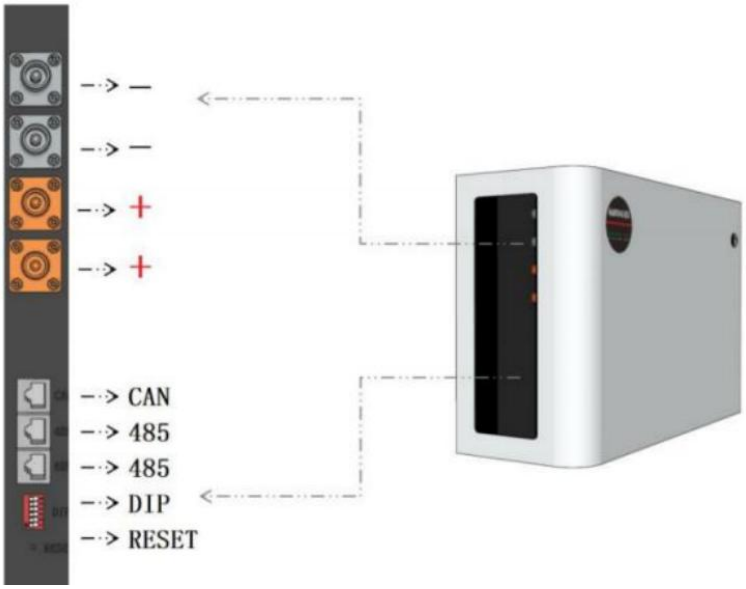
Test Report - Hanchu（Greenlinx） Battery and LUX Inverter

1. Communication

1.1 comm port

CAN Port is for communication with PCS

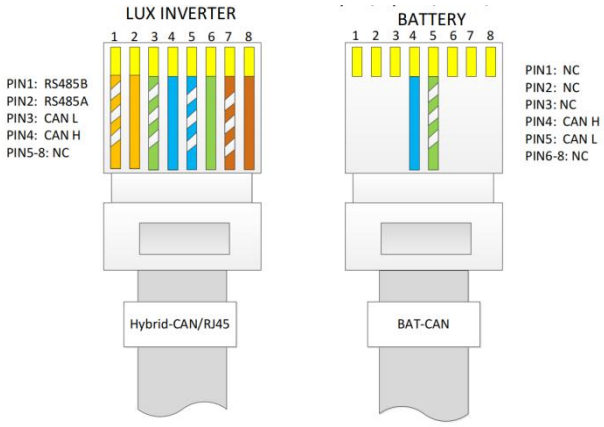
RS485 Ports are for communication among batteries



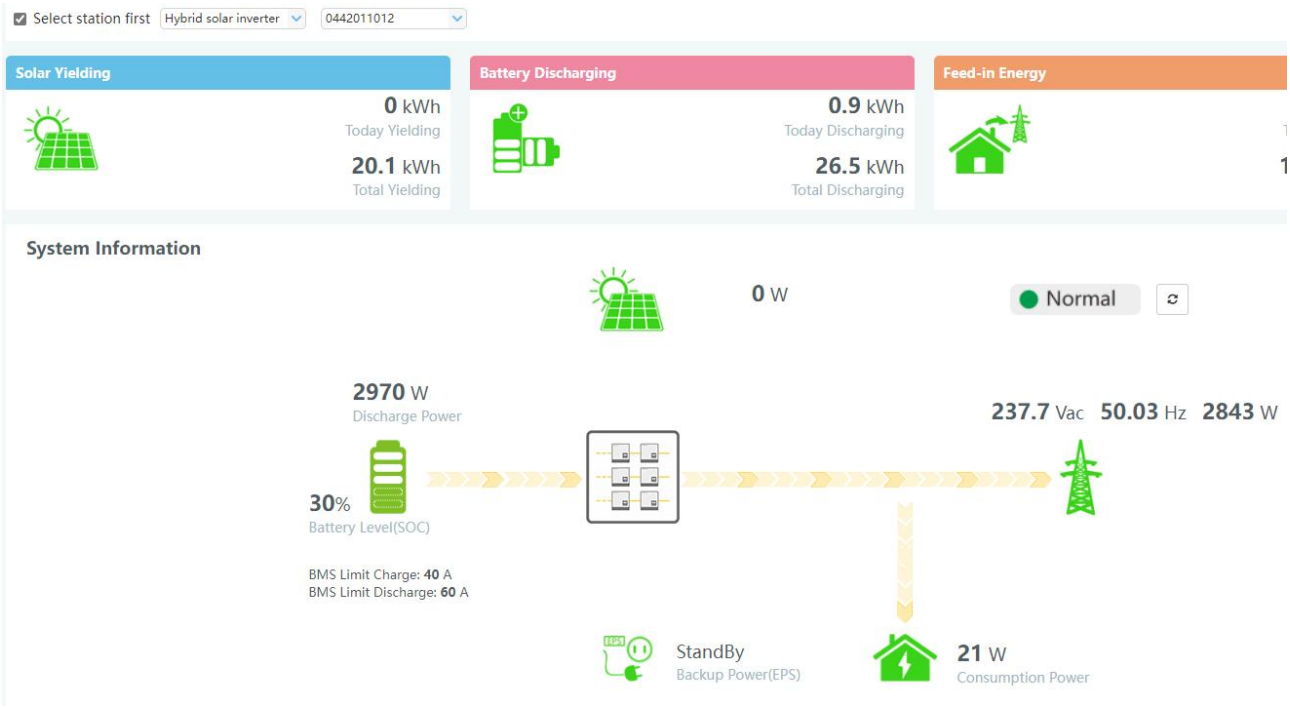
1.2 DIP Configuration

Address	Address dial				Master protocol		Remark
	#1	#2	#3	#4	#5	#6	
1	ON	OFF	OFF	OFF	OFF	ON	Master
2	OFF	ON	OFF	OFF	OFF	OFF	Slave
3	ON	ON	OFF	OFF	OFF	OFF	Slave
4	OFF	OFF	ON	OFF	OFF	OFF	Slave
5	ON	OFF	ON	OFF	OFF	OFF	Slave
6	OFF	ON	ON	OFF	OFF	OFF	Slave

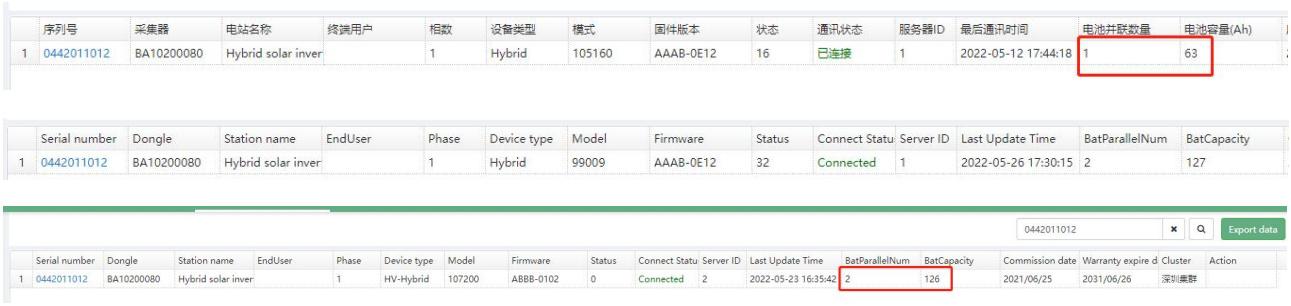
1.3 PIN out of Both Inverter and Battery



1.4 Communication with Inverter



When there is one battery module, the capacity is 63Ah, and when there are two modules ,the capacity is 127 Ah



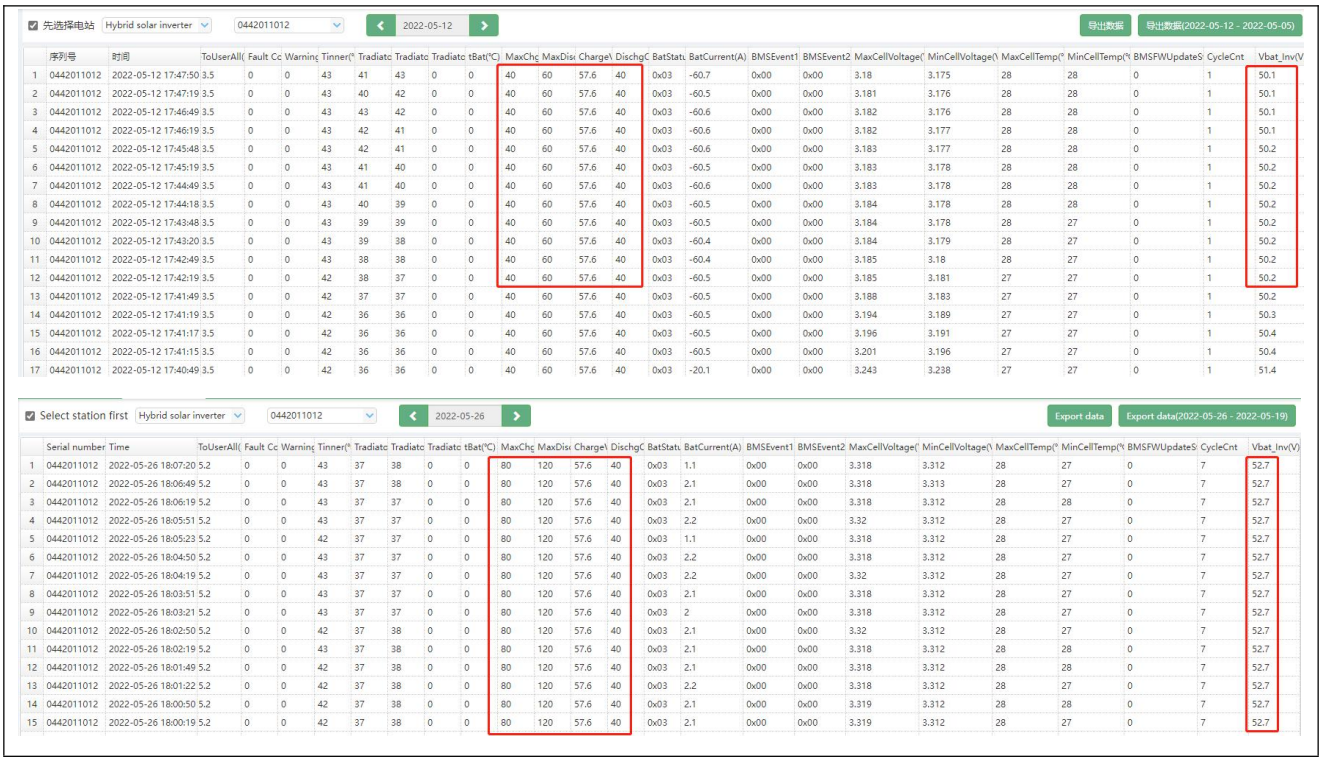
	序列号	采集器	电站名称	终端用户	相数	设备类型	模式	固件版本	状态	通讯状态	服务器ID	最后通讯时间	电池并联数量	电池容量(Ah)
1	0442011012	BA10200080	Hybrid solar inver		1	Hybrid	105160	AAAB-0E12	16	已连接	1	2022-05-12 17:44:18	1	63

	Serial number	Dongle	Station name	EndUser	Phase	Device type	Model	Firmware	Status	Connect Statu	Server ID	Last Update Time	BatParallelNum	BatCapacity
1	0442011012	BA10200080	Hybrid solar inver		1	Hybrid	99009	AAAB-0E12	32	Connected	1	2022-05-26 17:30:15	2	127

0442011012 Export data

	Serial number	Dongle	Station name	EndUser	Phase	Device type	Model	Firmware	Status	Connect Statu	Server ID	Last Update Time	BatParallelNum	BatCapacity	Commission date	Warranty expire d	Cluster	Action
1	0442011012	BA10200080	Hybrid solar inver		1	HV-Hybrid	107200	ABBB-0102	0	Connected	2	2022-05-23 16:35:42	2	126	2021/06/25	2031/06/26	深圳集群	

The max. Charge current is 40A each unit and the max. Discharge current is 60A each unit, charge voltage limitation is 57.6V.

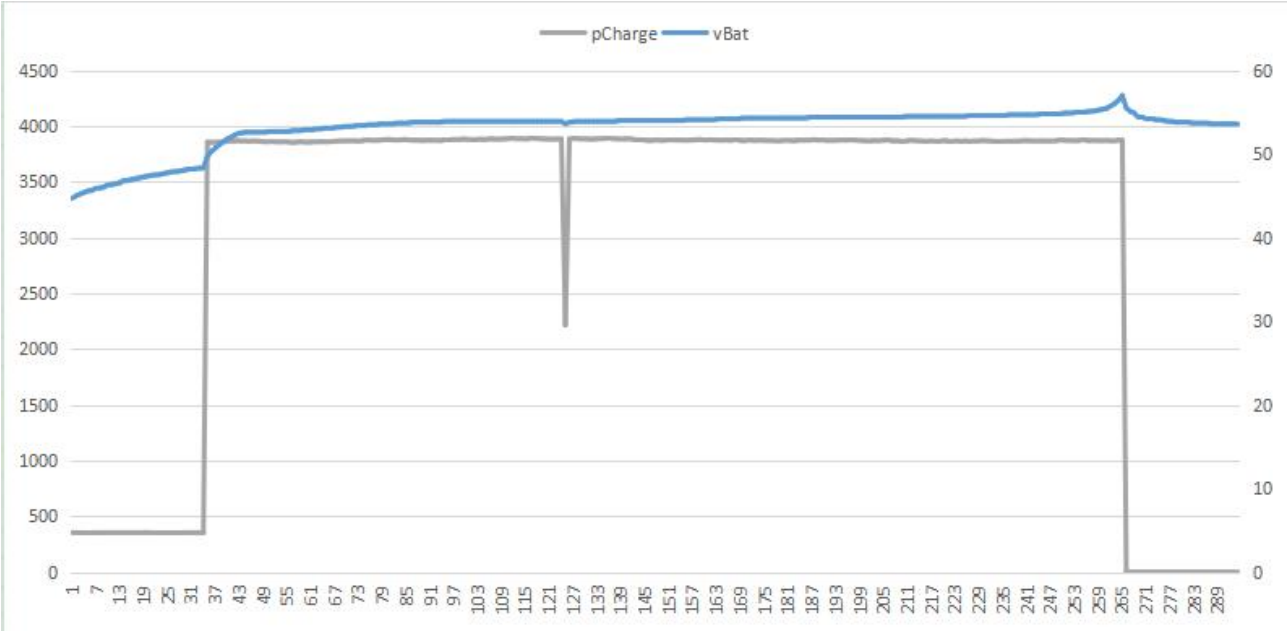


序列号	时间	ToUserAll(	Fault Cc	Warning	Tinner(°	Tradiato	Tradiato	Tradiato	tBat(℃)	MaxChg	MaxDis	Charge\	DischgC	BatStatu	BatCurrent(A)	BMSEvent1	BMSEvent2	MaxCellVoltage(	MinCellVoltage(\	MaxCellTemp(°	MinCellTemp(°	BMSFWUpdateS	CycleCnt	Vbat_Inv(V
1	0442011012	2022-05-12 17:47:50	3.5	0	0	43	41	43	0	0	40	60	57.6	40	0x03	-60.7	0x00	0x00	3.18	3.175	28	28	0	1	50.1
2	0442011012	2022-05-12 17:47:19	3.5	0	0	43	40	42	0	0	40	60	57.6	40	0x03	-60.5	0x00	0x00	3.181	3.176	28	28	0	1	50.1
3	0442011012	2022-05-12 17:46:49	3.5	0	0	43	43	42	0	0	40	60	57.6	40	0x03	-60.6	0x00	0x00	3.182	3.176	28	28	0	1	50.1
4	0442011012	2022-05-12 17:46:19	3.5	0	0	43	42	41	0	0	40	60	57.6	40	0x03	-60.6	0x00	0x00	3.182	3.177	28	28	0	1	50.1
5	0442011012	2022-05-12 17:45:48	3.5	0	0	43	42	41	0	0	40	60	57.6	40	0x03	-60.6	0x00	0x00	3.183	3.177	28	28	0	1	50.2
6	0442011012	2022-05-12 17:45:19	3.5	0	0	43	41	40	0	0	40	60	57.6	40	0x03	-60.5	0x00	0x00	3.183	3.178	28	28	0	1	50.2
7	0442011012	2022-05-12 17:44:49	3.5	0	0	43	41	40	0	0	40	60	57.6	40	0x03	-60.6	0x00	0x00	3.183	3.178	28	28	0	1	50.2
8	0442011012	2022-05-12 17:44:18	3.5	0	0	43	40	39	0	0	40	60	57.6	40	0x03	-60.5	0x00	0x00	3.184	3.178	28	28	0	1	50.2
9	0442011012	2022-05-12 17:43:48	3.5	0	0	43	39	39	0	0	40	60	57.6	40	0x03	-60.5	0x00	0x00	3.184	3.178	28	27	0	1	50.2
10	0442011012	2022-05-12 17:43:20	3.5	0	0	43	39	38	0	0	40	60	57.6	40	0x03	-60.4	0x00	0x00	3.184	3.179	28	27	0	1	50.2
11	0442011012	2022-05-12 17:42:49	3.5	0	0	43	38	38	0	0	40	60	57.6	40	0x03	-60.4	0x00	0x00	3.185	3.18	28	27	0	1	50.2
12	0442011012	2022-05-12 17:42:19	3.5	0	0	42	38	37	0	0	40	60	57.6	40	0x03	-60.5	0x00	0x00	3.185	3.181	27	27	0	1	50.2
13	0442011012	2022-05-12 17:41:49	3.5	0	0	42	37	37	0	0	40	60	57.6	40	0x03	-60.5	0x00	0x00	3.188	3.183	27	27	0	1	50.2
14	0442011012	2022-05-12 17:41:19	3.5	0	0	42	36	36	0	0	40	60	57.6	40	0x03	-60.5	0x00	0x00	3.194	3.189	27	27	0	1	50.3
15	0442011012	2022-05-12 17:41:17	3.5	0	0	42	36	36	0	0	40	60	57.6	40	0x03	-60.5	0x00	0x00	3.196	3.191	27	27	0	1	50.4
16	0442011012	2022-05-12 17:41:15	3.5	0	0	42	36	36	0	0	40	60	57.6	40	0x03	-60.5	0x00	0x00	3.201	3.196	27	27	0	1	50.4
17	0442011012	2022-05-12 17:40:49	3.5	0	0	42	36	36	0	0	40	60	57.6	40	0x03	-20.1	0x00	0x00	3.243	3.238	27	27	0	1	51.4

Serial number	Time	ToUserAll(	Fault Cc	Warning	Tinner(°	Tradiato	Tradiato	Tradiato	tBat(℃)	MaxChg	MaxDis	Charge\	DischgC	BatStatu	BatCurrent(A)	BMSEvent1	BMSEvent2	MaxCellVoltage(	MinCellVoltage(\	MaxCellTemp(°	MinCellTemp(°	BMSFWUpdateS	CycleCnt	Vbat_Inv(V)
1	0442011012	2022-05-26 18:07:20	5.2	0	0	43	37	38	0	0	80	120	57.6	40	0x03	1.1	0x00	0x00	3.318	3.312	28	27	0	7	52.7
2	0442011012	2022-05-26 18:06:49	5.2	0	0	43	37	38	0	0	80	120	57.6	40	0x03	2.1	0x00	0x00	3.318	3.313	28	27	0	7	52.7
3	0442011012	2022-05-26 18:06:19	5.2	0	0	43	37	37	0	0	80	120	57.6	40	0x03	2.1	0x00	0x00	3.318	3.312	28	28	0	7	52.7
4	0442011012	2022-05-26 18:05:51	5.2	0	0	43	37	37	0	0	80	120	57.6	40	0x03	2.2	0x00	0x00	3.32	3.312	28	27	0	7	52.7
5	0442011012	2022-05-26 18:05:23	5.2	0	0	42	37	37	0	0	80	120	57.6	40	0x03	1.1	0x00	0x00	3.318	3.312	28	27	0	7	52.7
6	0442011012	2022-05-26 18:04:50	5.2	0	0	43	37	37	0	0	80	120	57.6	40	0x03	2.2	0x00	0x00	3.318	3.312	28	27	0	7	52.7
7	0442011012	2022-05-26 18:04:19	5.2	0	0	43	37	37	0	0	80	120	57.6	40	0x03	2.2	0x00	0x00	3.32	3.312	28	27	0	7	52.7
8	0442011012	2022-05-26 18:03:51	5.2	0	0	43	37	37	0	0	80	120	57.6	40	0x03	2.1	0x00	0x00	3.318	3.312	28	27	0	7	52.7
9	0442011012	2022-05-26 18:03:21	5.2	0	0	43	37	37	0	0	80	120	57.6	40	0x03	2	0x00	0x00	3.318	3.312	28	27	0	7	52.7
10	0442011012	2022-05-26 18:02:50	5.2	0	0	42	37	38	0	0	80	120	57.6	40	0x03	2.1	0x00	0x00	3.32	3.312	28	27	0	7	52.7
11	0442011012	2022-05-26 18:02:19	5.2	0	0	43	37	38	0	0	80	120	57.6	40	0x03	2.1	0x00	0x00	3.318	3.312	28	28	0	7	52.7
12	0442011012	2022-05-26 18:01:49	5.2	0	0	42	37	38	0	0	80	120	57.6	40	0x03	2.1	0x00	0x00	3.318	3.312	28	28	0	7	52.7
13	0442011012	2022-05-26 18:01:22	5.2	0	0	42	37	38	0	0	80	120	57.6	40	0x03	2.2	0x00	0x00	3.318	3.312	28	27	0	7	52.7
14	0442011012	2022-05-26 18:00:50	5.2	0	0	42	37	38	0	0	80	120	57.6	40	0x03	2.1	0x00	0x00	3.319	3.312	28	28	0	7	52.7
15	0442011012	2022-05-26 18:00:19	5.2	0	0	42	37	38	0	0	80	120	57.6	40	0x03	2.1	0x00	0x00	3.319	3.312	28	27	0	7	52.7

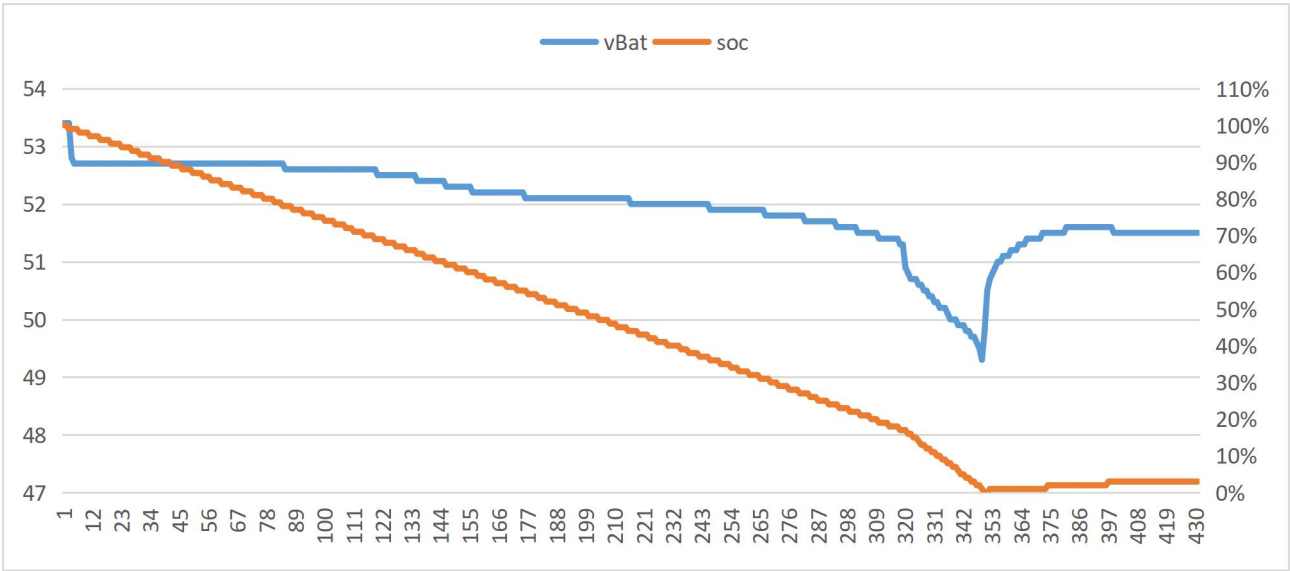
2. Deep Charge and Discharge in Loop

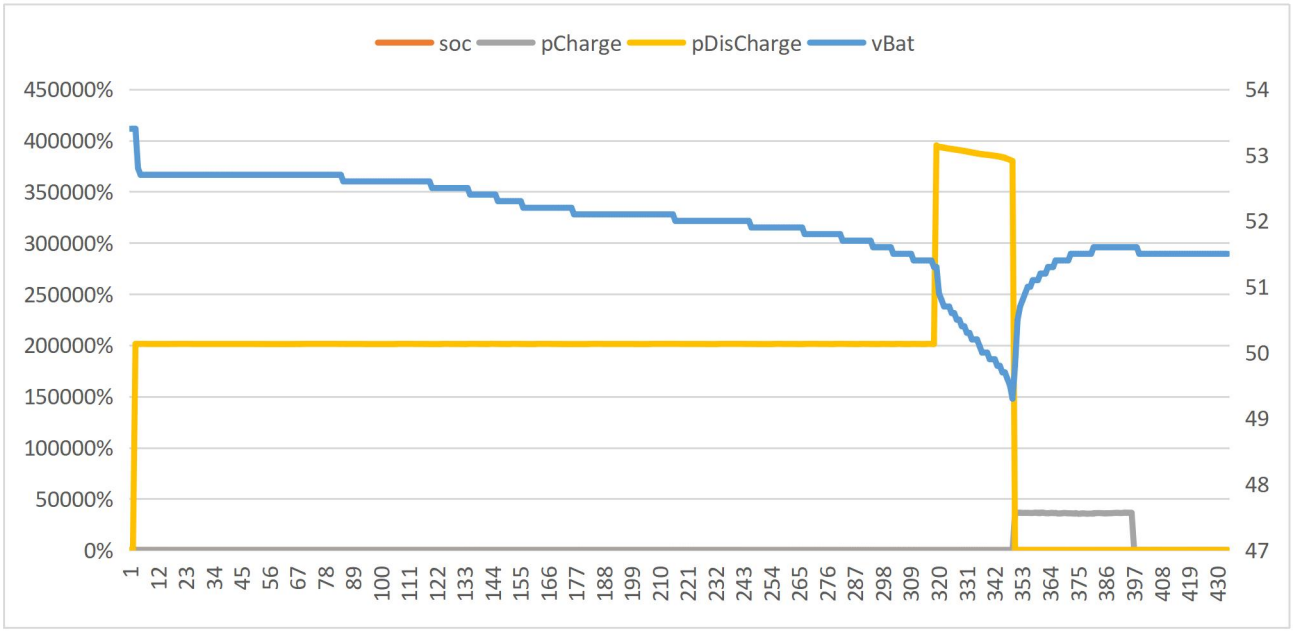
2.1 Deep Charge: There is no SOC fluctuation



2.2 Deep Discharge: There is no SOC fluctuation

The battery can discharge to 0% and then requests charge ,stop charge at 3%





When there is alarm due to low battery voltage , the discharge MOS will be cut off , but communication is still there since the BMS is still on.

3. Wake-up mode

The battery will go to sleep when the battery voltage is lower than 43.2V and there is no power supply on the battery terminals more than 30 min.

Actually the SOC has been 0% at 50V, and there is almost 0.5kWh of energy left before going to sleep state.

And the battery can be woken up without restarting manually.

Serial number	Time	Status	vpv1	vpv2	vpv3	vBat	soc	ppv1	ppv2	ppv3	pCharge	pDisCharge	vacr	vacs	vact	fac	pinv	prec	pf	vepsr	vepss	vepst	feps	peps	seps	pToGrid	pToUser	pLoad	ePv1Day	ePv2Day	ePv3Day	eInvDay	eRecDay
0442011012	2022-05-24 10:02:05	0x00	0	0	0.2	48.4	23%	0	0	0	0	0	0	25.7	0	0	0	0	[0]	4.4	0	0	0	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:02:23	0x40	2.1	6.7	0.2	48.2	23%	0	0	0	0	0	553	25.7	0	0	0	0	[0]	230.1	0	0	50	498	498	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:02:51	0x40	2.5	7	0.2	48	23%	0	0	0	0	0	552	25.7	0	0	0	0	[0]	230.1	0	0	50	497	497	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:03:21	0x40	2.8	7	0.2	47.8	23%	0	0	0	0	0	553	25.7	0	0	0	0	[0]	229.7	0	0	50	497	497	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:03:51	0x40	3	7	0.2	47.6	23%	0	0	0	0	0	552	25.7	0	0	0	0	[0]	230.1	0	0	50	497	497	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:04:22	0x40	3.1	7	0.2	47.5	23%	0	0	0	0	0	556	25.7	0	0	0	0	[0]	230.1	0	0	50	500	500	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:04:53	0x40	3.2	7	0.2	47.4	23%	0	0	0	0	0	553	25.7	0	0	0	0	[0]	230.1	0	0	50	497	497	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:05:19	0x40	3.3	7	0.2	47.2	23%	0	0	0	0	0	553	25.7	0	0	0	0	[0]	230.1	0	0	50	497	497	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:05:50	0x40	3.4	7	0.2	47.1	23%	0	0	0	0	0	551	25.7	0	0	0	0	[0]	230.1	0	0	50	496	496	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:06:18	0x40	3.5	7	0.2	47	23%	0	0	0	0	0	551	25.7	0	0	0	0	[0]	229.9	0	0	50	495	495	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:06:49	0x40	3.7	7	0.2	46.8	23%	0	0	0	0	0	553	25.7	0	0	0	0	[0]	229.9	0	0	50	497	497	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:07:19	0x40	3.8	7.1	0.2	46.7	23%	0	0	0	0	0	551	25.7	0	0	0	0	[0]	229.9	0	0	50	496	496	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:07:50	0x40	3.9	7.1	0.2	46.5	23%	0	0	0	0	0	552	25.7	0	0	0	0	[0]	230.1	0	0	50	496	496	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:08:18	0x40	4.1	7.1	0.2	46.4	23%	0	0	0	0	0	549	25.7	0	0	0	0	[0]	230.1	0	0	50	494	494	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:08:48	0x40	4.3	7.1	0.2	46.2	23%	0	0	0	0	0	552	25.7	0	0	0	0	[0]	230.1	0	0	50	497	497	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:09:20	0x40	4.5	7.1	0.2	46.1	23%	0	0	0	0	0	548	25.7	0	0	0	0	[0]	229.9	0	0	50	493	494	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:09:50	0x40	4.7	7.2	0.2	45.9	23%	0	0	0	0	0	554	25.7	0	0	0	0	[0]	230.1	0	0	50	498	498	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:10:22	0x40	5	7.2	0.2	45.8	23%	0	0	0	0	0	554	25.7	0	0	0	0	[0]	230.1	0	0	50	498	498	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:10:49	0x40	5.3	7.2	0.2	45.6	23%	0	0	0	0	0	557	25.7	0	0	0	0	[0]	230.1	0	0	50	501	501	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:11:19	0x40	5.7	7.3	0.2	45.4	23%	0	0	0	0	0	555	25.7	0	0	0	0	[0]	229.7	0	0	50	499	499	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:11:50	0x40	6.2	7.3	0.2	45.2	23%	0	0	0	0	0	557	25.7	0	0	0	0	[0]	230.1	0	0	50	501	501	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:12:20	0x40	7	7.3	0.2	45	23%	0	0	0	0	0	553	25.7	0	0	0	0	[0]	230.1	0	0	50	498	498	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:12:48	0x40	8.1	7.4	0.2	44.8	23%	0	0	0	0	0	556	25.7	0	0	0	0	[0]	230.1	0	0	50	500	500	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:13:19	0x40	9.6	7.4	0.2	44.6	23%	0	0	0	0	0	556	25.7	0	0	0	0	[0]	230.1	0	0	50	501	501	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:13:50	0x40	11.1	7.3	0.2	44.4	23%	0	0	0	0	0	555	25.7	0	0	0	0	[0]	230.1	0	0	50	499	499	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:14:20	0x40	12.1	7.3	0.2	44.1	23%	0	0	0	0	0	553	25.7	0	0	0	0	[0]	230.1	0	0	50	498	498	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:14:50	0x40	12.6	7.2	0.2	43.9	23%	0	0	0	0	0	553	25.7	0	0	0	0	[0]	230.1	0	0	50	498	498	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:15:19	0x40	12.9	7.2	0.2	43.6	23%	0	0	0	0	0	552	25.7	0	0	0	0	[0]	230.1	0	0	50	497	497	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:15:49	0x40	13.3	7.2	0.2	43.3	23%	0	0	0	0	0	553	25.7	0	0	0	0	[0]	230.1	0	0	50	498	498	0	0	0	0	0	0	0	0
0442011012	2022-05-24 10:16:20	0x00	13.3	7	0.2	42.7	23%	0	0	0	0	0	0	51.3	0	0	0	0	[0]	4.4	0	2457.6	0	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:11:44	0x00	0	0.1	0.2	44.5	0%	0	0	0	0	0	236.6	51.3	0	49.96	0	0	[0]	236.4	0	0	49.96	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:12:05	0x20	0	0	0.2	44.5	0%	0	0	0	0	0	236.2	25.7	0	49.96	0	0	[0]	236	0	0	49.96	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:12:37	0x20	1.3	3.7	0.2	44.7	0%	0	0	0	354	0	237.2	25.7	0	49.91	0	393	1	236.4	0	0	49.97	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:13:05	0x20	1.3	5.8	0.2	45	0%	0	0	0	354	0	236.3	25.7	0	49.94	0	393	1	236.2	0	0	49.94	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:13:34	0x20	1.3	5.8	0.2	45.2	0%	0	0	0	353	0	236.2	25.7	0	49.94	0	393	1	235.7	0	0	49.94	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:14:04	0x20	1.3	5.8	0.2	45.4	0%	0	0	0	353	0	236.2	25.7	0	49.96	0	392	1	235.5	0	0	49.96	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:14:36	0x20	1.2	5.8	0.2	45.6	0%	0	0	0	352	0	236.6	25.7	0	49.96	0	392	1	235.7	0	0	49.96	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:15:03	0x20	1.3	5.8	0.2	45.7	0%	0	0	0	353	0	235.7	25.7	0	49.96	0	392	1	235.3	0	0	49.96	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:15:32	0x20	1.3	5.8	0.2	45.9	0%	0	0	0	354	0	235.5	25.7	0	49.94	0	393	1	235.3	0	0	49.94	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:16:04	0x20	1.3	5.8	0.2	46	0%	0	0	0	353	0	235	25.7	0	49.95	0	392	1	235.1	0	0	49.95	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:16:33	0x20	1.3	5.8	0.2	46.1	0%	0	0	0	354	0	236.5	25.7	0	49.96	0	393	1	236.4	0	0	49.94	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:17:02	0x20	1.3	5.8	0.2	46.3	0%	0	0	0	354	0	236.6	25.7	0	49.95	0	394	1	236.6	0	0	49.95	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:17:33	0x20	1.4	5.8	0.2	46.4	0%	0	0	0	354	0	235.8	25.7	0	49.95	0	393	1	235.1	0	0	49.95	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:18:03	0x20	1.4	5.8	0.2	46.5	0%	0	0	0	353	0	235.7	25.7	0	49.95	0	392	1	235.3	0	0	49.95	0	0	0	0	0	0	0	0	0	0
0442011012	2022-05-24 14:18:31	0x20	1.3	5.8	0.2	46.6	0%	0	0	0	355	0	236.7	25.7	0	49.95	0	394	1	236.4	0	0	49.94	0	0	0	0	0	0	0	0	0	0

4. Test Result

The Hanchu Home-ESS-LV-3.2K battery can be compatible with Luxpower unit

Done

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