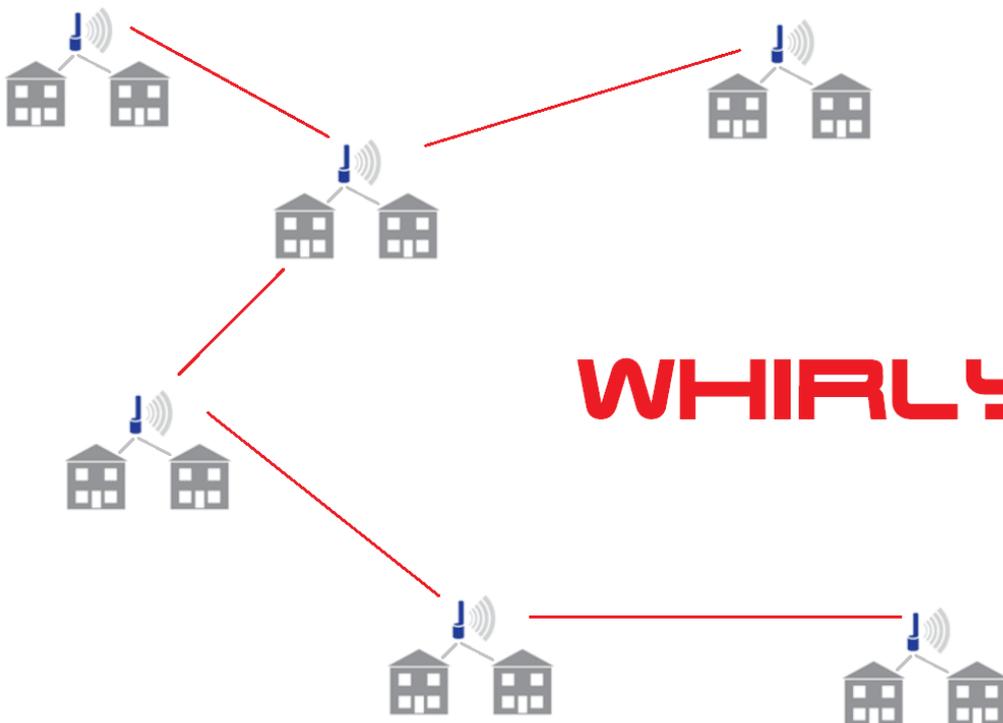


LMC-03-N

RF Mesh Networked Smart Load monitoring and Management System



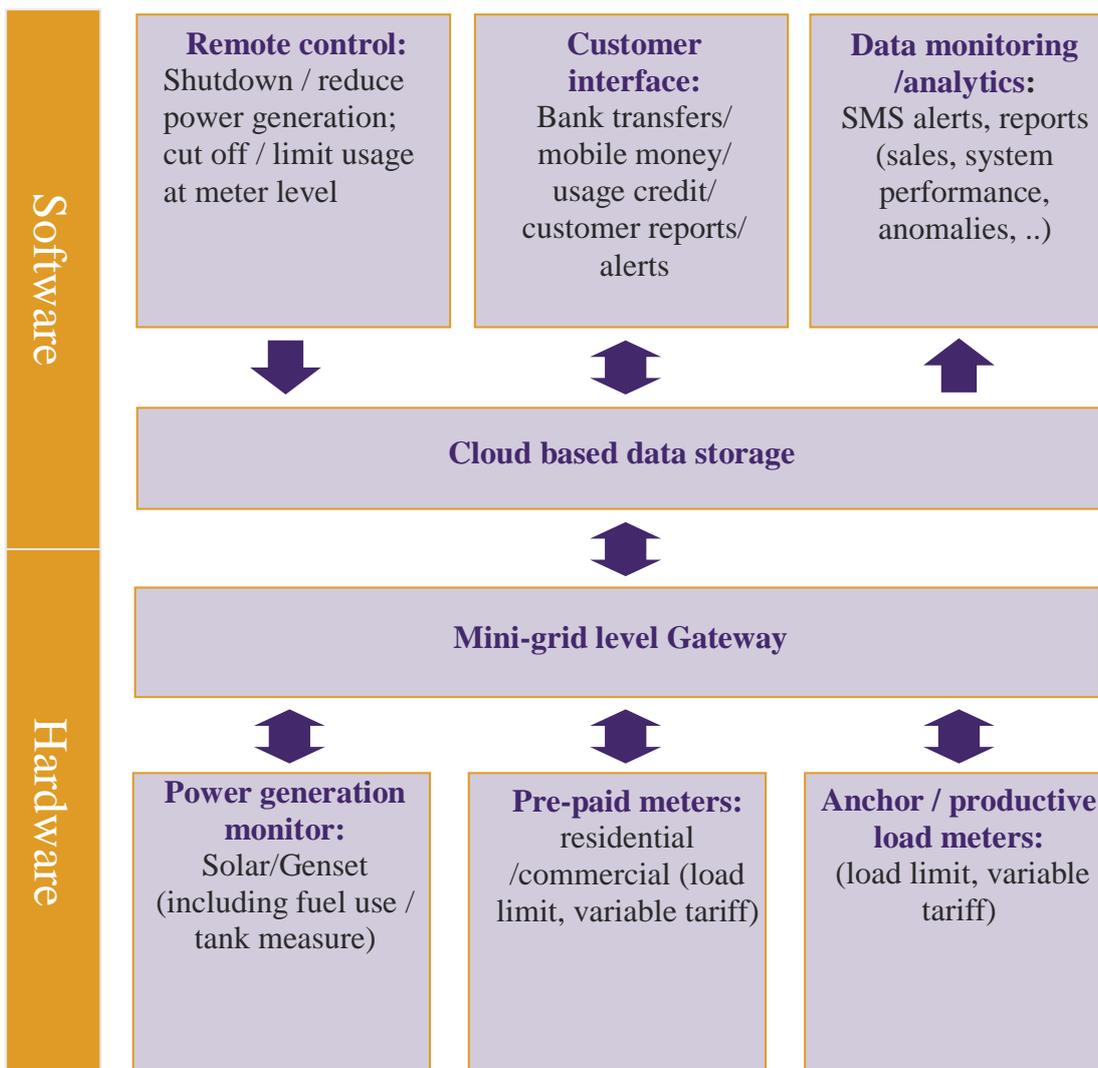
WHIRLYBIR

LMC-03-N

How It Works

The five channel Load Monitoring and Control (LMC) Unit uses Zigbee mesh network for communication along with application specific integrated circuit from analog devices to accurately measure energy consumption.

Each LMC unit could independently monitor and control five households. Every network has a coordinator which is GPRS enabled to communicate through web based central data collection and control unit. Number application and features are developed over this architecture, some highlights are as follows.



LMC-03-N

Monitoring Platform:

- Update meters with energy credit, start/stop or limit based on time of use
- Customer usage/payment alerts
- Proactive fault management via automated threshold alerts
- Monitor PV production, DG usage, battery charging status

Gateway:

- Aggregates meter data and sends to Whirlybird cloud platform via GSM/GPRS
- Gateway can store 3 months+ plant data locally
- Capable of feeding data at 1min intervals

Meters:

- Meters communicate over mesh network w/gateway, send energy consumption to gateway controller
- Prepaid meter stores available energy credit, daily kWh usage (30 days)



LMC-03-N

Technical specifications of 3 channel LMC Unit

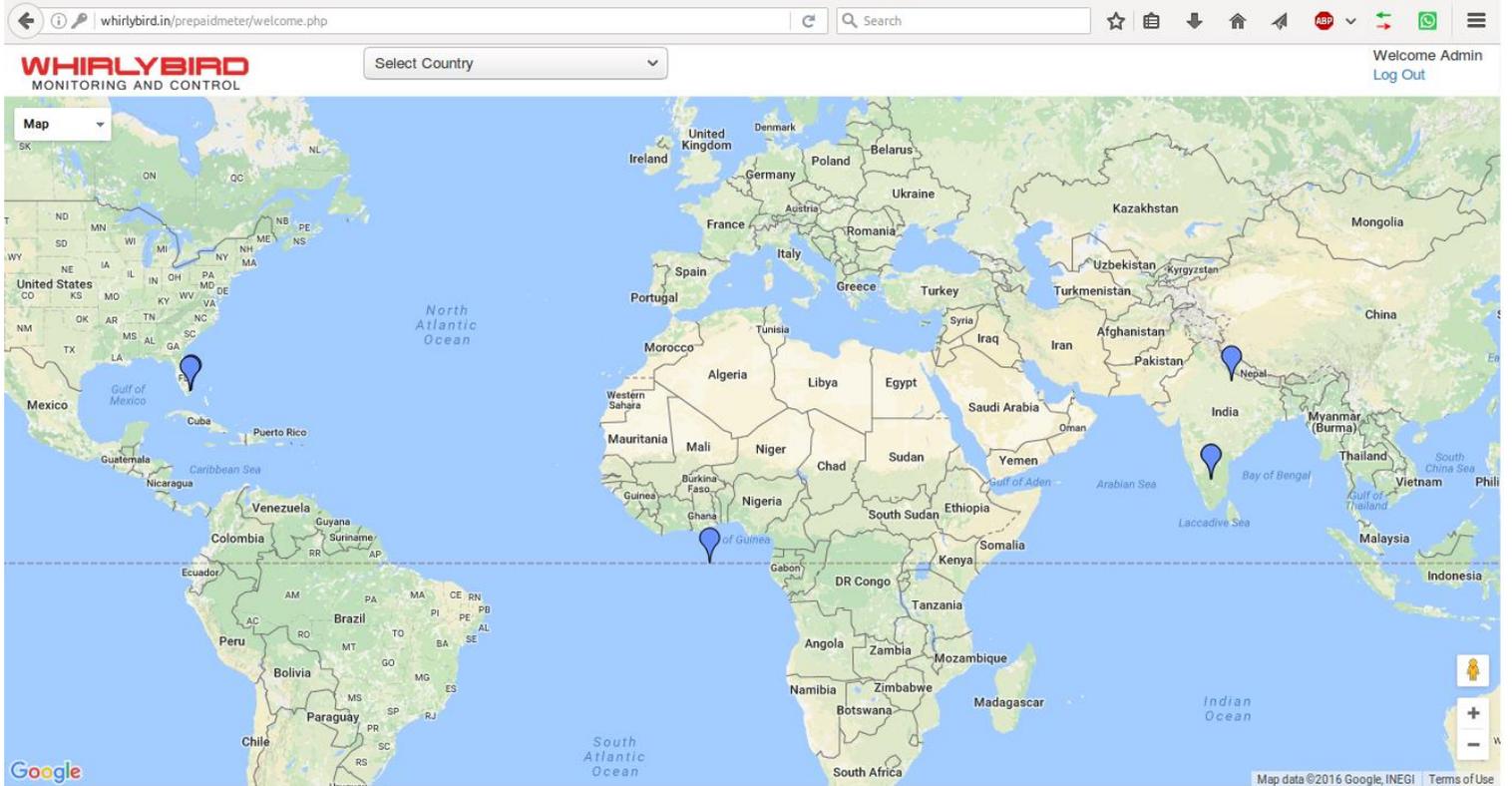
S/N	Parameter	Value
1	Input Channels	1
2	Output Channels	3
3	Operating voltage	150-250 Vac
4	Power Consumption	Maximum 10W, Nominal 5W
5	Data backup	30day for each Chanel
6	Absolute max load per channels	500W
7	Energy Measurement	
	Resolution	0.01kWh
	Error	Less than 5%
	Maximum value	650 kWh
8	Load Measurement	
	Resolution	1W
	Error	Less than 5%
	Maximum value	500W
9	Accuracy or RTC with onboard battery	5 minute per month drift
10	Zigbee Communication Range	Up to 200 meters.
11	Over load protection	Meter will disconnect load for 1 minute
12	Short circuit Protection	Fast blow fuse
13	Environmental protection	IP55 rated enclosure

Programmable features

S/N	Parameter	Value
1	Load Limit	Minimum 5W Maximum 500W Resolution 1W
2	KWatt Hour Credit	Minimum 0.1Kwh Maximum 99.9 Kwh Resolution 0.1Kwh
3	Time (days) credit	Minimum 1day Maximum no limit Resolution 1day
4	Meter switch-on and switch-off time	Example: it will enable all channels at 6pm and disable at midnight

LMC-03-N

Web Portal



Plant Id	Capacity	Address	Village
PLANT002	50	Mikon Bedia	Mikon Bedia

Consumer Name	Instant Load	Unit Consumed
Wood	5.80	13
Sakhal	1.29	8
Man	4.25	14
Man	3.00	10
Man	2.4	0
Man	1.08	0
Man	3.8	14
Man	1.28	20
Man	3.77	0
Man	4.34	7
Man	2.86	7
Man	4.15	14
Man	4.25	13
Man	4.43	7
Man	4.13	14
Man	1.2	11
Man	4.42	12
Man	4.25	13
Man	1.98	0
Man	4.02	14

Showing 1 to 20 of 20 entries

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LMC-03-N

whirlybird.in/prepaidmeter/moduleConsumerDash.php?country=India&plant=PLANT001&consumer=CONSUMER001&strtda

WHIRLYBIRD MONITORING AND CONTROL

HOME PLANT POLE LOADLIMITER CONSUMER USER RECHARGE REPORT

Welcome Admin Log Out

Consumer Dashboard

India PLANT001 Rajesh Kumar 4-11-2015 20-02-2016 Show

Consumer Id	Name	Address	Mobile
CONSUMER001	Rajesh Kumar	140 1st Cross	8877605544

Parameter Trend BW 2016-02-01 to 2016-02-20

Show 20 entries

Unit	Power	Recharged	Acknowledged
300	80	2015-11-04 13:50:19	2015-11-04 13:50:19

Showing 1 to 1 of 1 entries

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whirlybird.in/prepaidmeter/moduleConsumer.php

WHIRLYBIRD MONITORING AND CONTROL

HOME PLANT POLE LOADLIMITER CONSUMER USER RECHARGE REPORT

Welcome Admin Log Out

Register a New Consumer

*Select Plant: Select Plant

*Select Pole: Select Pole

*Select Load Limiter: Select Load Limiter

*Select Channel: Select Channel

*Consumer Id: Consumer Id e.g. CONSUMM

*Consumer Name: Consumer Name

*Address: Consumer Address

*Mobile Number: Consumer 10 digit mobile nurr

*Commission Date: Commissioning Date Like dd-mm-yy

*Consumer Type: Select Consumer Type

Register Cancel

Consumer Id	Consumer Name	Type	Address
mahakshajha	Mahak Sajuje	Domestic	Bangalore
mahak	mahak	Commercial	Bangalore
CONSUMER025	Sushil Singh	Domestic	129 6th cross
CONSUMER019	Ravish Kumar	Domestic	132 3rd cross
CONSUMER018	test18	Commercial	Address18
CONSUMER017	test17	Domestic	Address17
CONSUMER015	Pradhep Singh	Domestic	102 3rd Cross
CONSUMER014	Amit Singh	Commercial	105 3rd Cross
CONSUMER013	Mid Igbal	Domestic	106 3rd Cross
CONSUMER012	Anand Patel	Domestic	107 3rd Cross
CONSUMER011	Suresh Kumar	Commercial	106 3rd Cross
CONSUMER010	Mahesh Singh	Commercial	127 2nd Cross
CONSUMER009	Neeraj Shukla	Domestic	125 2nd Cross
CONSUMER008	Abul Mishra	Domestic	124 2nd Cross
CONSUMER007	Raju	Domestic	123 2nd Cross
CONSUMER006	Ram Kumar	Domestic	121 2nd Cross
CONSUMER005	Santosh Yadav	Domestic	145 1 st Cross
CONSUMER004	Dinesh Kumar	Domestic	144 1st Cross
CONSUMER003	Anind Chaudary	Domestic	143 1st Cross
CONSUMER002	Ramesh Singh	Commercial	141 1st Cross

LL Id	Ch #	Commission Date	Status
25	5	2016-07-13	Inactive
25	3	2016-07-13	Active
5	5	2015-12-14	Active
4	4	2015-12-14	Active
4	3	2015-11-23	Active
4	2	2015-11-23	Active
3	5	2015-11-25	Active
3	4	2015-11-23	Active
3	3	2015-11-24	Active
3	2	2015-11-24	Active
3	1	2015-11-24	Active
2	5	2015-11-24	Active
2	4	2015-11-23	Active
2	3	2015-11-13	Active
2	2	2015-11-13	Active
1	1	2015-11-19	Active
1	5	2015-11-18	Active
1	4	2015-11-18	Active
1	3	2015-11-17	Active
1	2	2015-11-17	Active

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