indicate certain conditions. These messages appear on screen when your computer is connected to the EMU local interface. These messages can provide Enphase Customer Support with valuable information, should you need to call for assistance.

Where message is displayed:		
Home Screen	Inventory Screen	Description
AC Frequency Out Of Range	ac-freq-oor	The frequency of the AC grid has exceeded the limits specified by UL 1741.
AC Voltage Out Of Range	ac-voltage-oos-p# (# = 1, 2 or 3)	The voltage of the indicated AC phase (relative to neutral) has exceeded the limits specified by UL 1741.
Audible alarm active	audible-active	The inverter's buzzer is active, either due to an internally detected error or by user command.
Bad Flash Image	bad-flash-image	The inverter is not producing power because one of its flash memory images is corrupt. Contact Enphase Energy customer support at 877-797-4743 for assistance.
Commanded Reset	commanded-reset	The inverter has reset, either following a successful image download or by user command.
Control Request		This event logs a user control request made using the Administration > Device Conditions and Controls page or via Enlighten.
Critical Temperature	critical-temp	The inverter is producing less power in an attempt to not overheat (see Over Temperature)
DC Too High	dc-voltage-hi	The DC input voltage to the inverter is too high; check that the PV module and inverter are compatible.
DC Too Low	dc-voltage-lo	The DC input voltage to the inverter is too low; this is a normal condition at night, but during the day may indicate a bad or missing DC connection to the inverter.
Download to module begun		The EMU has begun an image download to the indicated inverter.
Download to module ended		The EMU has successfully downloaded an image to an inverter.
Download to module failed		The EMU was unable to successfully download an image to an inverter.

<b>Where message is displayed:</b>		
<b>Home Screen</b>	<b>Inventory Screen</b>	<b>Description</b>
GFI Tripped	gfi-tripped	An inverter has detected ground fault current greater than one amp. The error can only be cleared via the EMU after the ground fault condition has been remedied. The GFI can be cleared using the Device Conditions and Controls page unless the failure is permanent. Contact Enphase Energy customer support at 877-797-4743 for assistance.
Grid Gone	grid-gone	The AC utility grid is no longer present.
Grid Instability	grid-instability	The inverter is not producing power due to one or more of these conditions: AC Frequency Out Of Range, AC Voltage Out Of Range, or Grid Gone. Note that Grid Instability will remain for about 5 minutes after the underlying conditions clear.
Module added		The EMU has detected and is now associated to a new inverter.
Module failed to report		The EMU has not received a response to the last three messages sent to an inverter.
Over Temperature	over-temp	The inverter is not producing power, because it is too hot.
Power generation off by command	forced-pwr-prod-off	The inverter is not producing power by user command.
Power On Reset	power-on-reset	The inverter has powered on after having both AC and DC disconnected.
Shutdown		The EMU shut down its internal processing.
Skipped Cycles	skipped-cycles	The inverter has not produced power for more than 5% of the most recent production interval; this may be due to real problems in the grid, or a hardware failure of the inverter.
Startup		The EMU started its internal processing.