

EE VERSION 5

Energy Management Software

SERVICING YOU SINCE 2000

The collage displays several key features of the SmartEE software:

- Dashboard Overview:** A central dark-themed dashboard with the SmartEE logo and version 5. It includes a clock, a 'Retrieve Meter Config#13' button, and a 'Wait...' indicator. Below the dashboard are icons for 'REAL-TIME Monitoring & Forecast', 'ENERGY SCADA', 'CONTROL Demand OEE Peak & Budget', 'MESSAGE ALARM & SOCIAL NOTIFY', and 'Energy data V & V (validation and verification) Reconciliation data to Management Report'. A 'Multi Energy Billing' icon is also present.
- Monitoring Screens:** Multiple windows showing real-time data with analog gauges for voltage (e.g., Valt R.S., Valt S-I), current (Amp), and power. A table titled 'พื้นที่การวัดไฟฟ้าของ FEEDER 1-4 (หน่วย)' lists data for four feeders.
- Reporting and Analysis:** A 'Report Meter' window showing data for March 2020 and April 2020, including kWh, kVAr, and Load Factor. A 'Multi Energy Billing' window shows a detailed breakdown of energy usage and costs.
- Data Visualization:** A pie chart showing the distribution of energy usage across different categories.
- System Configuration:** A window titled 'พื้นที่การวัดไฟฟ้าของ FEEDER 1-4 (หน่วย)' showing a detailed table of meter and feeder data.

Smart Monitor

The Smart Monitor interface displays a comprehensive overview of system performance. It features a top section with a data table and a line graph. Below this, there are several circular gauges in pink, yellow, and blue, each representing a different parameter. At the bottom, a large data table provides detailed numerical values for various metrics.

Smart Report

The Smart Report interface provides a detailed analysis of system data. It includes a prominent line graph at the top showing trends over time. Below the graph, there are multiple data tables and a pie chart that visualizes the distribution of data across different categories.

Smart OEE OPTION

The Smart OEE OPTION interface is designed for monitoring Overall Equipment Effectiveness. It features several data graphs and tables, providing a clear view of production efficiency and equipment utilization.



Smart Control OPTION

The Smart Control OPTION interface provides a detailed control and monitoring environment. It includes various control panels, data tables, and configuration windows, allowing for precise management of the system's operations.

Smart Notify OPTION

The Smart Notify OPTION interface focuses on alert management. It shows a notification on a smartphone, indicating that the system has detected an issue or reached a specific threshold. The interface also includes a data table and a Smart Alarm notification window.

Energy On WEB OPTION

The Energy On WEB OPTION interface provides a web-based energy management solution. It features a dashboard with various energy-related metrics and a server rack, highlighting the system's cloud-based architecture.

EE VERSION 5

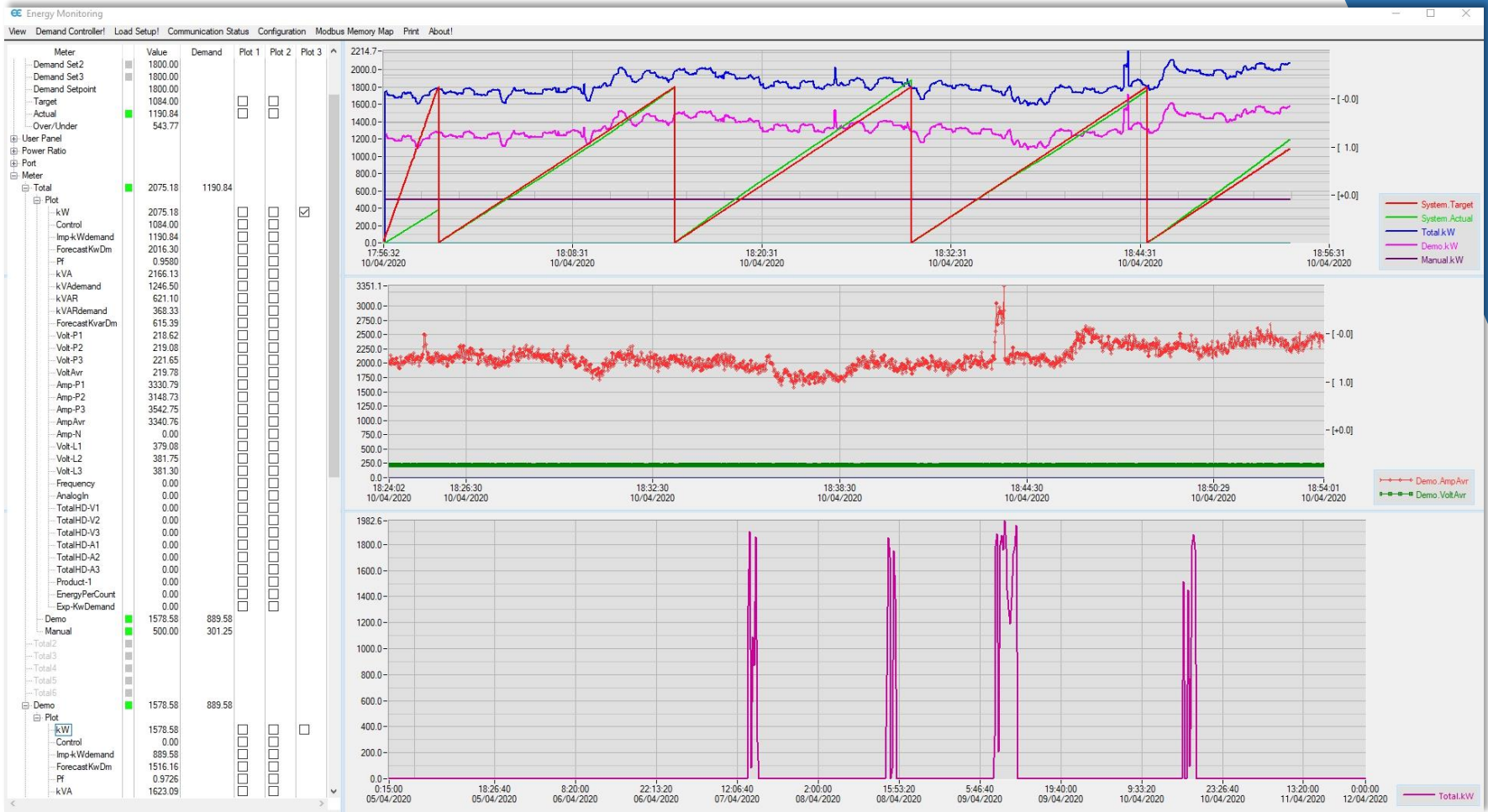
Energy Management Software

SERVICING YOU SINCE 2000





SmartEE ประมวลการค่า Demand ล่วงหน้าก่อนครบ 15 นาที ช่วยให้ผู้ใช้งานรู้ค่า Demand ที่จะเกิดขึ้นล่วงหน้าและสามารถควบคุมการใช้งานให้เป็นไปตามที่ต้องการได้





EE MDB1_1 -

Time	3/02/2021 14:59:00
Running Hour	0:00:00
Efficiency (%)	0.0
Load (%)	1.0
Energy (KVAH)	1.00
Energy (KWH)	67568.72
Energy (KVarH)	16563.17
Export Energy (KWH)	-1.00
Forecast Kw Demand	128.86
Forecast Kvar Demand	25.32
Power (KVA.)	1200.89
Power (KW.)	1178.50
Power (KVAR)	230.78
Power Factor	0.981
Frequency	50.00
Neutral Current (Amp.)	0.0
Energy (In 15mins)	12.6
Counter (In 15mins)	0.0
Energy/Count (Average)	0.000000
Total Counter	-1.0
Energy/Count	0.000000
Volt Amp K-Factor	
R - TotalHD (%)	2.50 7.50 0.0
S - TotalHD (%)	2.50 7.50 0.0
T - TotalHD (%)	2.50 7.50 0.0
Analog/Temperature Input	
0.00	

SyncStatus Digital Input Digital Output

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

OPC STATUS Print Report

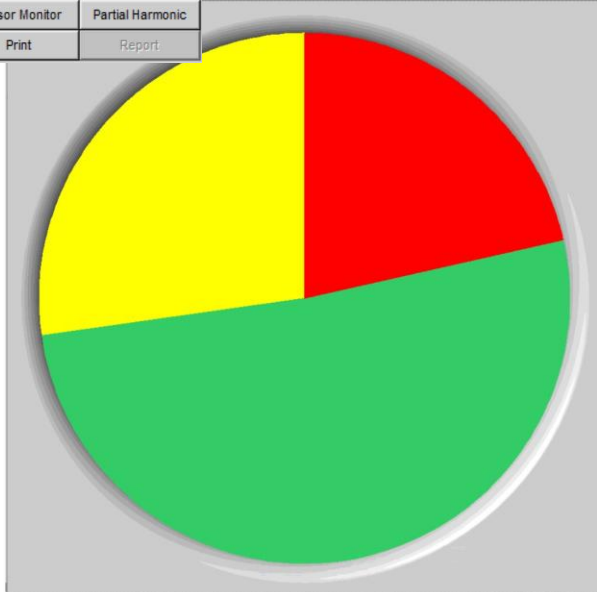
การแสดงผลในรูปแบบ Analog

Date/Time 4/02/2021 14:09:10

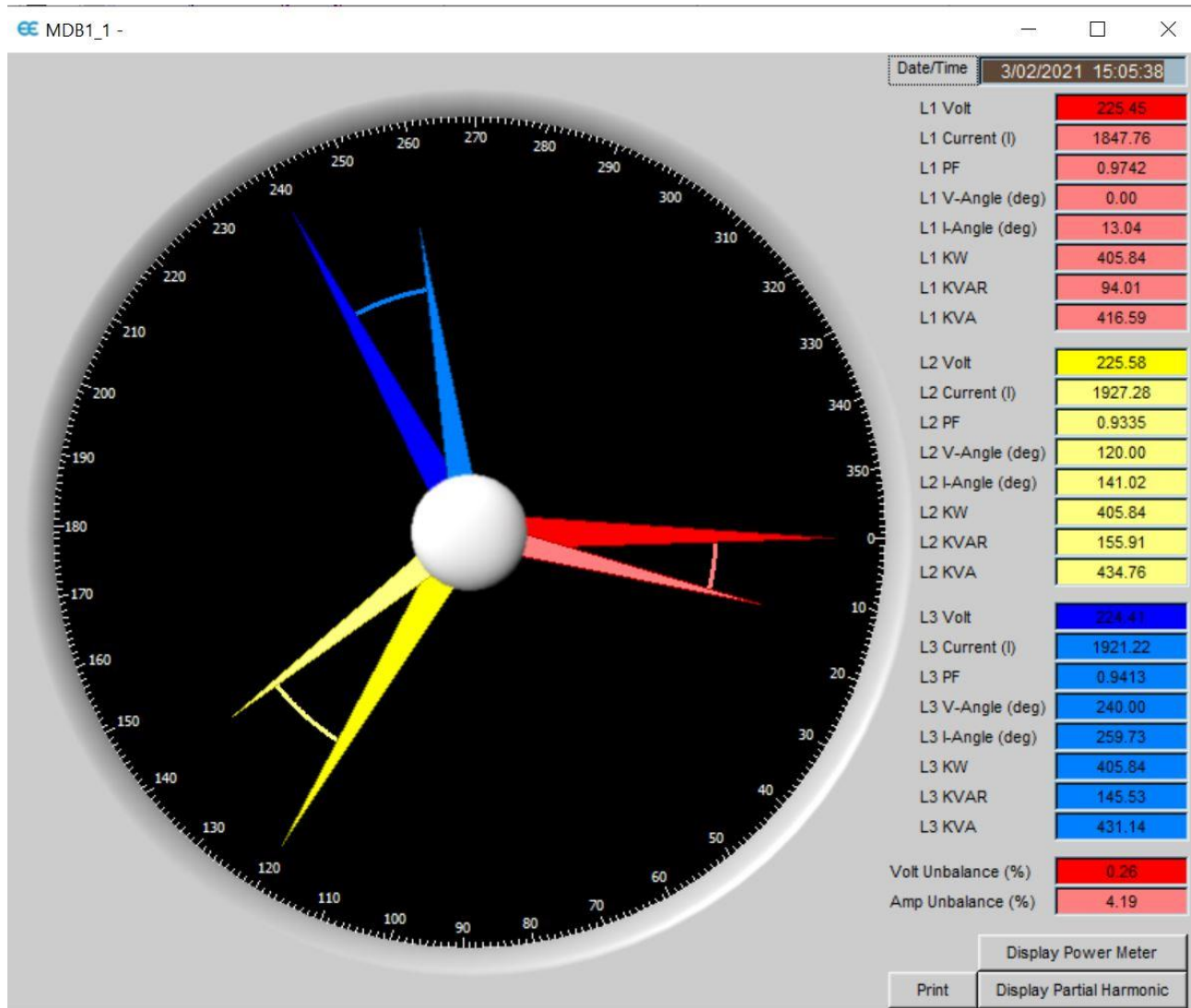
	Value	Percent	PUE
Total	237747.74	100.00	1.000
kWhr of B03	50969.08	21.44	4.665
kWhr of B05	121949.00	51.29	1.950
kWhr of B06	64829.66	27.27	3.667

Print

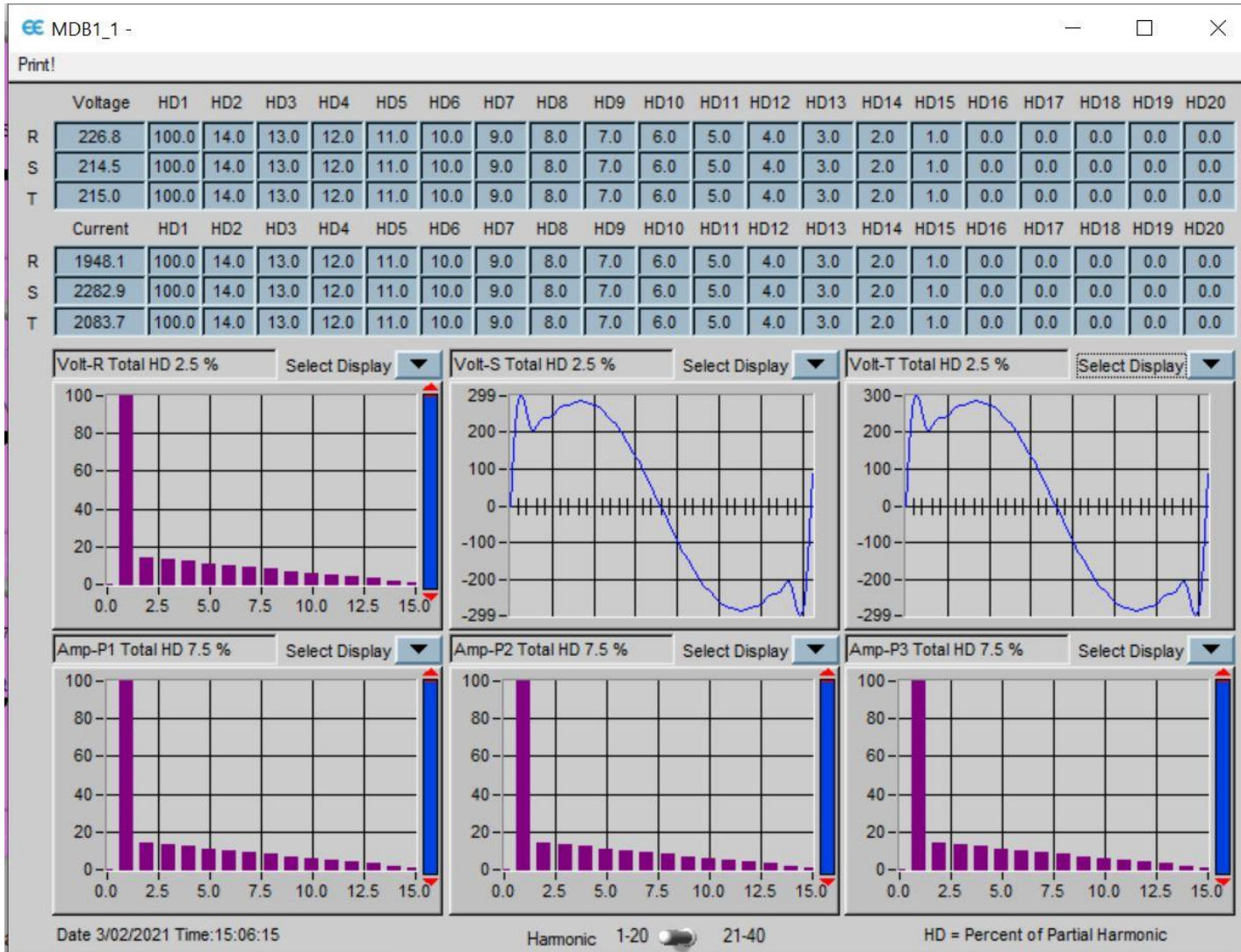
Power/Energy Ratio Monitoring



Phasor Monitoring



แสดงผลในรูปแบบ Harmonics





Water_Meter_7A -

WaterFlow 0.03

WaterFlowRa 0.03

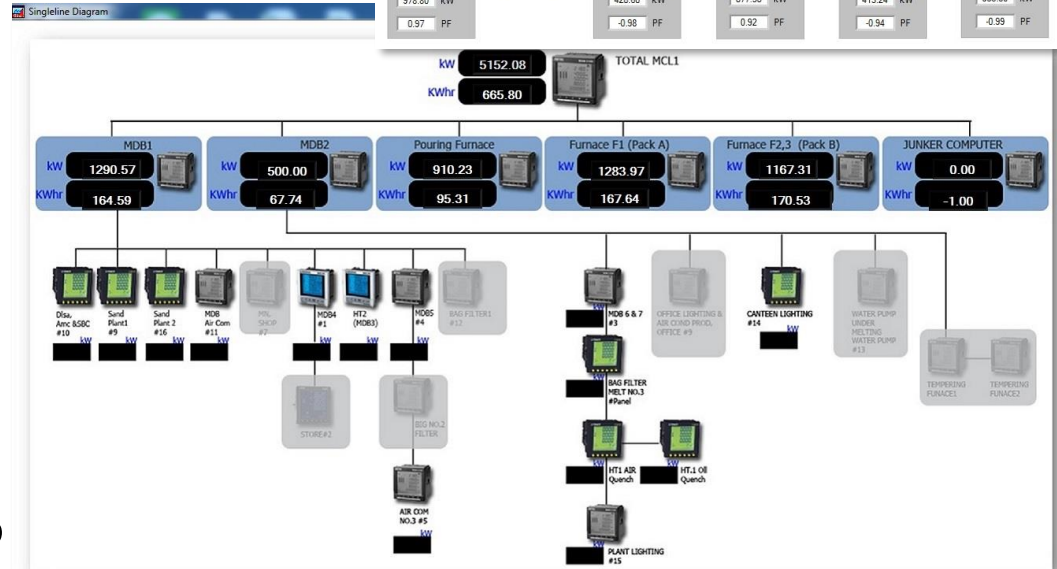
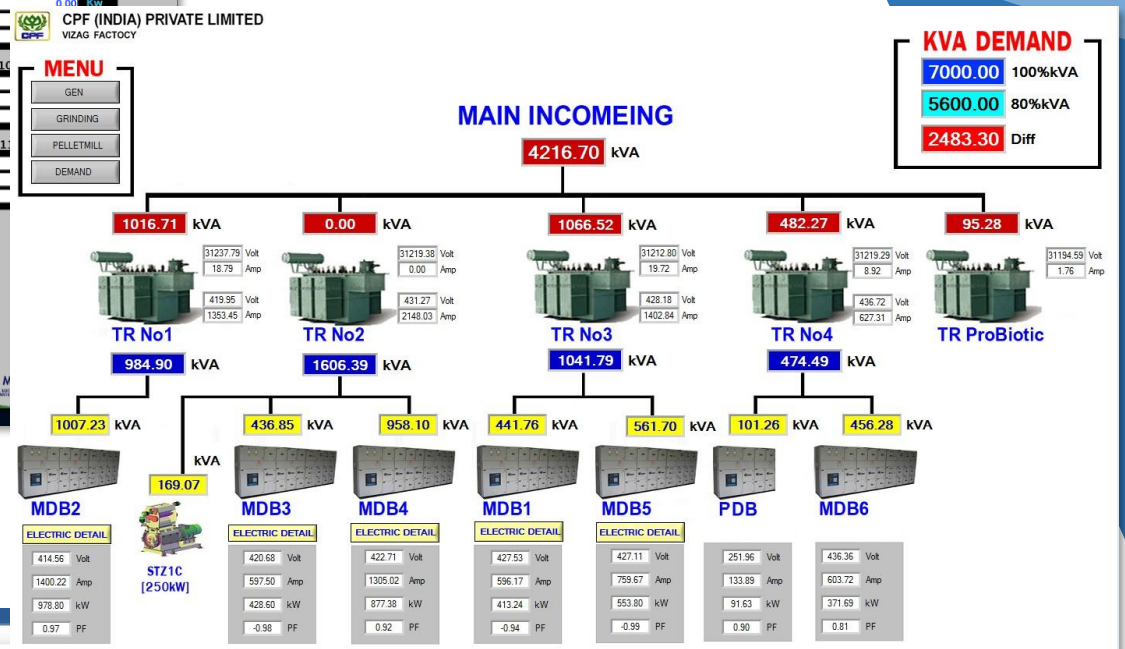
Date and Time
17/02/2022 10:27:19

Digital Input/Output	
Input	Output
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

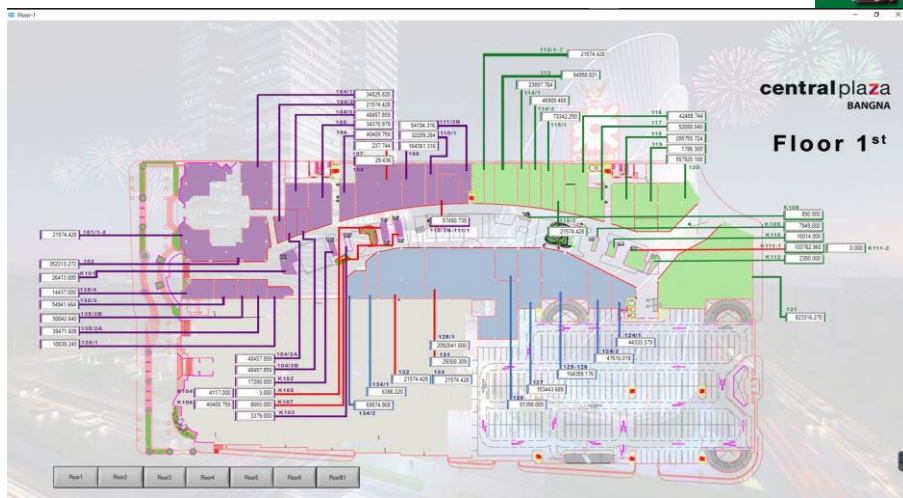
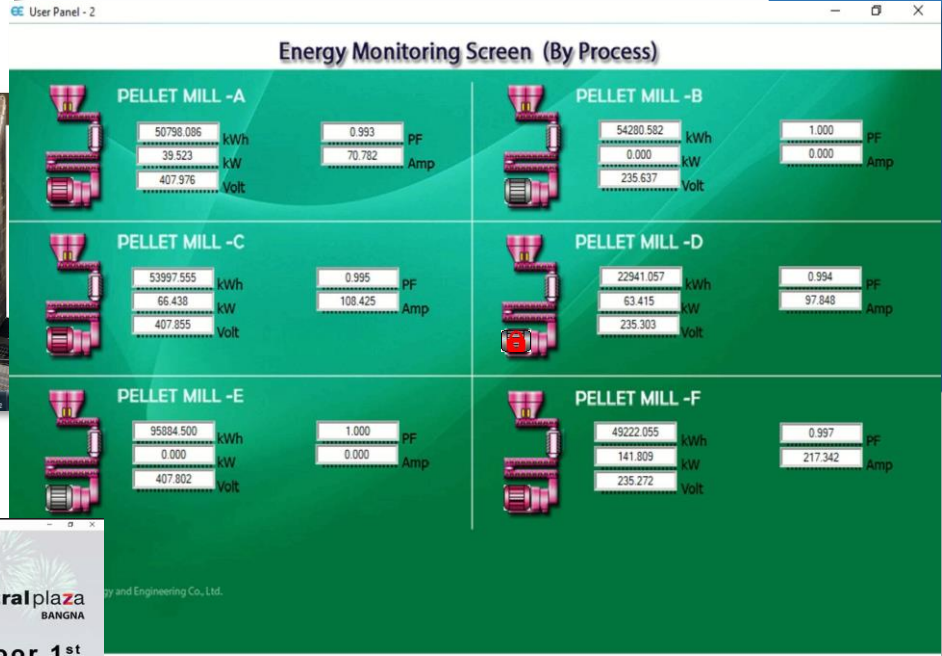
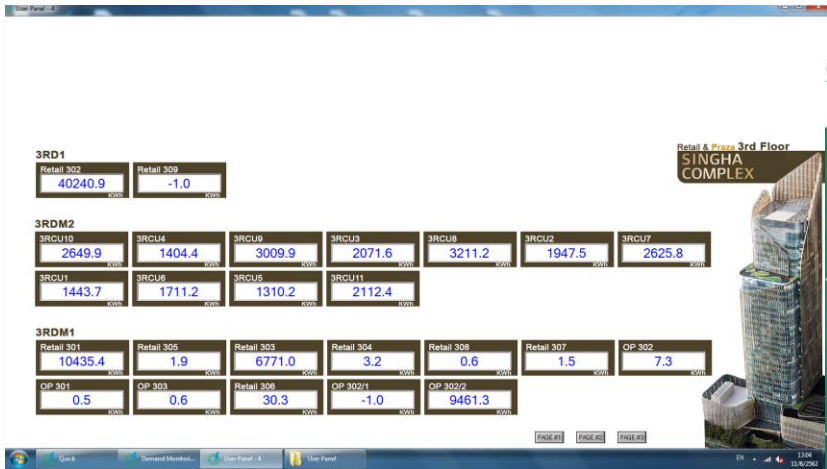
Adjust Counter Multiplier

Print

แสดงผลรูปแบบ User Panel



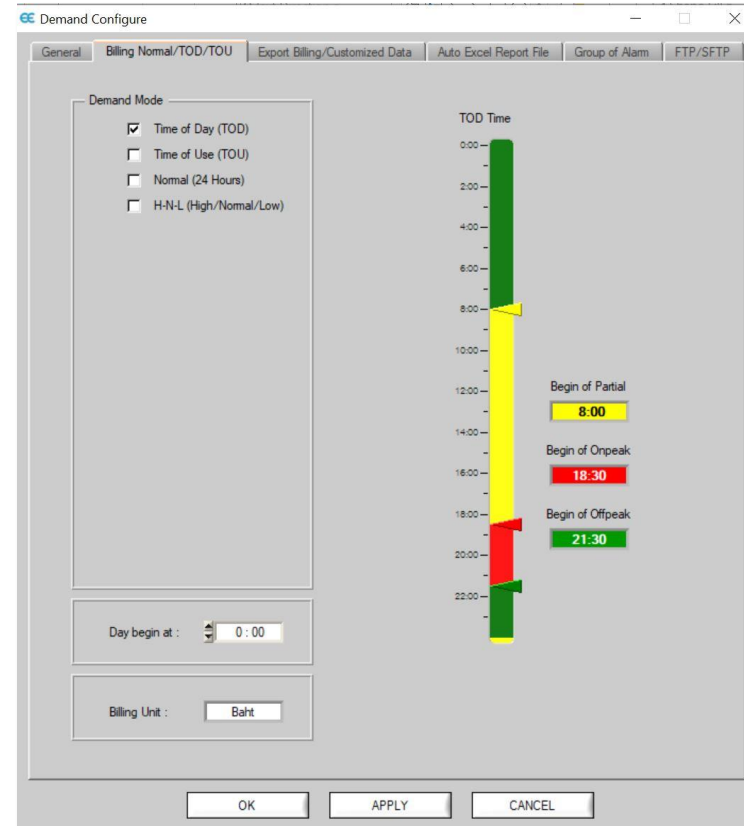
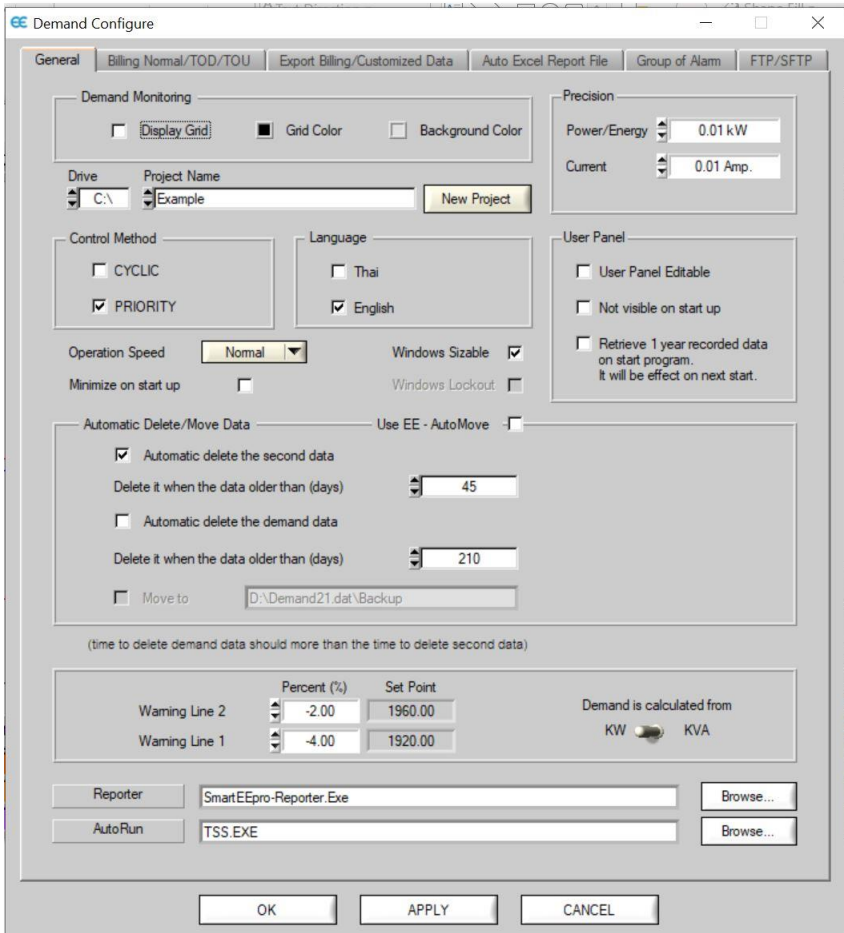
แสดงผลรูปแบบ User Panel

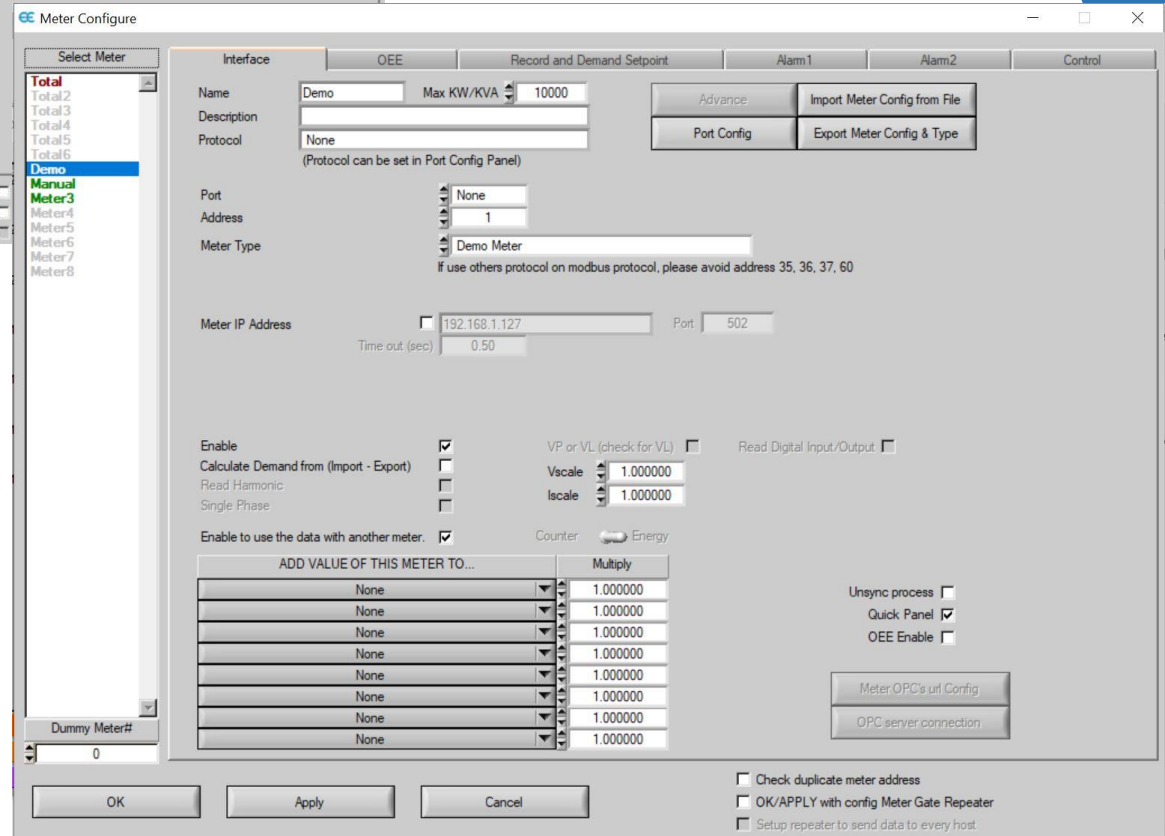
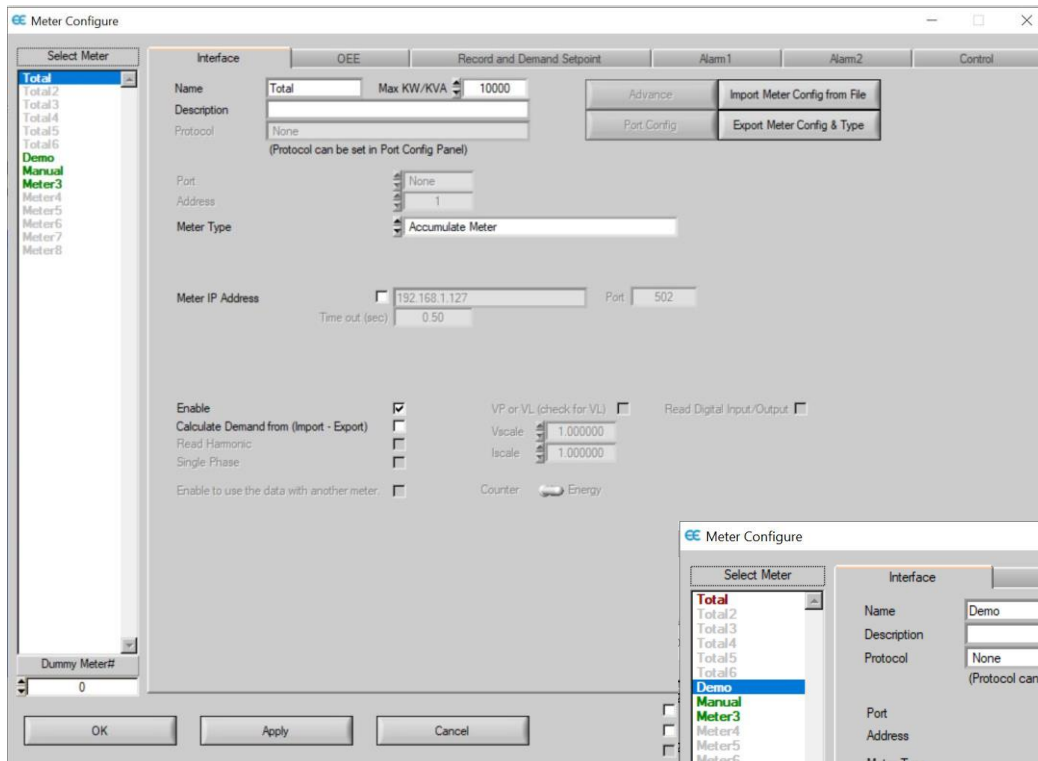


SmartEE สามารถใช้งานได้ทั้งภาษาไทยและภาษาอังกฤษ

สามารถเลือกแสดงผลตามช่วงเวลาการคิดค่าไฟฟ้าได้ อีกทั้งยังสามารถ

ตั้งเวลาการลบข้อมูลอัตโนมัติได้อีกด้วย





สามารถ บวก ลบ คูณ หาร มิเตอร์ในระบบเพื่อ
ทำการจัดกลุ่มค่าต่างๆได้



Meter Configure

Select Meter: Total, Total2, Total3, Total4, Total5, Total6, Demo, Manual, Meter3, Meter4, Meter5, Meter6, Meter7, Meter8

Interface: OEE, Record and Demand Setpoint, Alarm1, Alarm2, Control

Enable monitoring

Enable Alarm for this meter

Power (kW)

Enable	SetPoint1	SetPoint2	DelayTime	#(Count)	Hysteresis	AutoReset	Command	Load	User Message	Alarm	
<input checked="" type="checkbox"/>	VHigh	0.0	+Inf	5	0	0	0	0	uncontrol	0	None
<input checked="" type="checkbox"/>	High	0.0	+Inf	5	0	0	0	0	uncontrol	0	None
<input checked="" type="checkbox"/>	Normal			5	0		uncontrol	0		None	
<input checked="" type="checkbox"/>	Low	0.0	-Inf	5	0	0	0	0	uncontrol	0	None
<input checked="" type="checkbox"/>	VLow	0.0	-Inf	5	0	0	0	0	uncontrol	0	None

Forecast kWDM

Enable	SetPoint1	SetPoint2	DelayTime	#(Count)	Hysteresis	AutoReset	Command	Load	User Message	Alarm	
<input checked="" type="checkbox"/>	VHigh	0.0	+Inf	5	0	0	0	0	uncontrol	0	None
<input checked="" type="checkbox"/>	High	0.0	+Inf	5	0	0	0	0	uncontrol	0	None
<input checked="" type="checkbox"/>	Normal			5	0		uncontrol	0		None	
<input checked="" type="checkbox"/>	Low	0.0	-Inf	5	0	0	0	0	uncontrol	0	None
<input checked="" type="checkbox"/>	VLow	0.0	-Inf	5	0	0	0	0	uncontrol	0	None

Power L1 (kW1)

Enable	SetPoint1	SetPoint2	DelayTime	#(Count)	Hysteresis	AutoReset	Command	Load	User Message	Alarm	
<input checked="" type="checkbox"/>	VHigh	0.0	+Inf	5	0	0	0	0	uncontrol	0	None
<input checked="" type="checkbox"/>	High	0.0	+Inf	5	0	0	0	0	uncontrol	0	None
<input checked="" type="checkbox"/>	Normal			5	0		uncontrol	0		None	
<input checked="" type="checkbox"/>	Low	0.0	-Inf	5	0	0	0	0	uncontrol	0	None
<input checked="" type="checkbox"/>	VLow	0.0	-Inf	5	0	0	0	0	uncontrol	0	None

Power L2 (kW2)

Enable	SetPoint1	SetPoint2	DelayTime	#(Count)	Hysteresis	AutoReset	Command		
<input type="checkbox"/>	VHigh	0.0	+Inf	5	0	0	0	0	uncontrol
<input type="checkbox"/>	High	0.0	+Inf	5	0	0	0	0	uncontrol
<input type="checkbox"/>	Normal			5	0		uncontrol		
<input type="checkbox"/>	Low	0.0	-Inf	5	0	0	0	0	uncontrol
<input type="checkbox"/>	VLow	0.0	-Inf	5	0	0	0	0	uncontrol

Power L3 (kW3)

Enable	SetPoint1	SetPoint2	DelayTime	#(Count)	Hysteresis	AutoReset	Command
<input type="checkbox"/>							

Dummy Meter# 0

Buttons: OK, Apply, Cancel

Options: Check duplicate n, OK/APPLY with c, Setup repeater to

Meter Configure

Select Meter: Total, Total2, Total3, Total4, Total5, Total6, Demo, Manual, Meter3, Meter4, Meter5, Meter6, Meter7, Meter8

Interface: OEE, Record and Demand Setpoint, Alarm1, Alarm2, Control

Enable monitoring

Running (Hour)

Step	SetPoint	Command	Load	User Message	Alarm
Step-1	0.00	uncontrol	0		None
Step-2	0.00	uncontrol	0		None

Digital Input

Enable

Input	Alarm Type	Command	Load	User Message	Alarm
Input 1	No Sound & No Record	uncontrol	0		None
Input 2	No Sound & No Record	uncontrol	0		None
Input 3	No Sound & No Record	uncontrol	0		None
Input 4	No Sound & No Record	uncontrol	0		None
Input 5	No Sound & No Record	uncontrol	0		None
Input 6	No Sound & No Record	uncontrol	0		None
Input 7	No Sound & No Record	uncontrol	0		None
Input 8	No Sound & No Record	uncontrol	0		None
Input 9	No Sound & No Record	uncontrol	0		None
Input 10	No Sound & No Record	uncontrol	0		None
Input 11	No Sound & No Record	uncontrol	0		None
Input 12	No Sound & No Record	uncontrol	0		None
Input 13	No Sound & No Record	uncontrol	0		None
Input 14	No Sound & No Record	uncontrol	0		None
Input 15	No Sound & No Record	uncontrol	0		None
Input 16	No Sound & No Record	uncontrol	0		None

Event

Enable

Event	Alarm Type	Command	Load	User Message	Alarm
CT changing	No Sound & No Record	uncontrol	0		None
PT changing	No Sound & No Record	uncontrol	0		None
Last connection	No Sound & No Record	uncontrol	0		None

Dummy Meter# 0

Buttons: OK, Apply, Cancel

Options: Check duplicate meter address, OK/APPLY with config Meter Gate Repeater, Setup repeater to send data to every host

สามารถเลือกตั้ง Alarm ในแต่ละ parameter ได้

From	Subject	Received
Date: Today		
smarteepro@gmail.com	Factory1: 30/06/2013 9:36:03 System Shutdown.	ร. 30/6/2556 9:36
smarteepro@gmail.com	Factory1: 30/06/2013 9:34:51 System Started.	ร. 30/6/2556 9:35
smarteepro@gmail.com	Factory1: 30/06/2013 9:34:07 Key Module isn't found, Program will be terminated in 2 hours.	ร. 30/6/2556 9:35

Alarm to E-mail Report To E-mail

Demand Setup

General | Billing Normal/TOD/TOU | Export Data | **Alarm to E-mail**

Enable Send All Alarms to E-mail **J**

From/To/Cc Information

From: smarteepro@gmail.com **A** | engineer@company.com

To: channarong@tat.co.th **B** | manager@company.com

Cc: **C**

Subject: Factory1: <message> **D**
<empty subject> = Alarm Message

E-Mail Account

SMTP Server: smtp.gmail.com:587 **F** | mail.company.com

Logon Information

User Name: smarteepro@gmail.com **G**

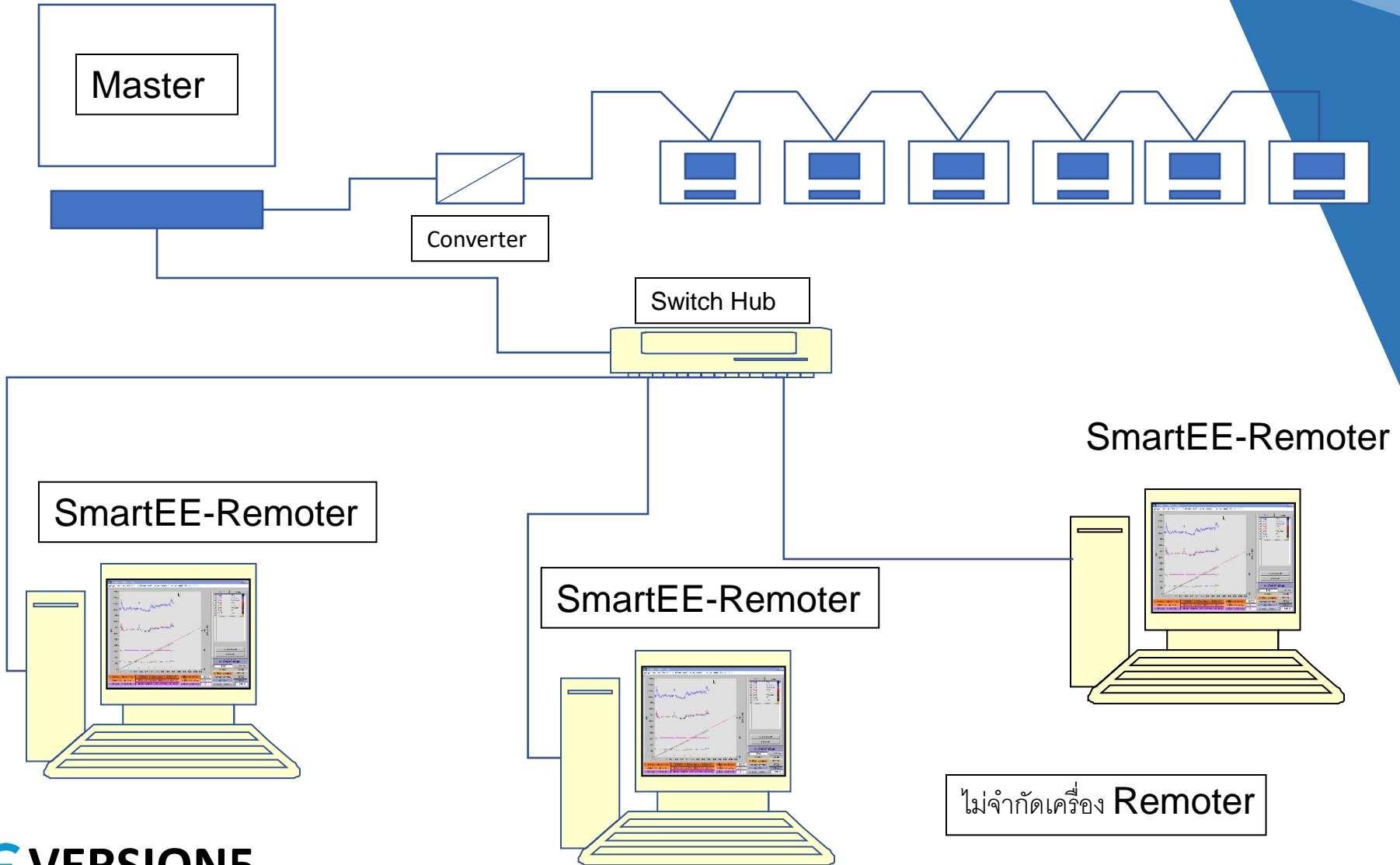
Password: **H**

Copy from Send Mail Panel **I**

OK **K** | APPLY **L** | CANCEL **M**



SmartEE มีโปรแกรม SmartEE Remoter ที่ช่วยให้ผู้ใช้สามารถดูการใช้พลังงานไฟฟ้าผ่านคอมพิวเตอร์ได้ พร้อมกันหลายๆเครื่องโดยไม่จำกัดเครื่องคอมพิวเตอร์



EE VERSION 5

Energy Management Software

SERVICING YOU SINCE 2000



Smart Report



Smart Monitor



Smart Control
OPTIONAL



Smart OEE
OPTIONAL



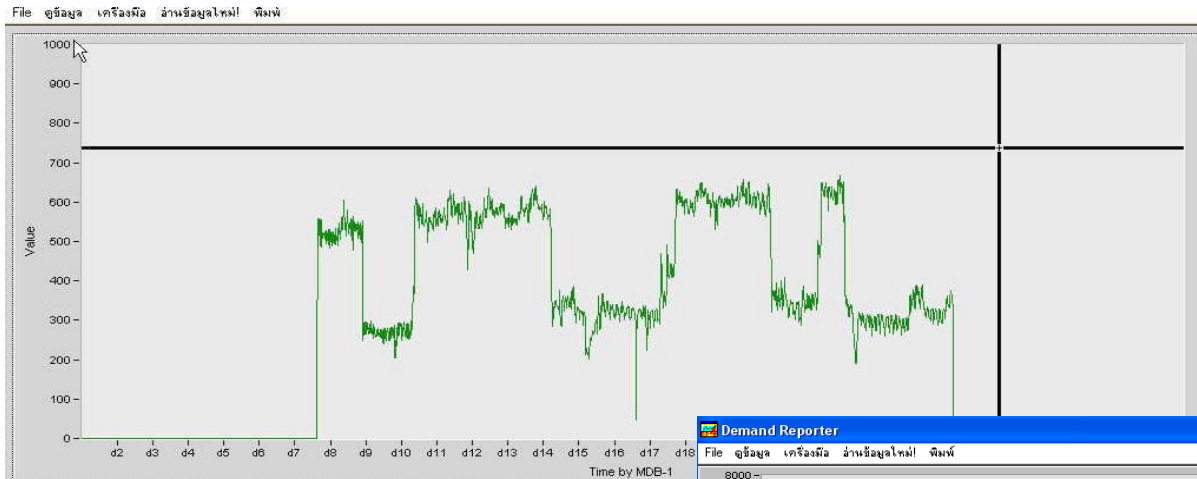
Smart Notify
OPTIONAL



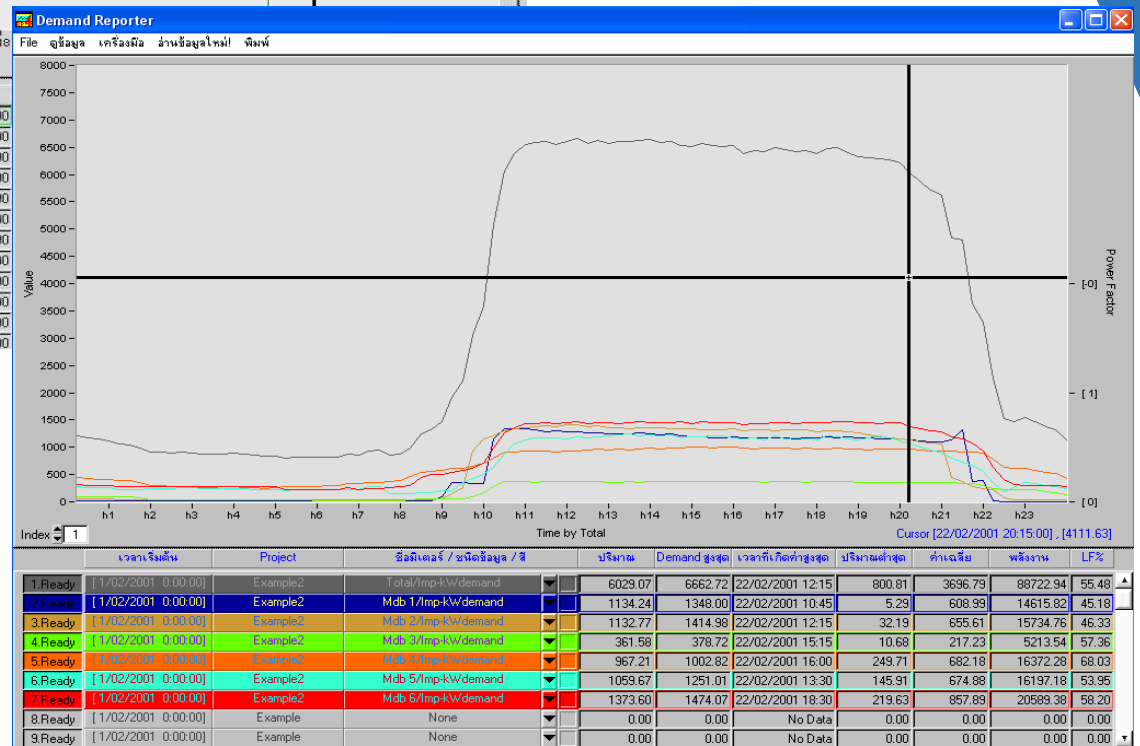
Energy On WEB
OPTIONAL



แสดงค่าการใช้พลังงานทุกวินาที เลือกช่วงเวลาแสดงผลได้ไม่จำกัด รายวัน รายเดือน หรือรายวินาที



Index	เวลาเริ่มต้นหรือข้อมูล	Project	ชื่อมิเตอร์ / ชนิดข้อมูล / ส	ปริมาณ
Ready	[1/01/2000 0:00:00]	Example1	Mdb-1/Imp.Demand	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00
None	[1/08/2005 0:00:00]	Example	None	0.00



Export to Excel



Monthly1-2-20 [Compatibility Mode] - Excel

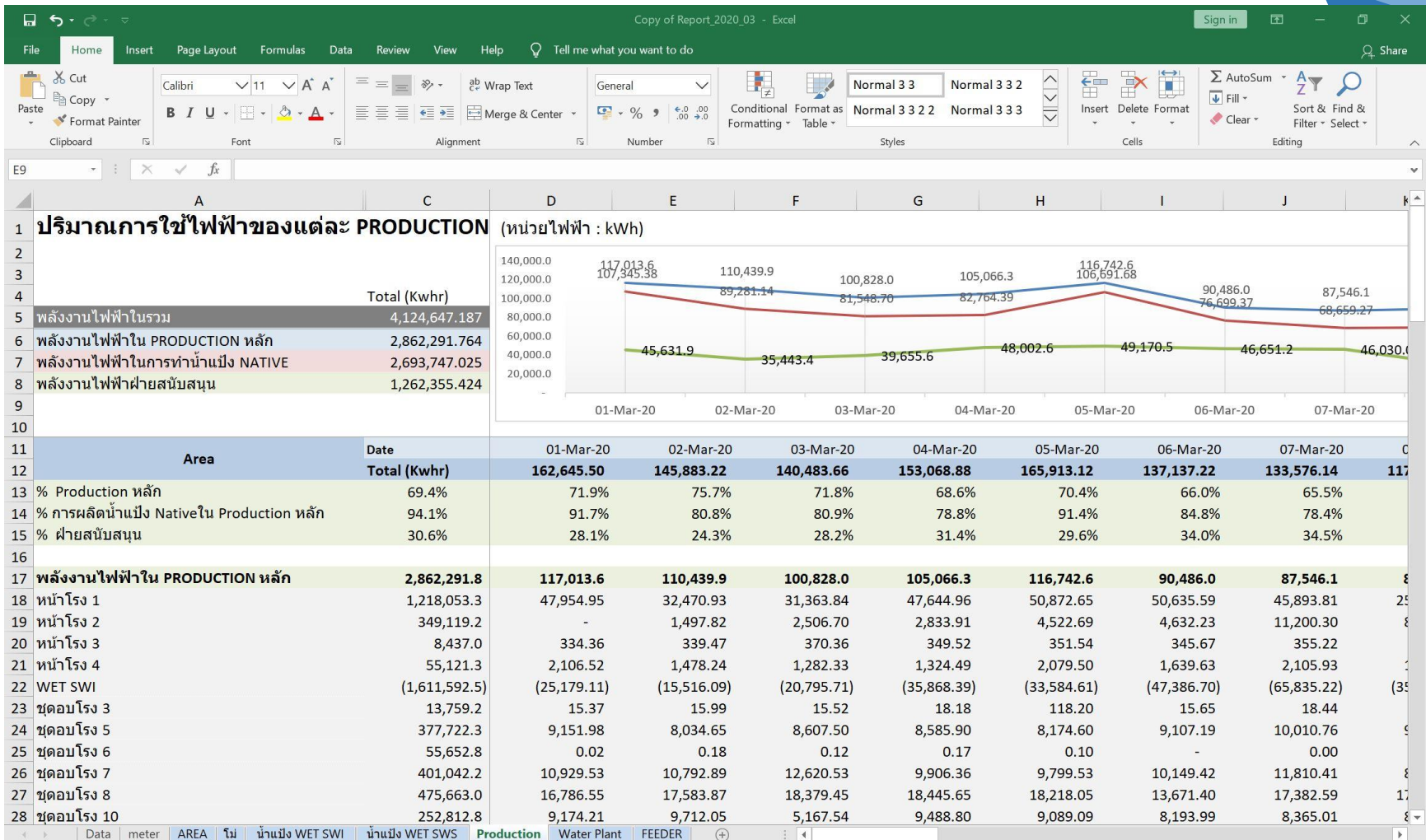
File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

Clipboard Font Alignment Number Styles Cells Editing

C19 $=\text{MATCH}(\text{D19},\text{OFFSET}(\text{data_day1},96*(\$A19-1),\text{D\$1},0,-1))*15/(\text{60*24})+\$B19$

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1				0.00		1.00		2.00		3.00		4.00		5.00		6.00
2		Demand (kw)	SB1_HP_NO3/Imp-kWh_final	SB2_HP_NO1/Imp-kWh_final	SB2_SB1_HP_NO2/Imp-kWh_final	SB2_HP_NO3/Imp-kWh_final	SB3_TR6_LP3/Imp-kWh_fir	SB3_TR6_LP4/Imp-kWh_final	SB4_TR11_LP_NO1/Imp-kWh_fina							
3	1	1 February 2020	2/1/20 0:15 -	1.00	2/1/20 0:15 -	1.00	2/1/20 0:15 -	1.00	2/1/20 0:15 -	1.00	2/1/20 0:15 -	1.00	2/1/20 0:15 -	1.00	2/1/20 0:15 -	1.00
4	2	2 February 2020	2/2/20 0:15 -	1.00	2/2/20 0:15 -	1.00	2/2/20 0:15 -	1.00	2/2/20 0:15 -	1.00	2/2/20 0:15 -	1.00	2/2/20 0:15 -	1.00	2/2/20 0:15 -	1.00
5	3	3 February 2020	2/3/20 0:15 -	1.00	2/3/20 0:15 -	1.00	2/3/20 0:15 -	1.00	2/3/20 0:15 -	1.00	2/3/20 0:15 -	1.00	2/3/20 0:15 -	1.00	2/3/20 0:15 -	1.00
6	4	4 February 2020	2/5/20 0:00	2,117,813.31	2/5/20 0:00	5,122,814.26	2/5/20 0:00	1,130,871.34	2/4/20 14:45	3,704,859.00	2/4/20 0:15 -	1.00	2/5/20 0:00	18,611,067.16	2/4/20 0:15 -	1.00
7	5	5 February 2020	2/6/20 0:00	2,121,757.37	2/6/20 0:00	5,125,310.08	2/6/20 0:00	1,133,616.64	2/5/20 0:15	3,704,859.00	2/5/20 0:15 -	1.00	2/6/20 0:00	18,623,363.26	2/6/20 0:00	5,580,793.78
8	6	6 February 2020	2/7/20 0:00	2,125,692.14	2/7/20 0:00	5,127,763.00	2/7/20 0:00	1,136,723.08	2/6/20 0:15	3,704,859.00	2/6/20 0:15 -	1.00	2/7/20 0:00	18,635,685.74	2/7/20 0:00	5,594,177.93
9	7	7 February 2020	2/8/20 0:00	2,129,620.05	2/8/20 0:00	5,130,180.75	2/8/20 0:00	1,140,025.36	2/7/20 0:15	3,704,859.00	2/7/20 0:15 -	1.00	2/8/20 0:00	18,648,074.01	2/8/20 0:00	5,607,541.85
10	8	8 February 2020	2/9/20 0:00	2,133,550.46	2/9/20 0:00	5,132,596.98	2/9/20 0:00	1,143,356.38	2/8/20 0:15	3,704,859.00	2/8/20 0:15 -	1.00	2/9/20 0:00	18,660,438.01	2/9/20 0:00	5,620,918.62
11	9	9 February 2020	2/10/20 0:00	2,137,482.05	2/10/20 0:00	5,135,004.44	2/10/20 0:00	1,146,774.04	2/9/20 0:15	3,704,859.00	2/9/20 0:15 -	1.00	2/10/20 0:00	18,672,876.56	2/10/20 0:00	5,634,272.00
12	10	10 February 2020	2/11/20 0:00	2,141,416.23	2/11/20 0:00	5,137,406.47	2/11/20 0:00	1,149,971.25	2/10/20 0:15	3,704,859.00	2/10/20 0:15 -	1.00	2/11/20 0:00	18,685,242.34	2/11/20 0:00	5,647,641.58
13	11	11 February 2020	2/12/20 0:00	2,145,343.37	2/12/20 0:00	5,139,805.72	2/12/20 0:00	1,153,212.84	2/11/20 0:15	3,704,859.00	2/11/20 0:15 -	1.00	2/12/20 0:00	18,697,578.21	2/12/20 0:00	5,660,963.39
14	12	12 February 2020	2/13/20 0:00	2,149,267.05	2/13/20 0:00	5,142,195.58	2/13/20 0:00	1,156,729.90	2/12/20 0:15	3,704,859.00	2/12/20 0:15 -	1.00	2/13/20 0:00	18,709,883.28	2/13/20 0:00	5,674,278.93
15	13	13 February 2020	2/14/20 0:00	2,153,199.68	2/14/20 0:00	5,144,551.43	2/14/20 0:00	1,159,873.65	2/13/20 0:15	3,704,859.00	2/13/20 0:15 -	1.00	2/14/20 0:00	18,722,130.62	2/14/20 0:00	5,687,587.37
16	14	14 February 2020	2/15/20 0:00	2,157,132.09	2/15/20 0:00	5,146,883.00	2/15/20 0:00	1,162,900.08	2/14/20 0:15	3,704,859.00	2/14/20 0:15 -	1.00	2/15/20 0:00	18,734,374.59	2/15/20 0:00	5,700,876.77
17	15	15 February 2020	2/16/20 0:00	2,161,062.23	2/16/20 0:00	5,149,204.73	2/16/20 0:00	1,166,224.63	2/15/20 0:15	3,704,859.00	2/15/20 0:15 -	1.00	2/16/20 0:00	18,746,550.20	2/16/20 0:00	5,714,287.60
18	16	16 February 2020	2/17/20 0:00	2,164,999.77	2/17/20 0:00	5,151,498.62	2/17/20 0:00	1,169,336.36	2/16/20 0:15	3,704,859.00	2/16/20 0:15 -	1.00	2/17/20 0:00	18,758,727.36	2/17/20 0:00	5,727,666.48
19	17	17 February 2020	2/18/20 0:00	2,168,931.50	2/18/20 0:00	5,153,795.03	2/18/20 0:00	1,172,684.00	2/17/20 0:15	3,704,859.00	2/17/20 0:15 -	1.00	2/18/20 0:00	18,770,903.20	2/18/20 0:00	5,740,995.21
20	18	18 February 2020	2/18/20 19:30	2,172,091.05	2/18/20 19:30	5,155,593.08	2/18/20 19:30	1,175,547.70	2/18/20 16:45	3,704,939.58	2/18/20 0:15 -	1.00	2/18/20 19:30	18,780,783.24	2/18/20 19:30	5,751,839.66
21	19	19 February 2020	2/19/20 20:30	2,176,231.64	2/19/20 20:30	5,158,080.05	2/19/20 20:30	1,179,096.14	2/19/20 7:30	3,704,939.00	2/19/20 0:15 -	1.00	2/19/20 20:30	18,793,458.78	2/19/20 20:30	5,765,773.10
22	20	20 February 2020	2/20/20 0:15 -	1.00	2/20/20 0:15 -	1.00	2/20/20 0:15 -	1.00	2/20/20 0:15 -	1.00	2/20/20 0:15 -	1.00	2/20/20 0:15 -	1.00	2/20/20 0:15 -	1.00
23	21	21 February 2020	2/21/20 0:15 -	1.00	2/21/20 0:15 -	1.00	2/21/20 0:15 -	1.00	2/21/20 0:15 -	1.00	2/21/20 0:15 -	1.00	2/21/20 0:15 -	1.00	2/21/20 0:15 -	1.00

DemandData Demand Kw/hr Energy by Period (TOD) Energy by Period (TOU) Energy Cost by Period (TOU) Holid...





Smart Report

COST CENTRE	DEPARTMENT	UNIT CONSUMPTION	
		UNIT	AMOUNT
5235102001	FACTORY & ADMIN	1,235	
	- Indian canteen	1,235	
	- Head office	0	
	- Customer room & Guard room	0	
5235102031	RAW MATERIAL		
	- RM-1	3,913	
	- RM-2	6,300	
	- Intake storage-1,2	0	
	- Intake-1	6,679	
	- Intake-2	5,712	
	- Intake-3	0	
	- Intake-4	0	
5235102037	FINISHED GOODS	0	
5235102006	GRINDING	194,115	
	- Fine grinding-1	75,004	
	- Coarse grinding-1	0	
	- Fine grinding-2	102,647	
	- Coarse grinding-2	2,711	
	- Fine grinding-3	0	
	- Coarse grinding-3	0	

READING FROM (1/05/16 TO 31/05/16)

COST CENTRE	DEPARTMENT	UNIT CONSUMPTION	
		UNIT	AMOUNT(Rs.)
5235102008	MIXING		
	- Premix Line		
	- Batching-1A		
	- Mixer-2A		
	- Fishmeal mixing		
	- Mixer-2B		
	- Liquid-1		
	- Batching-1B		
	- Batching-1C		
	- Mixer-2C		
5235102010	PELLETING		
5235102001	FACTORY & ADMIN	1,235	6,175.03
5235102031	RAW MATERIAL	22,604	113,018.85
5235102037	FINISHED GOODS	-	-
5235102006	GRINDING	194,115	970,575.67
5235102008	MIXING	14,110	70,547.91
5235102010	PELLETING	301,516	1,507,579.71
5235102016	PACKING	9,878	49,392.45
5235102066	MAINTENANCE	408	2,041.72
5235102069	BOILER	23,184	115,920.14
5235102018	AIR COMPRESSOR & GENERATOR	94,947	474,735.76
5235102024	SUPER PS	-	-
xxxxxxxxxx	PREMIX PLANT	932	4,659.07
xxxxxxxxxx	CENTRAL LAB	0	0.00
xxxxxxxxxx	CENTRAL PROJECT ENG.	-	-
xxxxxxxxxx	DORMITORY	4,762	23,808.20
TOTAL		1,335,382	3,338,455
Electricity cost and Diesel cost		Electricity cost(From Bill)	Diesel cost(From account)
		6,676,909	
Total production		100,000	
Unit/Ton		13.35	

การคำนวณค่าไฟฟ้าแบบ TOD / TOU / Normal



Normal:Demo

Print Export

Day Report

TAT Energy & Engineering Co.,Ltd. Report of Meter: Demo

1 March 2020

from : 1 March 2020 [0:00] to : 1 April 2020 [0:00]

	kW	Baht/Dm	Baht	Baht/Kwhr	kWhr
1. Demand Cost	None	0.0	196.2600	0.00	0.00
2. Energy Cost	24.00	0	1.7034	0.00	0.00
3. Power Factor	0.0	0.0	14.0200	0.00	0.00
4. Product Counter	0	10.0000	0.00	0.0000	0.0000

29/03/2020 17:45

TOD:Demo

Print Export

Day Report

TAT Energy & Engineering Co.,Ltd. Report of Meter: Demo

1 March 2020

from : 1 March 2020 [0:00] to : 1 April 2020 [0:00]

	kW	Baht/Dm	Baht	Baht/Kwhr	kWhr
1. Demand Cost	None	0.0	285.0500	0.00	0.00
1.1 On Peak	None	0.0	58.8800	0.00	0.00
1.2 Partial Peak	None	0.0	0.0000	0.00	0.00
1.3 Off Peak	None	0.0	0.0000	0.00	0.00
1.4 Total of Demand			0.00	0.00	0.00
2. Energy Cost	3.00	0	1.7034	0.00	0.00
2.1 On Peak	10.50	0	1.7034	0.00	0.00
2.2 Partial Peak			0.00	0.00	0.00
2.3 Off Peak			0.00	0.00	0.00
2.4 Total of Energy			0.00	0.00	0.00
3. Power Factor	0.0	0.0	14.0200	0.00	0.00
4. Product Counter	0	10.0000	0.00	0.0000	0.0000

29/03/2020 18:45

	kWhr	Baht	Baht/Kwhr
13/03/2020 16:00	1408.3	187200.03	22.83
29/03/2020 17:45	1411.8	0.00	0.00
29/03/2020 13:15	187200.03	14.42	228.17

29/03/2020 13:15

TOU:Demo

Print Export

Day Report

TAT Energy & Engineering Co.,Ltd. Report of Meter: Demo

1 March 2020

from : 1 March 2020 [0:00] to : 1 April 2020 [0:00]

	kW	Baht/Dm	Baht	Baht/Kwhr	kWhr
1. Demand Cost	None	0.0	132.9300	0.00	0.00
1.1 On Peak (m-f)	None	0.0	0.0000	0.00	0.00
1.2 Off Peak (m-f)	None	0.0	0.0000	0.00	0.00
1.3 Off Peak (Sa/Su)	None	0.0	0.0000	0.00	0.00
1.4 Total of Demand			0.00	0.00	0.00
2. Import Energy Cost	286.00	8200	22099.38	2.04	244.14
2.1 On Peak (m-f)	242.00	0	0.00	0.00	0.00
2.2 Off Peak (m-f)	24.00	0	1.1914	0.00	0.00
2.3 Off Peak (Sa/Su)	24.00	0	1.1914	0.00	0.00
Total Off Peak	24.00	0	1.1914	0.00	0.00
2.4 Total of Energy	24.00	0	0.00	0.00	0.00
3. Power Factor	0.0	0.0	14.0200	0.00	0.00
4. Export Energy	0	2.6950	0.00	0.00	0.00
4.1 On Peak (m-f)	0	1.1914	0.00	0.00	0.00
4.2 Off Peak (m-f)	0	1.1914	0.00	0.00	0.00
4.3 Off Peak (Sa/Su)	0	1.1914	0.00	0.00	0.00
Total Off Peak	0	1.1914	0.00	0.00	0.00
4.4 Total of Export Energy	0	0.00	0.00	0.00	0.00
5. Product Counter	0	10.0000	0.00	0.0000	0.0000
6. Service charge			228.17		228.17
7. FT (Fuel Adjustment)	0.0000	0.00	0.00	0.00	0.00
8. Total			228.17	0.00	215219.58
9. Value Add Tax		7.0	15.97	0.00	15065.37
10. Grand Total			244.14	0.00	230284.95

29/03/2020 13:15

	kWhr	Baht	Baht/Kwhr
13/03/2020 16:00	1408.3	187200.03	22.83
29/03/2020 17:45	1411.8	0.00	0.00
29/03/2020 13:15	187200.03	14.42	228.17

29/03/2020 13:15

	Counter	Baht	Kwhr/Counter
Estimate Billing -	0	0.00	0.00
Actual Billing	0	444137.61	34.22

Estimate Billing - 29055.73 2.24

Actual Billing - 444137.61 34.22

Comment: The price of demand

Comment:

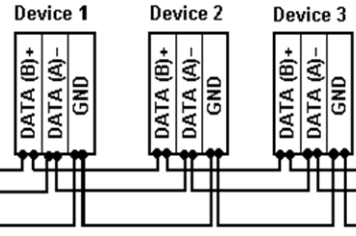
1. OnPeak (m-f) 9:00 - 22:00, Off Peak (m-f) 22:00 - 9:00, Off Peak (sa/su) 0:00 - 24:00
2. If program was shutdown before 22:00, the energy will calculate in rate of Off Peak.
3. Select of 'Energy' = Import - Export will be effect with Demand Value only.

EE VERSION 5

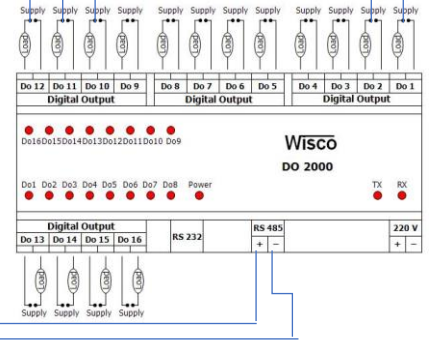
Energy Management Software

SERVICING YOU SINCE 2000





One Twisted Wire Pair plus Ground on to remaining RS-485 Devices





Remote IO



Magnetic

ส่งผ่าน **remote IO** หรือ **PLC** มี **IO** มี **Converter** โปรแกรมจะส่งสัญญาณไปที่ **IO** ส่วน **IO** จะส่งไป **Magnetic IO** ต่อเป็น **Rs485** หน้า **contact** เป็นแค่ สัญญาณ **analog NC NO**



EE Load Configuration

Edit

	Control Mode	CutKw	RunKw	DlyCut	DlyStart	MinCut	MaxCut	MinRun	Operate
Load 1	Demand	30	30	10	20	20	0	60	60
Load 2	Demand	30	30	10	20	20	0	60	60
Load 3	Demand	30	30	10	20				
Load 4	Demand	30	30	10	20				
Load 5	Demand	30	30	10	20				
Load 6	Demand	30	30	10	20				
Load 7	Demand	30	30	10	20				
Load 8	Demand	30	30	10	20				
Load 9	Demand	30	30	10	20				
Load 10	Demand	30	30	10	20				
Load 11	Demand	30	30	10	20				
Load 12	Demand	30	30	10	20				
Load 13	Demand	30	30	10	20				
Load 14	Demand	30	30	10	20				
Load 15	Demand	30	30	10	20				
Load 16	Demand	30	30	10	20				

Legend:
CutKW = Over KW(demand) for load cutting
UnCutKW = Under KW(demand) for re-start the load
DlyCut = Time delay to cutting the next load
DlyStart = Time delay to re-start the next load
MinCut = Minimum time for cutting the load
MaxCut = Maximum time for cutting the load

EE Schedule Programming List

Load #1: Load No.1

Cut: 0:00 MON 1.WEEK(S)

EE Schedule Program by Week

Load #1 Line #2

Weekly Daily

Specific Week

- 1st 7days (1st to 7th)
- 2nd 7days (8th to 14th)
- 3rd 7days (15th to 21th)
- 4th 7days (22th to 28th)
- 5st 7days (29th to End)

MON TUE WED THU FRI SAT SUN

Setting Time

Hour: 0 Minute: 0

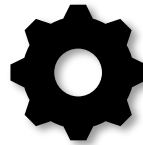
Demand -
UnCut Load (Output off) -
Cut Load (Output on) -

Now Time Add Replace Cancel

EE VERSION 5

Energy Management Software

SERVICING YOU SINCE 2000



**Smart OEE
OPTIONAL**



Smart Monitor



Smart Report



**Smart Control
OPTIONAL**

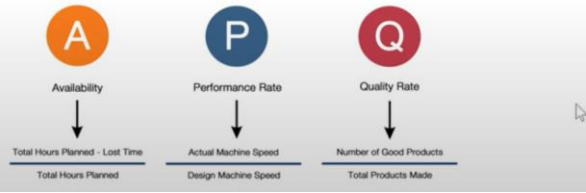
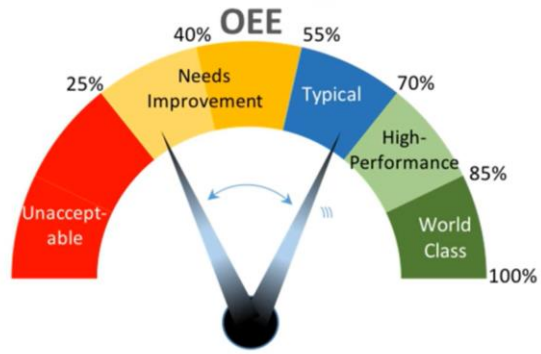


**Smart Notify
OPTIONAL**



**Energy On WEB
OPTIONAL**

OVERALL EQUIPMENT EFFECTIVENESS: OEE



Powered by **€€VERSION5**

90% Availability
95% Performance
98% Quality
85% OEE

%Q
%A
%P

RealTime	List	Value	Min	Max	Average
Energy(kwh)/Product(pcs)		8.28007			
Steam(kg)/Product(pcs)		0.00000			
Water(l)/Product(pcs)		0.00000			
Airflow(cf)/Product(pcs)		0.00000			
%NotLoad		0.00000			
NoOeeAkw		2.00000			
%P		17.00000			
%A		2.00000			
%Q		34.13514			
TargetInput		34.13514			
Product(pcs)		100.00000			
Defects(pcs)		100.00000			
Energy(kwh)		4.73958			
Power(kw)		1.61266			
Steam(kwh)		0.00000			
Water(kwh)		0.00000			
Airflow(kwh)		0.00000			
kw1		13.92542			
kw2		0.00000			
Amp2		0.90422			
Amp3		1.94238			
Temp1		21.33584			
Temp2		21.33584			
Temp3		21.33584			
Data10		38.13848			
Data11		229.35867			
Data12		231.14160			

ประมวลค่าพลังงาน
พร้อมคำนวณประสิทธิภาพ OEE
รายงาน onweb แบบ real time

Digital Power Meter
Digital Flow Meter (Stream/Water/Gas etc.)
Counter Meter
PLC I/O

แก๊ส | น้ำ | ลม | ไฟ | วัตถุการไหล | นับผลิตภัณฑ์ | PLC I/O และอื่น ๆ
*Modbus Protocol

วัดประสิทธิภาพการผลิตแบบ Real Time ด้วย

SmartEE

- OEE
- %No load
- Energy/product
- Steam/product
- Water/product
- Air/product
- Event notify on Line





REAL TIME ENERGY MONITORING

DEMAND		
TARGET	2000.000	kw.
ACTUAL	1348.486	kw.
DIFF.	651.514	kw.

PELLET 1

66.6	69.0	90.0	93.7
%OEE	%P	%Q	%A
4.00 TON.		0.00 TON.	
TARGET PRODUCTION		ACTUAL PRODUCTION	

PELLET 2

64.0	80.0	89.0	90.0
%OEE	%P	%Q	%A
8.30 TON.		0.00 TON.	
TARGET PRODUCTION		ACTUAL PRODUCTION	

PELLET 3

72.3	81.5	92.0	96.5
%OEE	%P	%Q	%A
7.50 TON.		0.00 TON.	
TARGET PRODUCTION		ACTUAL PRODUCTION	

HAMMERMILL 1

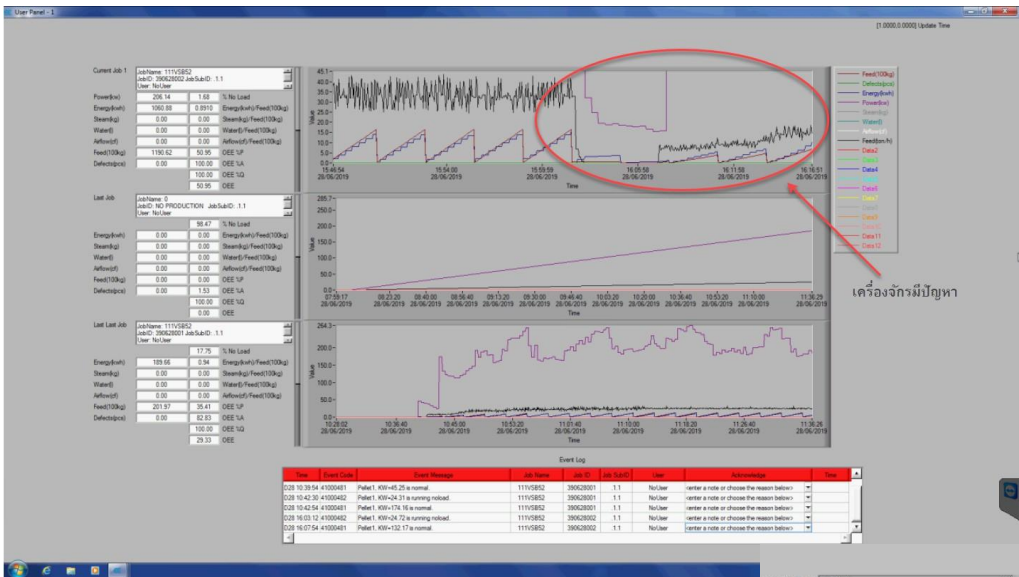
81.4	92.5	95.0	95.7
%OEE	%P	%Q	%A
0.10 TON.		0.00 TON.	
TARGET PRODUCTION		ACTUAL PRODUCTION	

HAMMERMILL 2

70.5	89.1	87.0	91.0
%OEE	%P	%Q	%A
4.00 TON.		0.00 TON.	
TARGET PRODUCTION		ACTUAL PRODUCTION	

HAMMERMILL 3

87.4	98.0	93.0	96.0
%OEE	%P	%Q	%A
0.10 TON.		0.00 TON.	
TARGET PRODUCTION		ACTUAL PRODUCTION	



เครื่องจักรมีปัญหา

Search for chats and messages

KKU-SME-01 SmartEE@KKU JobName: 20190227

KKU-SME-07 SmartEE@KKU JobName: 20190227

KKU-SME-09 SmartEE@KKU JobName: 20190227

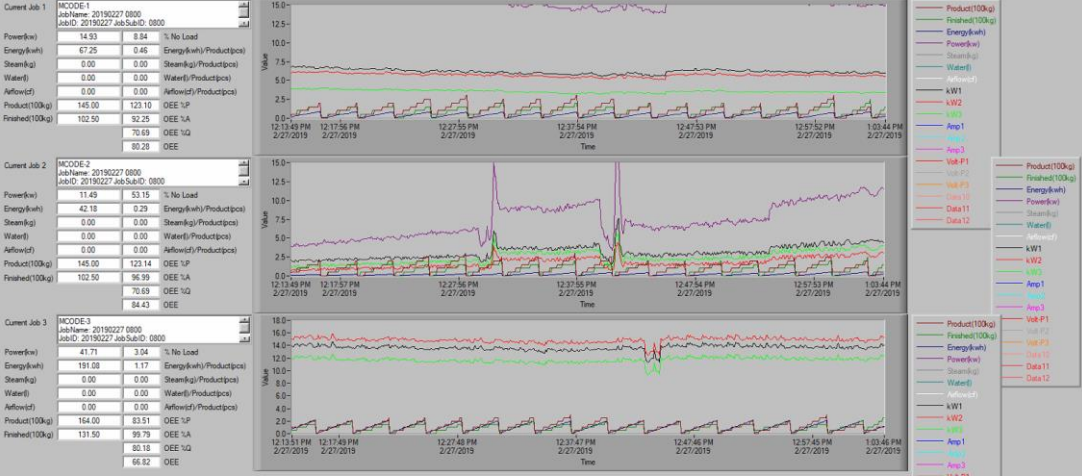
KKU-SME-10 SmartEE@KKU JobName: 20190227

KKU-SME-08 SmartEE@KKU JobName: 20190227

KKU-SME-02 SmartEE@KKU JobName: 20190227

KKU-SME-05 SmartEE@KKU TimeValue:435

SmartEE@KKU Fac5: MCODE-3
JobName: 20190228 0800
JobID: 20190228 JobSubID: 0800
User: ByShift1
Product(100kg): 69.50
Finished(100kg): 45.00
Power(kw): 40.27 kw
Energy(kwh): 66.25 kwh
Energy(kwh)/Product(pcs): 0.95
OEE: 36.55
OEE %P: 69.40
OEE %A: 81.35
OEE %Q: 64.75
%NoLoad: 19.76
kW1: 13.57
kW2: 14.86
kW3: 11.84
Amp1: 68.00
Amp2: 70.04
Amp3: 63.63
Volt-P1: 228.64
Volt-P2: 236.01
Volt-P3: 232.14
Data10: 0.00
Data11: 0.00



OPTIONAL
To Line Application

LINE Notify SmartEE@KKU Fac5: EventLog:...

EE VERSION 5

Energy Management Software

SERVICING YOU SINCE 2000



Smart Notify
OPTIONAL



Smart Monitor



Smart Report



Smart Control
OPTIONAL



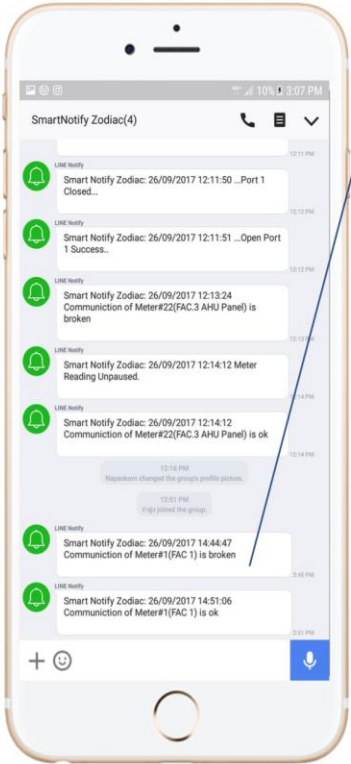
Smart OEE
OPTIONAL



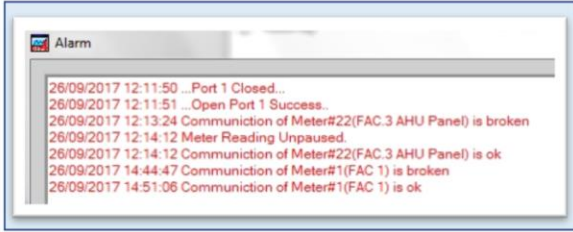
Energy On WEB
OPTIONAL



Smart Alarm to Line Application Notify



LINE Alarm



SmartEE Alarm





Search for chats and m

EE KKU-SME-01 SmartEE@KKU JobName: 2019

EE KKU-SME-07 SmartEE@KKU JobName: 2019

EE KKU-SME-09 SmartEE@KKU JobName: 2019

EE KKU-SME-10 SmartEE@KKU JobName: 2019

EE KKU-SME-08 SmartEE@KKU JobName: 2019

EE KKU-SME-02 SmartEE@KKU

EE KKU-SME-05 SmartEE@KKU TimeValue:435

EE KKU-SME-05 โกลคาวาลลิทิมัล 10

SmartEE@KKU Fac5: MCODE-3
JobName: 20190228 0800
JobID: 20190228 JobSubID: 0800
User: ByShift1
Product(100kg): 69.50
Finished(100kg): 45.00
Power(kw): 40.27 kw
Energy(kwh): 66.25 kwh
Energy(kwh)/Product(pcs): 0.95
OEE: 36.55
OEE %P: 69.40
OEE %A: 81.35
OEE %Q: 64.75
%NoLoad: 19.76
kW1: 13.57
kW2: 14.86
kW3: 11.84
Amp1: 68.00
Amp2: 70.04
Amp3: 63.63
Volt-P1: 228.64
Volt-P2: 236.01
Volt-P3: 232.14
Data10: 0.00
Data11: 0.00

LINE Notify SmartEE@KKU Fac5: EventLog:...

Smart Notify

To Line Application

Current Job 1	MCODE-1 JobName: 20190227 0800 JobID: 20190227 JobSubID: 0800		
Power(kw)	14.93	8.84	% No Load
Energy(kwh)	67.25	0.46	Energy(kwh)/Product(pcs)
Steam(kg)	0.00	0.00	Steam(kg)/Product(pcs)
Water(l)	0.00	0.00	Water(l)/Product(pcs)
Airflow(cf)	0.00	0.00	Airflow(cf)/Product(pcs)
Product(100kg)	145.00	123.10	OEE %P
Finished(100kg)	102.50	92.25	OEE %A
		70.69	OEE %Q
		80.28	OEE
Current Job 2	MCODE-2 JobName: 20190227 0800 JobID: 20190227 JobSubID: 0800		
Power(kw)	11.49	53.15	% No Load
Energy(kwh)	42.18	0.29	Energy(kwh)/Product(pcs)
Steam(kg)	0.00	0.00	Steam(kg)/Product(pcs)
Water(l)	0.00	0.00	Water(l)/Product(pcs)
Airflow(cf)	0.00	0.00	Airflow(cf)/Product(pcs)
Product(100kg)	145.00	123.14	OEE %P
Finished(100kg)	102.50	96.99	OEE %A
		70.69	OEE %Q
		84.43	OEE
Current Job 3	MCODE-3 JobName: 20190227 0800 JobID: 20190227 JobSubID: 0800		
Power(kw)	41.71	3.04	% No Load
Energy(kwh)	191.08	1.17	Energy(kwh)/Product(pcs)
Steam(kg)	0.00	0.00	Steam(kg)/Product(pcs)
Water(l)	0.00	0.00	Water(l)/Product(pcs)
Airflow(cf)	0.00	0.00	Airflow(cf)/Product(pcs)
Product(100kg)	164.00	83.51	OEE %P
Finished(100kg)	131.50	99.79	OEE %A
		80.18	OEE %Q
		66.82	OEE

EE VERSION 5

Energy Management Software

SERVICING YOU SINCE 2000



**Energy On WEB
OPTIONAL**



Smart Monitor



Smart Report



**Smart Control
OPTIONAL**



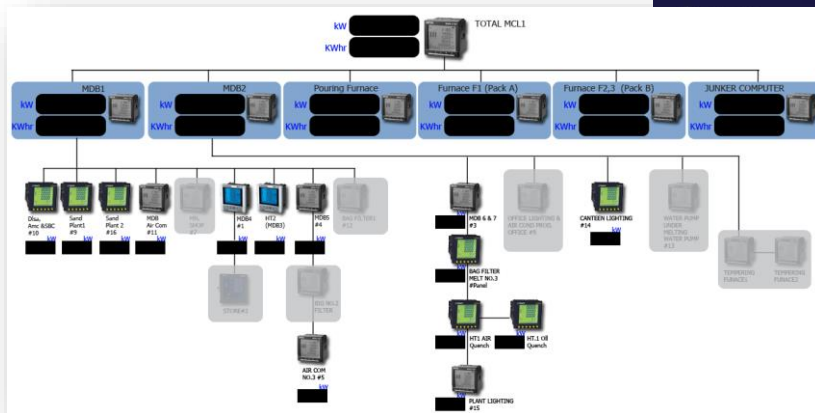
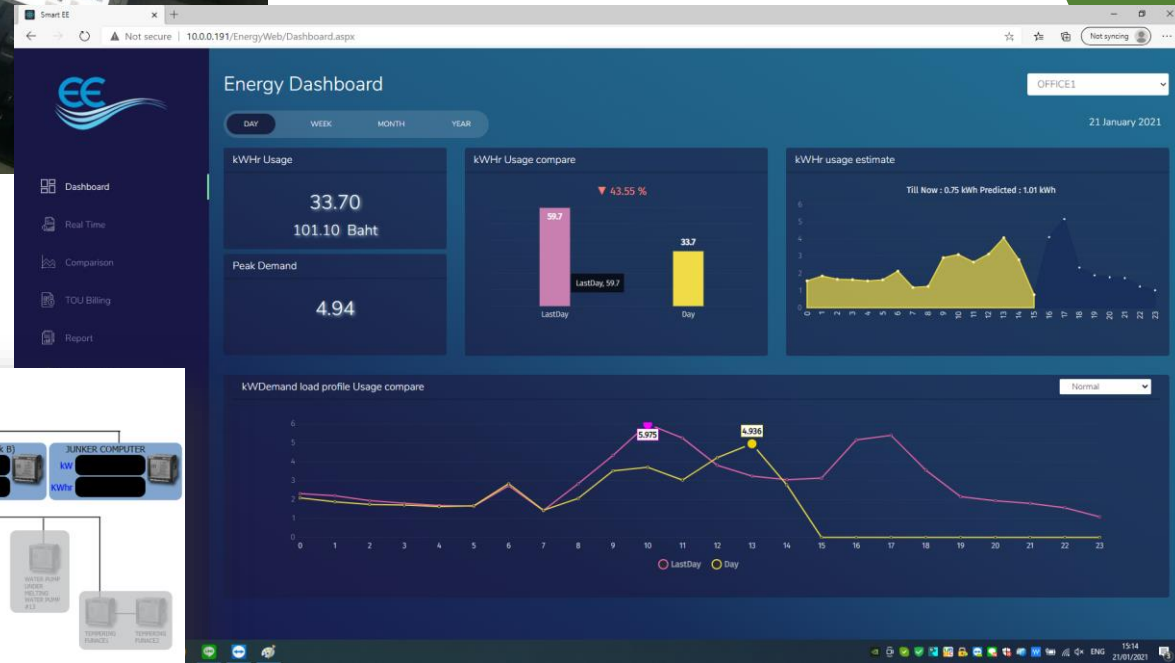
**Smart OEE
OPTIONAL**



**LINE Notify
OPTIONAL**



การแสดงผลผ่านเว็บ optional



การแสดงผลผ่านเว็บ optional



CPV AGRO FEED

MACHINE VIEW

GRAPH VIEW

DONG NAI FEED MILL

Go!

ENERGY MACHINE MONITORING ONLINE

Energy Monitoring Screen (By Process)

- HAMMERMILL-1**: 21.19 kW, 139.00 Volt, 48.97 Amp, 0.65 PF
- HAMMERMILL-2**: 0.00 kW, 139.30 Volt, 0.15 Amp, 0.51 PF
- HAMMERMILL-3**: 0.22 kW, 139.67 Volt, 0.17 Amp, 0.51 PF
- HAMMERMILL-4**: 0.00 kW, 139.00 Volt, 0.00 Amp, 0.00 PF
- HAMMERMILL-5**: 0.00 kW, 139.00 Volt, 0.00 Amp, 0.00 PF

Powered by TAT Energy and Engineering Co., Ltd.

C. P. Vietnam Corporation (Binh Duong Feed Mill)

Chart Type: Bar Chart | Line Chart | Meter: TAT | Mode: User define

Category: Power | Energy | Date: 04 September 2015 | Period of Time: Daily | Measure Unit: Minute

Chart Width: 1200 px | Chart Height: 400 px

Energy Usage
Daily Power at 04 September 2015 of TAT
Max : 516.7597046

Legend: Off Peak (Green), Partial Peak (Yellow), On Peak (Red)

TAT Energy Engine

Chart Type: Bar Chart | Line Chart | Meter: TAT

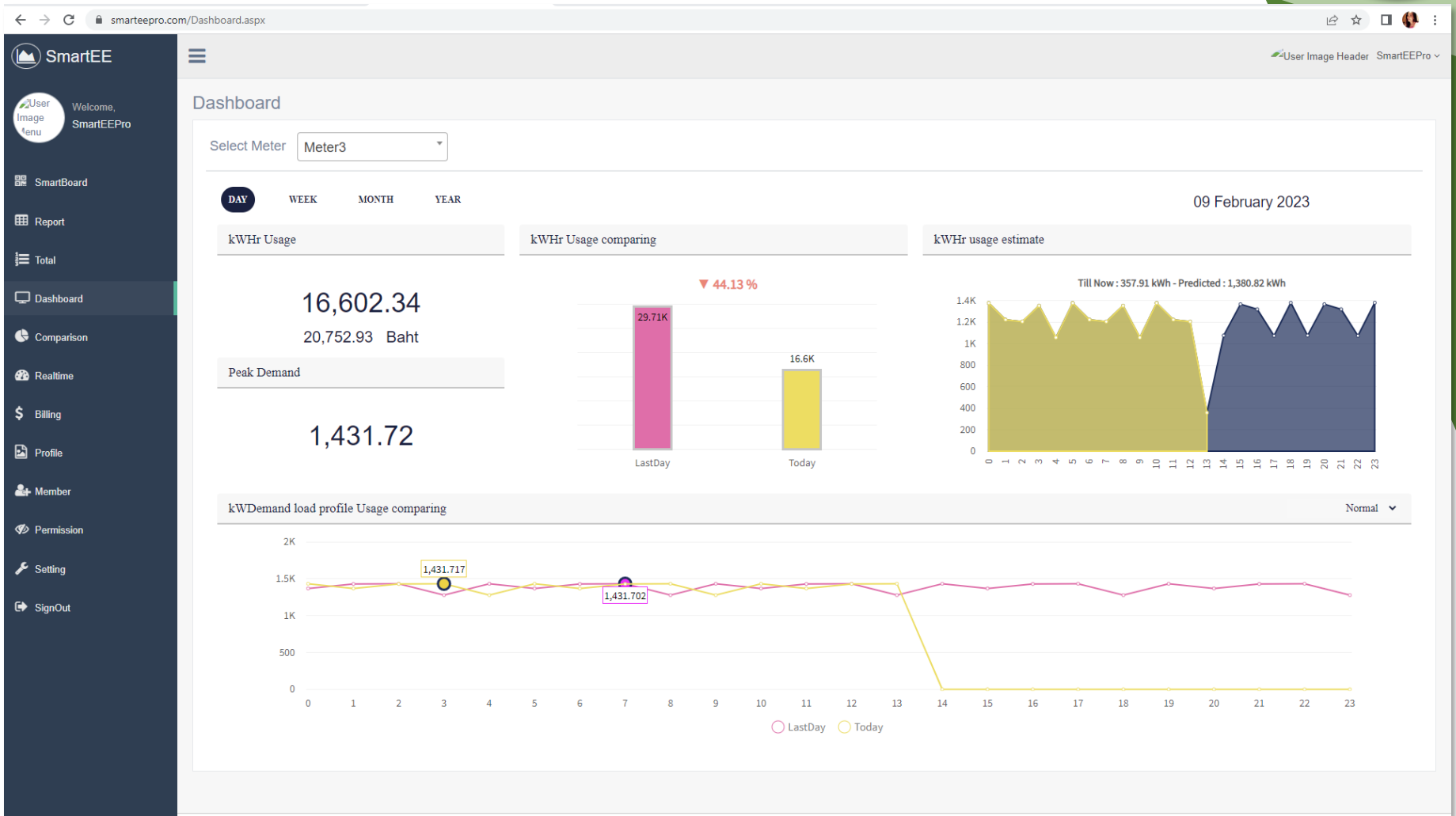
Category: Power | Energy | Date: 04 June 2017

Chart Width: 1200 px | Chart Height: 400 px

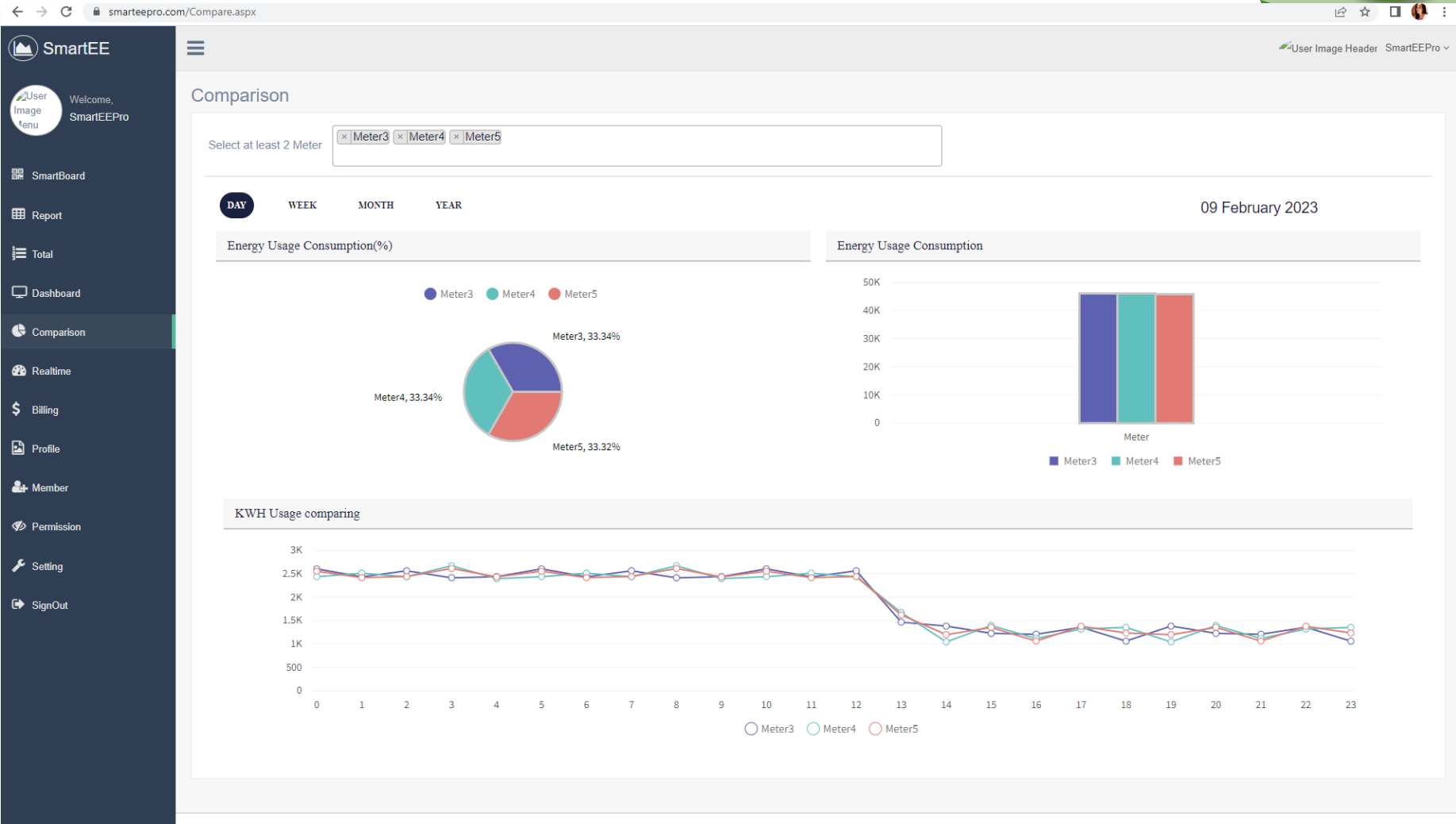
Energy Usage
4 June 2017 of Steam_PL3
Sum : 16,384.0

Category	kwh	%
On Peak	0.00	0.00
Partial Peak	16,384.00	50.00
Off Peak	16,384.00	50.00

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Browser address bar: smarteepro.com/Realtime.aspx

SmartEE Logo | User Image Header | SmartEEPro

Realtime

Select Multiple Upto 16 Meter

Meter	Kwh	LastKwDemand	Amp	Pf	Volt	kVAR
Meter3	3779361.61	1438.29	1762.86	0.98	228.42	236.68
Meter4	3953831.81	1140.29	1862.22	0.98	220.33	213.61
Meter5	3777279.66	1366.95	2375.80	0.97	217.03	384.97

Realtime data cards for Meter3, Meter4, and Meter5. Each card displays a donut chart showing the current power consumption in Kw. Meter3: 1221.06 Kw, Meter4: 1214.78 Kw, Meter5: 1524.68 Kw. Additional metrics include Amp, Pf, Volt, and kVAR for each meter.

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SmartEE User Image Header SmartEEPro

Report

Select Meter: Meter3 09/02/2023 - 09/02/2023

Copy CSV Excel PDF Print Search:

Times	Meter	kW	kW-Demand	kWh	VoltL-avr	Amp-avr	PF
2023-02-09 13:15	Meter3	1,177.25	1,315.26	3,779,376.96	373.43	1,859.80	0.98
2023-02-09 13:00	Meter3	1,428.67	1,431.65	3,779,289.28	382.02	2,328.10	0.97
2023-02-09 12:45	Meter3	1,364.40	1,428.88	3,778,931.37	387.17	2,021.15	0.97
2023-02-09 12:30	Meter3	1,444.44	1,364.37	3,778,574.15	379.01	2,262.24	0.97
2023-02-09 12:15	Meter3	1,285.17	1,263.44	3,778,233.05	383.34	2,073.38	0.98
2023-02-09 12:00	Meter3	1,015.06	766.84	3,777,917.19	375.69	1,681.89	0.97
2023-02-09 11:45	Meter3	723.61	921.56	3,777,725.48	382.75	1,165.49	-1.00
2023-02-09 11:30	Meter3	909.10	1,277.02	3,777,495.09	371.24	1,470.61	0.97
2023-02-09 11:15	Meter3	1,495.62	1,326.49	3,777,175.84	378.32	2,336.83	0.97
2023-02-09 11:00	Meter3	1,306.49	1,368.25	3,776,844.21	374.26	2,146.54	0.96
2023-02-09 10:45	Meter3	1,458.94	1,288.37	3,776,502.15	372.03	2,429.01	0.97
2023-02-09 10:30	Meter3	1,428.67	1,431.66	3,776,180.06	377.24	2,236.10	0.97
2023-02-09 10:15	Meter3	1,364.40	1,428.85	3,775,822.15	381.24	2,131.32	0.97
2023-02-09 10:00	Meter3	1,444.44	1,364.42	3,775,464.93	379.46	2,214.09	0.97
2023-02-09 09:45	Meter3	1,285.17	1,263.40	3,775,123.83	378.77	2,045.37	0.98
2023-02-09 09:30	Meter3	1,015.06	766.83	3,774,807.98	374.78	1,575.55	0.97
2023-02-09 09:15	Meter3	723.61	921.59	3,774,616.27	375.53	1,084.93	-1.00
2023-02-09 09:00	Meter3	909.10	1,276.98	3,774,385.87	381.29	1,402.71	0.97
2023-02-09 08:45	Meter3	1,495.62	1,326.50	3,774,066.63	385.50	2,301.94	0.97
2023-02-09 08:30	Meter3	1,306.49	1,368.31	3,773,735.00	385.82	1,966.34	0.96
2023-02-09 08:15	Meter3	1,458.94	1,288.32	3,773,392.92	382.31	2,290.91	0.97
2023-02-09 08:00	Meter3	1,428.67	1,431.67	3,773,070.84	382.51	2,229.66	0.97
2023-02-09 07:45	Meter3	1,364.40	1,428.85	3,772,712.93	379.66	2,210.34	0.97
2023-02-09 07:30	Meter3	1,444.44	1,364.42	3,772,355.72	385.43	2,200.35	0.97
2023-02-09 07:15	Meter3	1,285.17	1,263.42	3,772,014.61	385.24	1,951.43	0.98
2023-02-09 07:00	Meter3	1,015.06	766.82	3,771,698.76	381.06	1,579.83	0.97
2023-02-09 06:45	Meter3	723.61	921.56	3,771,507.05	377.65	1,124.11	-1.00

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← → ↻ smarteepro.com/Billing.aspx 🔍 ☆ 🏠 👤 ⋮

SmartEE ☰ User Image Header SmartEEPro ▾

User Image Welcome, SmartEEPro

SmartBoard

Report

Total

Dashboard

Comparison

Realtime

Billing

Profile

Member

Permission

Setting

SignOut

Billing

Select Meter 09/02/2023 - 09/02/2023

Billing of Demo on 09/02/2023 - 09/02/2023 (TOU Rate)

Item	Amount	Baht/Unit	Total
1.On Peak Energy Charge (09:00 - 22:00)	0.00 kWh	<input type="text" value="0.00"/>	0.00
2.Off Peak Energy Charge (22:00 - 09:00)	0.00 kWh	<input type="text" value="0.00"/>	0.00
3.Holiday Energy Charge	0.00 kWh	<input type="text" value="0.00"/>	0.00
4.Demand Charge	0.00 kWh	<input type="text" value="0.00"/>	0.00
5.FT Charge	0.00 kWh	<input type="text" value="0.00"/>	0.00
6. Service Charge		<input type="text" value="0.00"/>	0.00
Total			0.00
Vat		<input type="text" value="0.00"/> %	0.00
Grand Total			0.00

Note

1)Average energy unit charge (before VAT) = NaN Baht/kWh
2)Average energy unit charge (after VAT) = NaN Baht/kWh
3)Max Demand was occurred on 09/02/2023

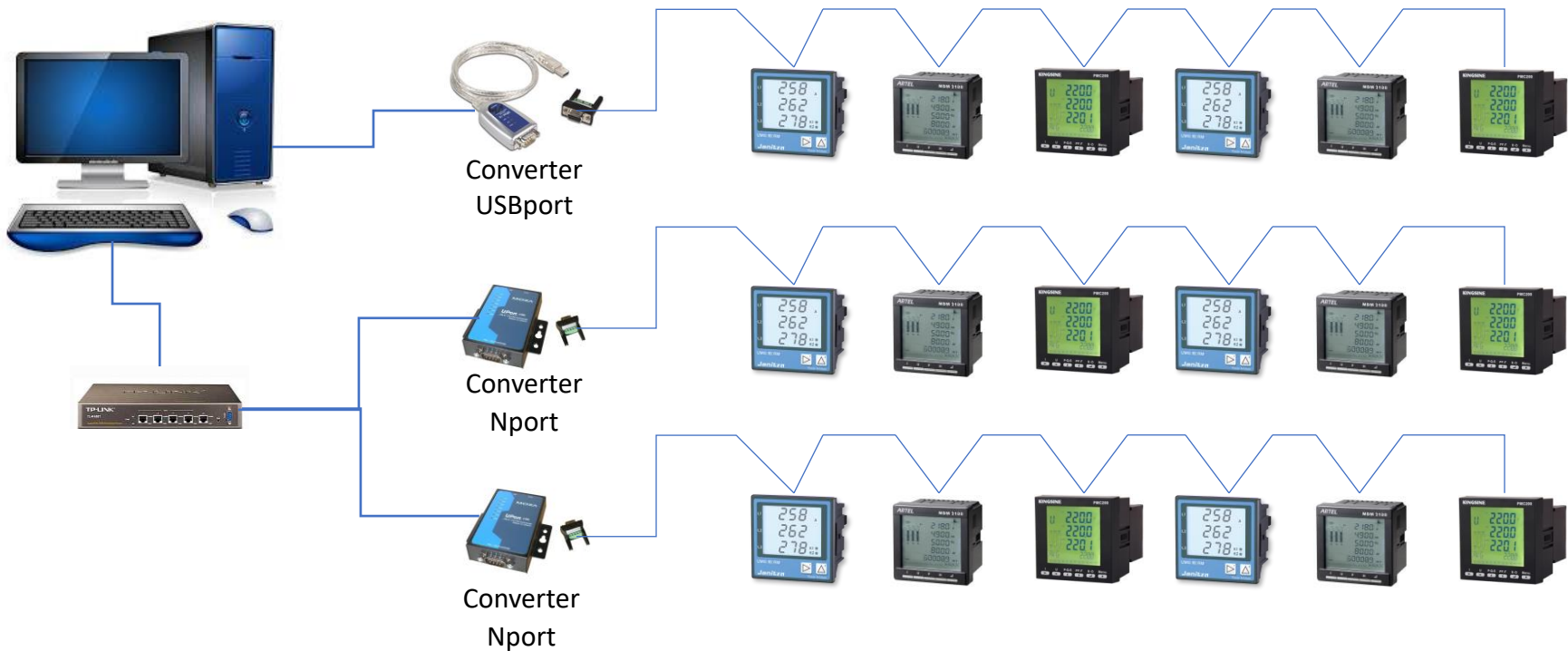
EE VERSION 5

Energy Management Software

SERVICING YOU SINCE 2000

Communication Wiring

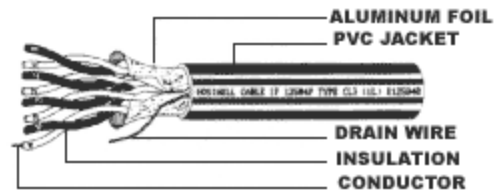




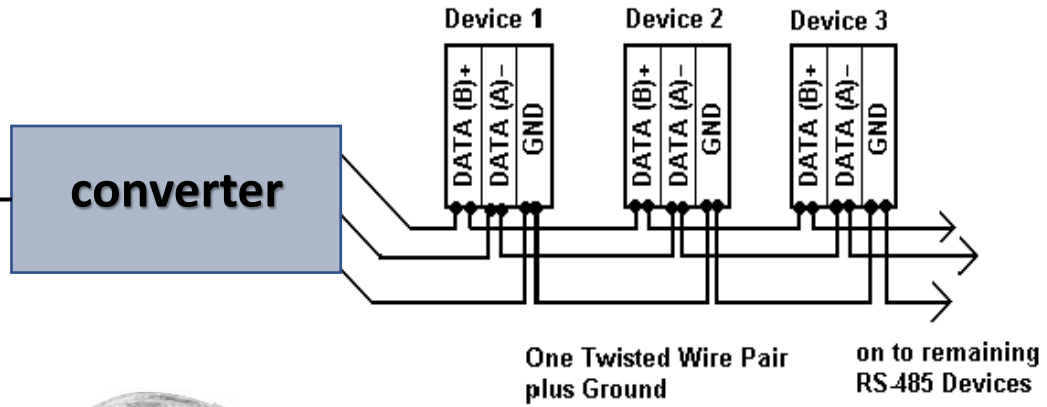
Multipairs Foilded Shielded

Overall Foilded Shielded
 UL subject 13 type CL2 ,CL3
 NEC articles 725 –38(b) (1)
 105°C, 300, 600 Volt

Conductor: fine stranded concentric bare copper
 Insulation: 105°C PVC optional PE, PP
 Jacket: Black sunlight resistant PVC
 Application: For process control and instrumentation.
 Passes UL type CL2, CL3 vertical tray flame test.
 Installed in cable trays, raceways, conduit or aerial.



Communication Wiring (RS-485 converter)



Digital meter



C422



Terminal Block Adaptor for UPort® 1130/1130I/1150



C485



Communication Cable

Communication Wiring (TCP/IP converter)

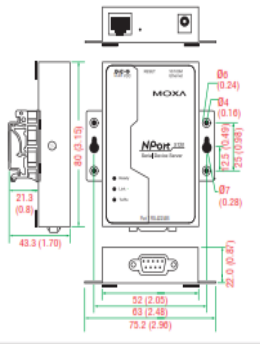


Switch Hub

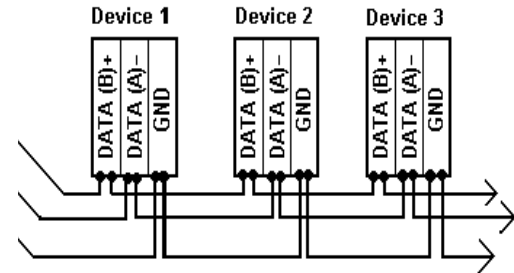
LAN Cable

Loop 1

NPort® 5130



converter



One Twisted Wire Pair plus Ground on to remaining RS-485 Devices

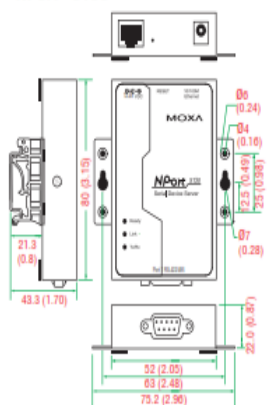
Digital meter

Switch Hub

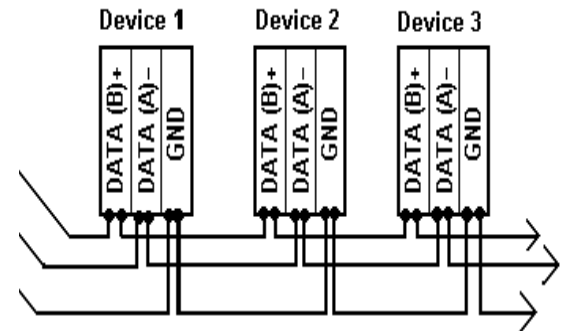
LAN Cable

Loop 2,3,....

NPort® 5130



converter



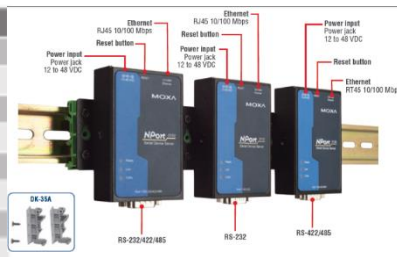
One Twisted Wire Pair plus Ground on to remaining RS-485 Devices

Digital meter

Switch hub

NPort® 5130 (RS-422/485)

PIN	RS-422/485-4w	RS-485-2w
1	TxD-(A)	-
2	TxD+(B)	-
3	RxD+(B)	Data+(B)
4	RxD-(A)	Data-(A)
5	GND	GND
6	-	-
7	-	-
8	-	-



Converter diagram

SmartEE สามารถใช้ได้ทุกแบรนด์ของมิเตอร์



Site Reference



โรงพยาบาลสมิติเวช



EE VERSION 5

Energy Management Software

SERVICING YOU SINCE 2000

THANK YOU

LINE : 0964501250

Email : info@7-mars.com

Call : 0964501250 (Pu)