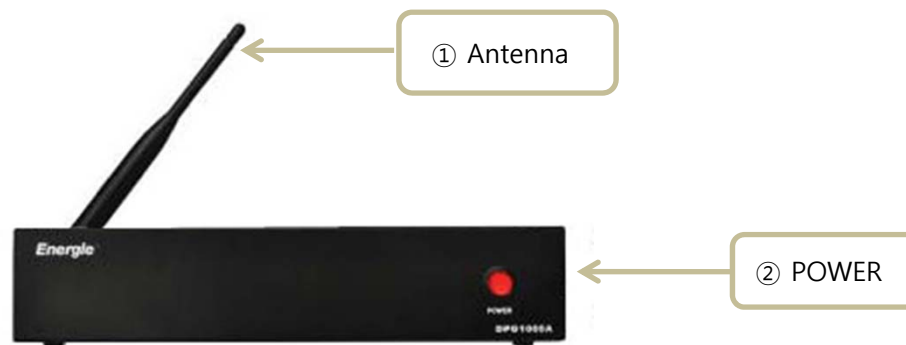


Smart Gateway DPG1000A

1. Summary

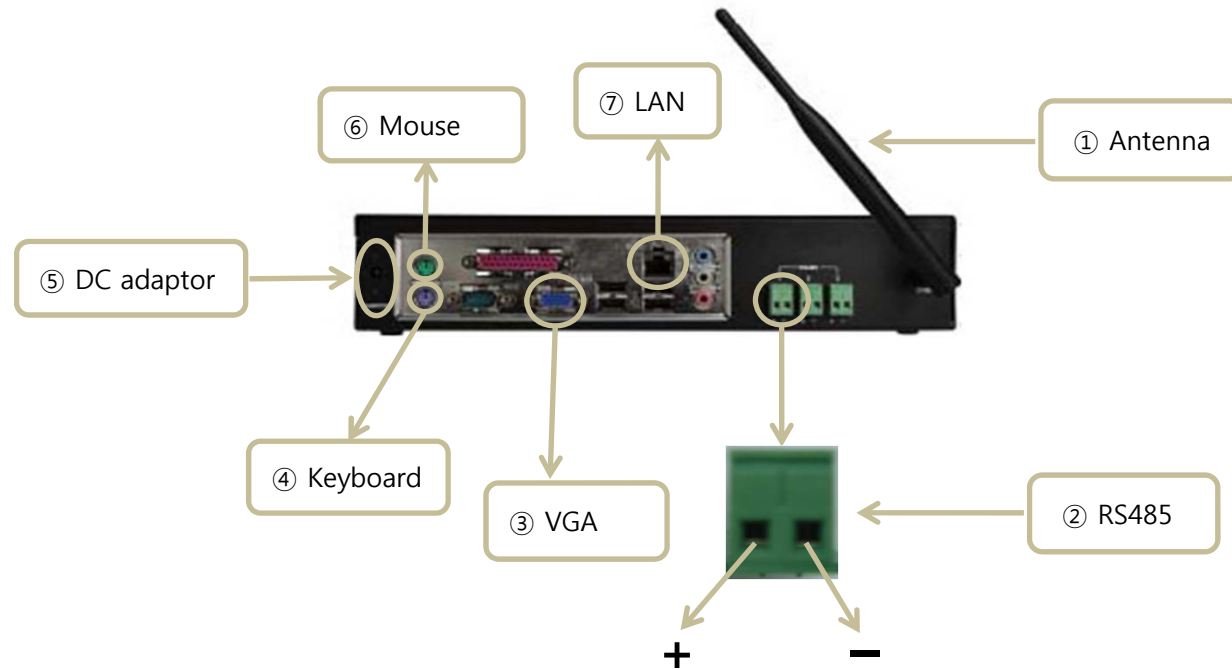
- Control & Monitoring smart-meters by Zigbee or RS485
- Supports oBIX (Open Building Information Exchange)
- Converting various protocol(DLMS, Modbus, Zigbee, etc...)to standard XML(oBIX)
- Supports international standards such as Modbus, BACnet, DLMS, Zigbee,RS485

2. Description



< Pic. 1 > Front view

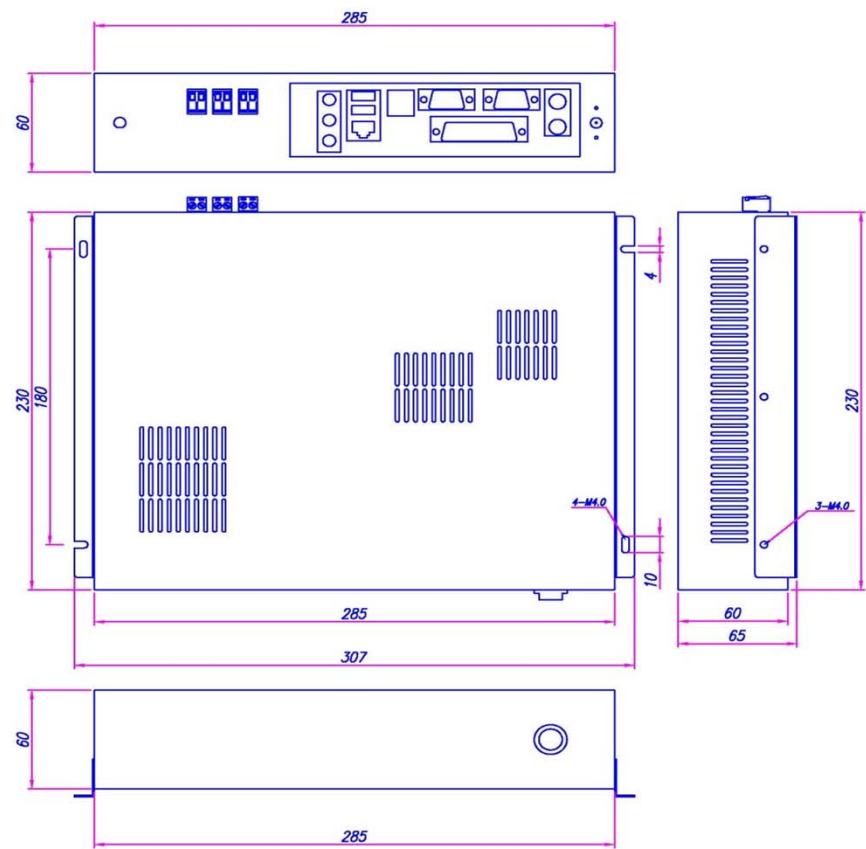
- ① Antenna : External antenna for Zigbee communication
- ② Power : Power On / Off button



< Pic. 2 > Rear view

- ① Antenna : External antenna for Zigbee communication
- ② RS485 : RS485 port
- ③ VGA : VGA port
- ④ Keyboard : PS2 keyboard
- ⑤ DC adaptor : DC adaptor, 12V DC / 5A
- ⑥ Mouse : PS2 mouse
- ⑦ LAN : RJ-45 Ethernet Port

3. Dimension



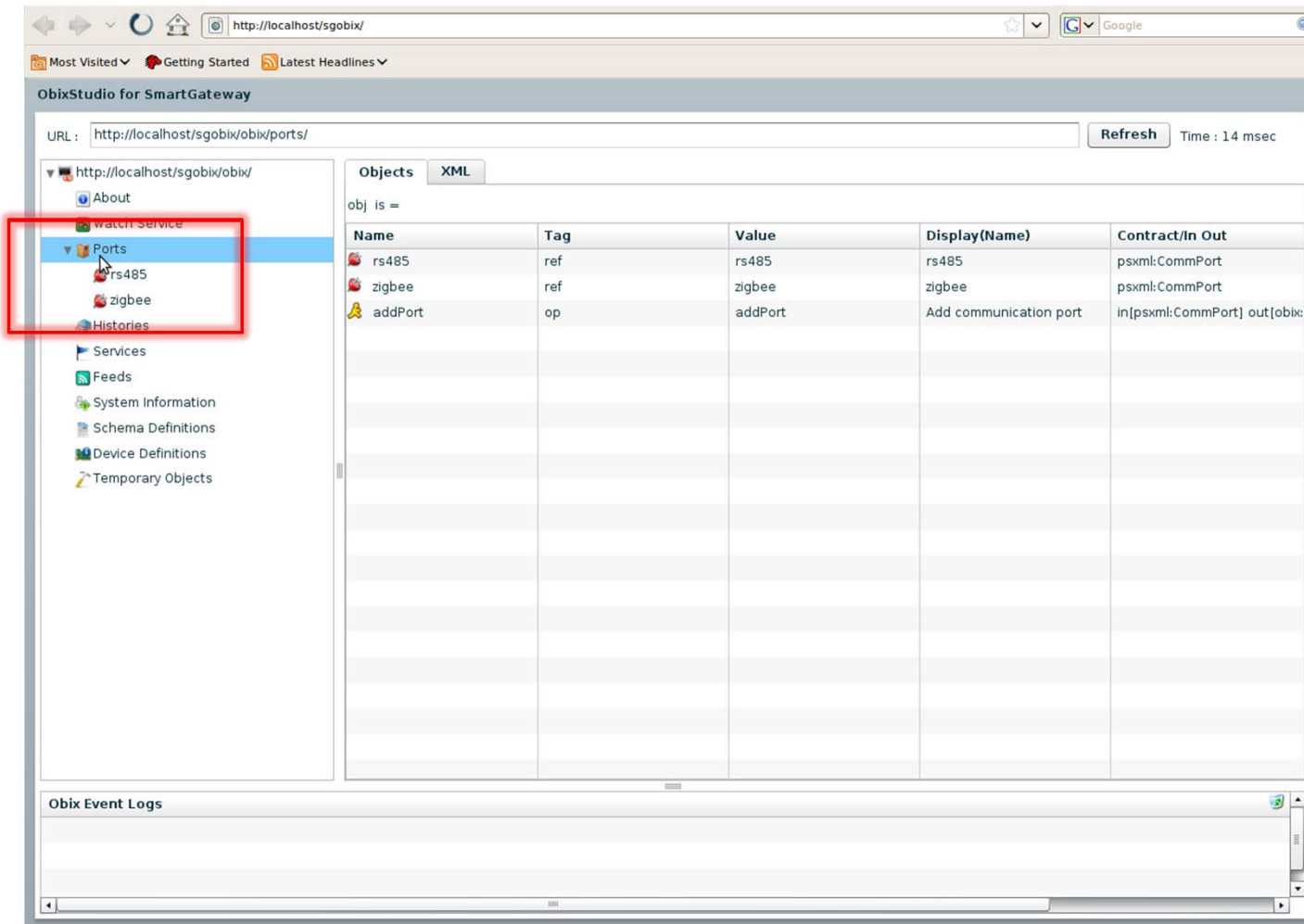
4. Product specifications

Category	Details
Model number	- DPG1000A
Main processor	- Intel Atom single core 1.60Ghz (512Kb cache)
Communication	- Zigbee / RS485 / RS232
Power rating	- DC 12V / 5A adaptor
Features	- Remote Monitoring by Zigbee wireless & RS485 - Power On/Off remote control - Monitoring Energy(kWh), Instantaneous power(W), Voltage(V), Current(A), Power factor(%), etc...

5. Software usage

- ① Boot the device by pushing the power button.
- ② Run a Firefox web-browser
- ③ Monitor smart meters as below sequence.

[RS485 Smart meter]
Ports (double click)



[RS485 Smart meter]

Ports → rs485 (double click)

The screenshot shows the ObixStudio for SmartGateway interface. The left sidebar contains a tree view of the system structure. The 'Ports' folder is expanded, and the 'rs485' port is selected and highlighted with a red rectangle. The main area displays the 'Objects' tab for the selected port, showing a table of properties and their values. The 'Obix Event Logs' panel is visible at the bottom.

URL: <http://localhost/sgobix/obix/ports/rs485/> Refresh Time: 74 msec

obj is = psxml:CommPort

Name	Tag	Value	Display(Name)	Contract/In Out
name	str	rs485	Name of this port, will be par	
description	str	rs485	Brief description of port	
transport	enum	serial	Medium of communication	psxml:Transport
protocol	enum	dlms_hdlc	Protocol of communication	psxml:Protocol
param	str	/dev/ttyS41:9600:8N1:NO	Communication Param. ex) /c	
multiDrop	bool	true	Can be multi-drop?	
extra	str		Extra information	
mqName	str	protoss_rs485		
active	bool	true	Activate this Port	
removePort	op	removePort	Remove this port	in[obix:nil] out[obix:str]
addDevice	op	addDevice	Add new device	in[http://localhost/sgobix/obi
1	ref	31	1	psxml:ElecMeter
2	ref	32	2	psxml:ElecMeter
3	ref	33	3	psxml:ElecMeter
4	ref	34	4	psxml:ElecMeter
5	ref	35	5	psxml:ElecMeter
6	ref	36	6	psxml:ElecMeter

Obix Event Logs

[RS485 Smart meter]
Ports → rs485 → 1 (double click)

Smart meter name : 1

The screenshot shows the ObixStudio for SmartGateway application. The URL bar indicates the current view is `http://localhost/sgobix/obix/ports/rs485/31/`. The left sidebar shows a tree view of the interface, with the 'Ports' section expanded and 'rs485' selected. Under 'rs485', there are several numbered ports (1, 2, 3, 4, 5, 6) and a 'meter' icon. The 'meter' icon is highlighted with a red box. The main area displays a table of objects for the selected meter.

Name	Tag	Value	Display(Name)	Contract/In Out
name	str	1		
vendor	str	BSPower		
model	str	BSP_1P2W_M430		
meta	uri	http://localhost:80/sgobix/ob		
addr	str	31		
description	str	1		
serialNo	str	1		
location	str	1		
x	real	0.0		
y	real	0.0		
z	int	0		
loadType1	enum	nil		psxml:LoadType
devType	enum	ElecMeter		psxml:DeviceType
extra	str			
meter	ref	meter		
_meta	ref	_meta	*Meta Info	
removeDevice	op	removeDevice	Remove this device	in[obix:nil] out[obix:str]

The bottom section of the interface is labeled 'Obix Event Logs' and is currently empty.

[RS485 Smart meter]

Ports → rs485 → 1 → meter (double click)

The screenshot shows the ObixStudio for SmartGateway interface. The left sidebar displays a tree view of the system structure. The 'Ports' folder is expanded, showing 'rs485' and '1'. The '1' folder is further expanded, showing 'meter' and 'ch1'. The 'meter' folder is highlighted with a red rectangle, indicating it is the selected object. The main panel displays the 'Objects' tab, showing a table of object properties. The table has columns: Name, Tag, Value, Display(Name), and Contract/In Out. The table contains the following data:

Name	Tag	Value	Display(Name)	Contract/In Out
deviceName	str	BSPE11S0YZM43001		
version	str		OBJECT_UNAVAILABLE	
energy	int	3 [W-hr]		
power	real	0.0 [W]		
powerFactor	real	0.0 [pf]		
deviceAddress	int	49		
ch1	ref	ch1		

The bottom panel shows the 'Obix Event Logs' section, which is currently empty.

[RS485 Smart meter]

Ports → rs485 → 1 → meter → ch1 (double click)

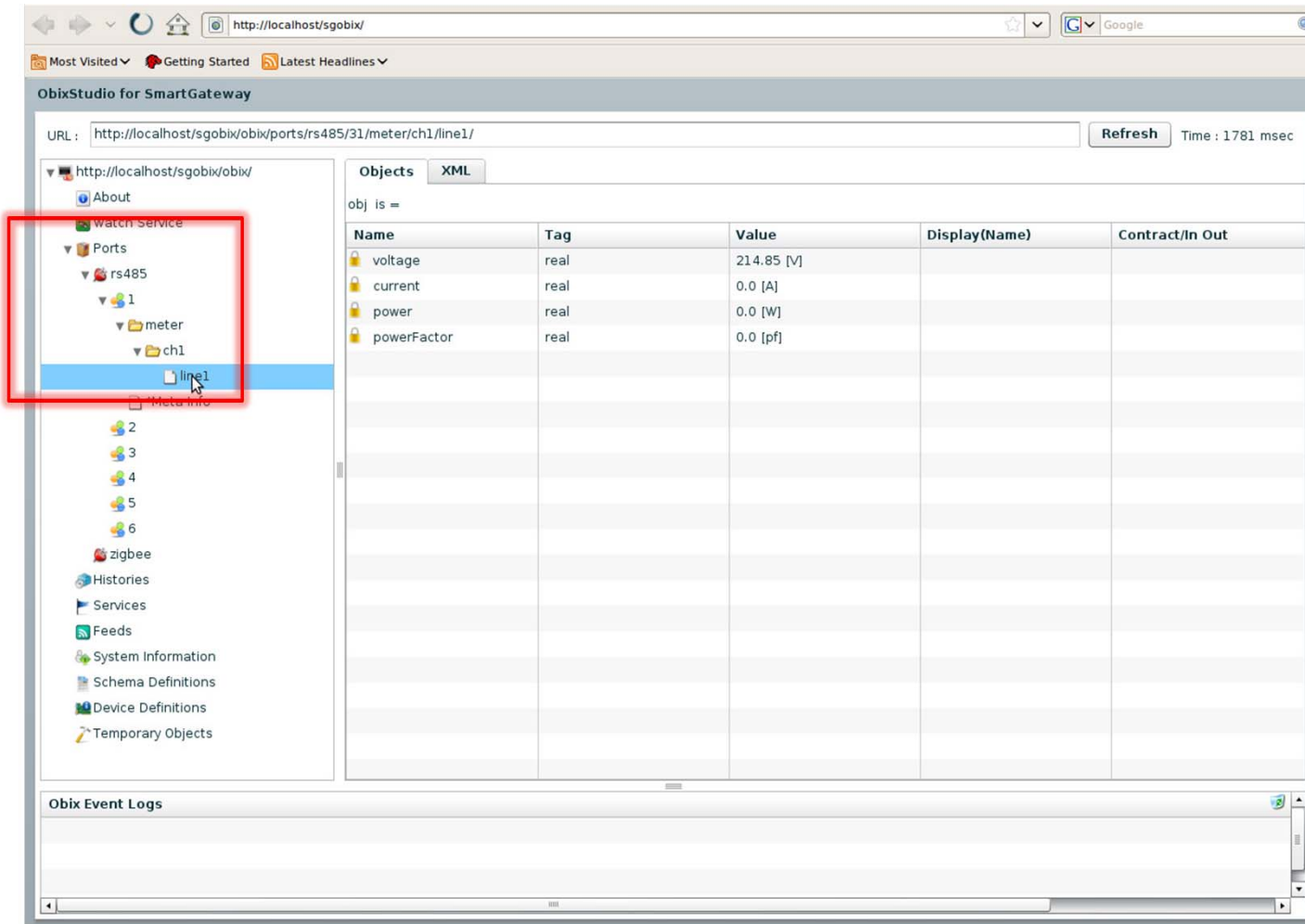
The screenshot shows the ObixStudio for SmartGateway interface. The URL bar displays `http://localhost/sgobix/`. The left sidebar shows a tree view of the system structure, with the path `Ports > rs485 > 1 > meter > ch1` highlighted. A red box is drawn around the `ch1` node. The main panel displays the `Objects` tab, showing a table of objects for the selected `ch1` node. The table has columns for `Name`, `Tag`, `Value`, `Display(Name)`, and `Contract/In Out`. The objects listed are:

Name	Tag	Value	Display(Name)	Contract/In Out
energy	int	3 [W-hr]		
power	real	0.0 [W]		
powerFactor	real	0.0 [pf]		
connectLoad	bool	true		
overloadShutOff	bool	false		
enableStandbyShutOff	bool	false		
standbyThresholdWatt	int	2 [W]		
standbyThresholdSecond	int	150 [s]		
connectOnStart	bool	true		
line1	ref	line1		

The bottom panel shows the `Obix Event Logs` section, which is currently empty.

【 RS485 Smart meter 】

Ports→rs485→1→meter→ch1→line1 (double click)



[ZIGBEE Smart meter]

Ports (double click)

The screenshot shows the ObixStudio for SmartGateway interface. The left sidebar contains a tree view with the following items: About, Watch Service, Ports (highlighted with a red box), rs485, zigbee, Histories, Services, Feeds, System Information, Schema Definitions, Device Definitions, and Temporary Objects. The main area displays the 'Objects' tab with a table of communication ports. The table has columns: Name, Tag, Value, Display(Name), and Contract/In Out. The data rows are:

Name	Tag	Value	Display(Name)	Contract/In Out
rs485	ref	rs485	rs485	psxml:CommPort
zigbee	ref	zigbee	zigbee	psxml:CommPort
addPort	op	addPort	Add communication port	in[psxml:CommPort] out[obj:

At the bottom of the interface is the 'Obix Event Logs' section, which is currently empty.

[ZIGBEE Smart meter]

Ports → zigbee (double click)

The screenshot shows the ObixStudio for SmartGateway interface. The URL bar displays `http://localhost/sgobix/obix/ports/zigbee/`. The left sidebar shows a tree view of the application structure, with the 'Ports' folder expanded and the 'zigbee' port selected. The main area displays the 'Objects' tab for the selected port, showing a table of properties and their values.

URL: `http://localhost/sgobix/obix/ports/zigbee/` Refresh Time: 34 msec

obj is = psxml:CommPort

Name	Tag	Value	Display(Name)	Contract/In Out
name	str	zigbee	Name of this port, will be pa	
description	str	zigbee	Brief description of port	
transport	enum	xbee_zb	Medium of communication	psxml:Transport
protocol	enum	dlms_hdlc	Protocol of communication	psxml:Protocol
param	str	/dev/ttyS21:9600:8N1:NO	Communication Param. ex) /	
multiDrop	bool	true	Can be multi-drop?	
extra	str		Extra information	
mqName	str	protoss_zigbee		
active	bool	true	Activate this Port	
removePort	op	removePort	Remove this port	in[obix:nil] out[obix:str]
addDevice	op	addDevice	Add new device	in[http://localhost/sgobix/ob
O_01	ref	0013A20040628F4C	O_01	psxml:ElecMeter
O_02	ref	0013A20040628F49	O_02	psxml:ElecMeter
O_03	ref	0013A20040606FFA	O_03	psxml:ElecMeter
O_04	ref	0013A200405D34D4	O_04	psxml:ElecMeter
O_05	ref	0013A200405D348C	O_05	psxml:ElecMeter
O_06	ref	0013A20040606FDE	O_06	psxml:ElecMeter
O_07	ref	0013A200405D6232	O_07	psxml:ElecMeter
O_08	ref	0013A200405D6239	O_08	psxml:ElecMeter
O_09	ref	0013A20040606FF1	O_09	psxml:ElecMeter
O_10	ref	0013A200405D626A	O_10	psxml:ElecMeter

Obix Event Logs

[ZIGBEE Smart meter]

Ports → zigbee → 0_01 (double click)

Smart meter name : 0_01

The screenshot shows the ObixStudio for SmartGateway interface. The left sidebar displays a tree view of the system structure. The 'Ports' folder is expanded, and the 'zigbee' folder is selected. Under 'zigbee', the '0_01' folder is highlighted with a red rectangle, and a mouse cursor is hovering over it. The main area displays the 'Objects' tab for the selected '0_01' folder. The URL bar shows 'http://localhost/sgobix/obix/ports/zigbee/0013A20040628F4C/'. The 'Objects' table lists various attributes and their values.

Name	Tag	Value	Display(Name)	Contract/In Out
name	str	0_01		
vendor	str	BSPower		
model	str	BSP_1P2W_M430		
meta	uri	http://localhost:80/sgobix/ob		
addr	str	0013A20040628F4C		
description	str	0_01		
serialNo	str	0_01		
location	str	0_01		
x	real	0.0		
y	real	0.0		
z	int	0		
loadType1	enum	nil		psxml:LoadType
devType	enum	ElecMeter		psxml:DeviceType
extra	str			
meter	ref	meter		
_meta	ref	_meta	*Meta Info	
_zigbee	ref	_zigbee	*Remote Zigbee Info	psxml:remoteZigbeeinfo
removeDevice	op	removeDevice	Remove this device	in[obix:nil] out[obix:str]

The bottom section of the interface shows the 'Obix Event Logs' panel, which is currently empty.

[ZIGBEE Smart meter]

Ports → zigbee → 0_01 → meter (double click)

The screenshot shows the ObixStudio for SmartGateway interface. The left sidebar contains a tree view of the system structure. The 'Ports' folder is expanded, showing 'rs485' and 'zigbee'. The 'zigbee' folder is expanded, showing '0_01'. The '0_01' folder is expanded, showing 'meter' and 'ch1'. The 'meter' folder is highlighted with a red box, and a mouse cursor is hovering over it. The right pane shows the 'Objects' table, which lists various attributes and their values.

URL: <http://localhost/sgobix/obix/ports/zigbee/0013A20040628F4C/meter/> Refresh Time: 4062 msec

Name	Tag	Value	Display(Name)	Contract/In Out
deviceName	str	BSPE11SOYZM43001		
version	str		OBJECT_UNAVAILABLE	
energy	int	4 [W-hr]		
power	real	0.0 [W]		
powerFactor	real	0.0 [pf]		
deviceAddress	int	16		
rssi	int	-56 [db]		
ch1	ref	ch1		

[ZIGBEE Smart meter]

Ports → zigbee → 0_01 → meter → ch1 (double click)

The screenshot shows the ObixStudio for SmartGateway application. The URL bar displays `http://localhost/sgobix/`. The left sidebar shows a tree view of the system structure. The 'Ports' folder is expanded, and the 'zigbee' folder is selected. Inside 'zigbee', the '0_01' folder is expanded, and the 'meter' folder is selected. The 'ch1' folder is highlighted in blue, and a red rectangle is drawn around it. The 'line1' folder is also visible. The main area displays the 'Objects' table, which lists various objects and their properties.

URL: `http://localhost/sgobix/obix/ports/zigbee/0013A20040628F4C/meter/ch1/` Refresh Time: 35 msec

Name	Tag	Value	Display(Name)	Contract/In Out
energy	int	4 [W-hr]		
power	real	0.0 [W]		
powerFactor	real	0.0 [pf]		
connectLoad	bool	true		
overloadShutOff	bool	false		
enableStandbyShutOff	bool	false		
standbyThresholdWatt	int	2 [W]		
standbyThresholdSecond	int	150 [s]		
connectOnStart	bool	false	OBJECT_UNAVAILABLE	
rss	int	-56 [db]		
line1	ref	line1		

Obix Event Logs

[ZIGBEE Smart meter]

Ports → zigbee → 0_01 → meter → ch1 → line1 (double click)

The screenshot shows the ObixStudio for SmartGateway interface. The URL bar displays `http://localhost/sgobix/`. The left sidebar shows a tree view of the system structure. A red rectangle highlights the path: `Ports` → `zigbee` → `0_01` → `meter` → `ch1` → `line1`. The `line1` item is selected. The main area displays a table of objects for the selected path. The table has columns: Name, Tag, Value, Display(Name), and Contract/In Out. The data is as follows:

Name	Tag	Value	Display(Name)	Contract/In Out
voltage	real	213.64 [V]		
current	real	0.0 [A]		
power	real	0.0 [W]		
powerFactor	real	0.0 [pf]		
rss	int	-55 [db]		

The bottom of the window shows the Obix Event Logs section, which is currently empty.

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.

Change or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment under FCC rules.

- ***The antenna used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons.***