VESTEL
TELECOM BATTERY SOLUTIONS
ENSURING CONTINUITY

VESTEL
MOBILITY

VESTEL MOBILITY

Vestel Mobility is a part of Vestel Group which is a renowned global leader in the field of innovation and technology. Vestel Mobility is actively contributing towards the future of transportation and energy transition by specializing in automotive electronics, battery solutions, and electric vehicle (EV) chargers.

In the automotive electronics sector, Vestel Mobility excels in engineering and manufacturing advanced electronic control units (ECUs), EV powertrain components and cockpit electronics such as clusters and infotainment displays.

Vestel Mobility is also a prominent player in the battery solutions arena, producing high-quality battery packages for eBikes, telecom towers, and energy storage systems. These solutions cater to a wide range of residential, commercial, industrial and utility applications.

Furthermore, Vestel Mobility showcases its commitment to promoting sustainable transportation systems by offering a comprehensive range of EV chargers. With both AC and DC options available, Vestel aims to provide seamless and eco-friendly charging infrastructure to support the growing adoption of electric vehicles.

With over 40 years of experience, a vast city-size 1.3 million m2 industrial complex, 11 offices based around the world, clientele from over 160 countries, a client-orientated mindset, and true R&D, Vestel embodies a legacy of excellence and a commitment to advancing industries at the intersection of innovation and sustainable solutions.

Exports
160+ countries

Export Leader of Turkey
for the last 26 consecutive years

900+ Customers
500+ Brands

Established over
1.3 million m^2

20.000+
Employees

AVAILABILITY

Vestel Trade	Manisa
Vestel UK	London
Vestel France	Paris
Vestel Germany	Munich
Vestel Iberia	Madrid
Vestel Holland	Rotterdam
Vestel Russia	Moscow
Vestel Central Asia	Almaty
Vestel Romania	Bucharest
Vestel Poland	Warsaw
Vestel Gulf	Dubai
Vestel USA	New York


Headquarter
Manufacv Facility

VESTEL SUSTAINABILITY GOALS

42% absolute value reduction in Scope 1 and 2 greenhouse gas emissions.

30% reduction in energy intensity (per unit product).

Using **50%** recovered and recycled water.

Reducing the amount of water withdrawn per unit of production by **35%.**

Zeroing the amount of waste sent to landfills.

Achieving a female employee ratio of **40%** of the total workforce.

Vestel's vision is to be a technology company creating social and environmental benefits through accessible and smart products that make life easier. We are investing in innovative business models for transition to a net zero emission economy and striving to implement circular models in both our products and operations.

We are developing solutions that meet the needs of the future. We are designing products free from hazardous chemicals, that use recycled and recyclable materials, which are durable, easy to repair as well as energy and water efficient.

We calculate and report our carbon footprint according to the ISO 14064 standard and our water footprint according to the ISO 14046 standard and have these verified by independent third parties. We share our performance transparently through our CDP reports. We aim to reach net zero emissions by 2050, first in our own operations and then throughout our entire value chain. To that end, we aim to switch to technologies that cause less greenhouse gas emissions in production, increase renewable energy investments and manufacture products with high energy efficiency, less water consumption, and resource efficiency benefits.

We aim to strengthen our presence as a global player with our experience, vision, intellectual power, and technological prowess; and we are determined to contribute to a better and livable world, ocusing on our environmental, social and governance performance.

BATTERY ENERGY STORAGE SOLUTIONS

INNOVATION

VESTEL's approach brings the true meaning of custom design experience and creates the highest level of technology solutions from scratch. VESTEL Battery Solutions R&D team ensures complete client satisfaction by meeting the needs of any project at the highest quality. Combining the latest technology test and simulation tools alongside the design and manufacturing capabilities all in-house.

Fast and Fully Customized Projects by Providing Direct Access to our R&D Team.

R&D Investment Amounting to an Average 80M USD.

7 R&D Centers in 4 Countries.

Among Top 50 Companies in Patent Applications in Europe

PRODUCTION WITH HIGHEST QUALITY

TPM Awarded Manufacturing Facility
Awarded for World-Class TPM Achievement

Auto Grade Production for BMS
Automotive Grade In-house BMS Manufacturing with IATF 16949 Certification at Europe's biggest automated PCB facility.

Automated Production Lines
Fully automated cell sorting for the best possible cell balancing.

Laser Welding
Fully automated laser welding technology.

In-house Accredited Testing Facilities
Vestel Battery Solutions provides the utmost quality products with highest standards of quality with in-house accredited testing facilities for environmental, electrical, software and mechanical tests.

Tracking Real Time

ERP Integration

Real Time Planning

Traceability

VESTEL LI-ION TELECOM BATTERY SOLUTIONS

01

Lithium Iron Phosphate Technology

Enhacing safety and cycle endurance

02

Fast Recharging

Preventing downtime and providing the utmost efficiency for charging cycles

03

Longer Life

Providing 2 - 3 times of lifespan of Lead Acid batteries

04

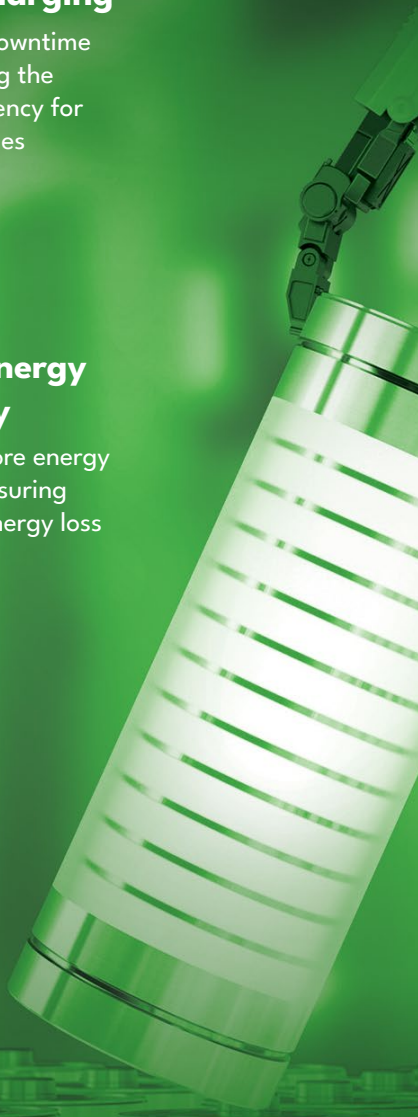
Higher Energy Efficiency

Providing more energy density & Ensuring minimized energy loss

05

Low Levelized Cost

Lower operational and maintanence costs



SMART AND FLEXIBLE

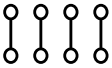
KEY DESIGN FEATURES

Smart Heater

Owing to its built-in smart heating system, battery pack has the capability to function at low temparetures.

Smart Charging Technology

To extend the lifespan, the battery packs are designed to prevent any charging of others in the same network.



Unlimited Connection

Owing to its built-in smart heating system, battery pack has the capability to function at low temparetures.

Non-Interruptable Operation

System is designed to sustain the power supply to the load continuously. Even in the case of communication problem with rectifier.

Fast Recharging

In two hours, battery can be fully charged its capacity, provides rapid and efficient charging.

Rapid Response

The battery pack promptly responds to any power outages since its decision-making architecture is governed by hardware.

SAFE AND COST EFFECTIVE

KEY DESIGN FEATURES

Anti-Theft

The battery pack is equipped with a motion sensor that detects even slight movements and generates an alert in the event of any potential theft.

Mix Use with Lead Acid

It can be used in combination with lead acid batteries.

Safe Operation

Over-under current, voltage, temperature conditions are prevented with the advanced protection unit in BMS.

Remote Control

Status of the battery pack can be monitored periodically and multiple battery functions can be remotely configured and tested.

Long Life with JEITA

With JEITA Charge Control Algorithm, the cells are always kept within the optimal temperature range to ensure peak performance.

Laser Welding

Allowing to improve battery packs endurance performance as well as production efficieny.

In-Built GPRS

GPRS module is ready to transfer data at low signal sites.

LOW LEVELIZED COST OF STORAGE

Vestel Telecom Battery introduces an innovative technology that presents numerous advantages over traditional diesel generators and lead acid batteries. With its cleaner and more efficient operation, it offers a more environmentally friendly alternative, helping to reduce harmful emissions and waste. Furthermore, its exceptional lifespan and lower maintenance requirements contribute to its long-term cost-effectiveness.

WHAT SETS OUR SOLUTION APART?

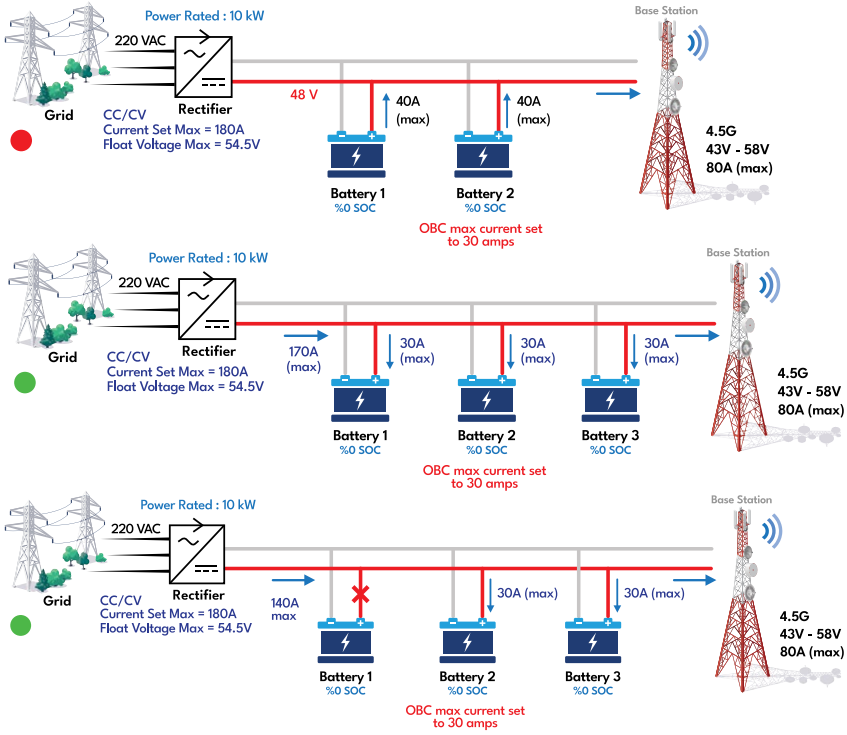
PATENTED TECHNOLOGY

AC Grid Offline

- Both TBS can supply to load simultaneously.

AC Grid Online

- Rectifier is in Constant Voltage region batteries %0 SOC. (10KW ~ 180A)
- Three parallel batteries can charge simultaneously.

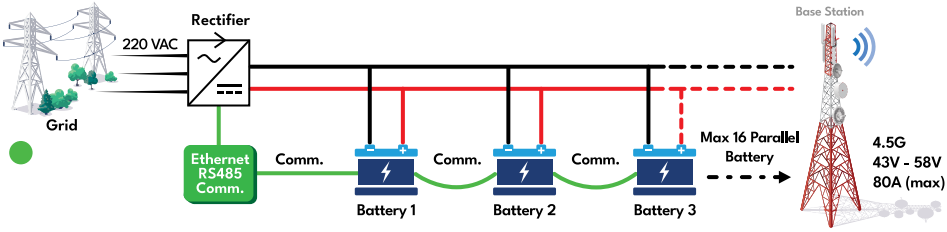


Our Unique Solution

- If one of the TBS is gone into the protection state, less of the system still available both charging or discharging state.
- One of the TBS units will not charge the others on the parallel-connected bus.

WHAT SETS OUR SOLUTION APART?

PATENTED TECHNOLOGY



Other Solutions

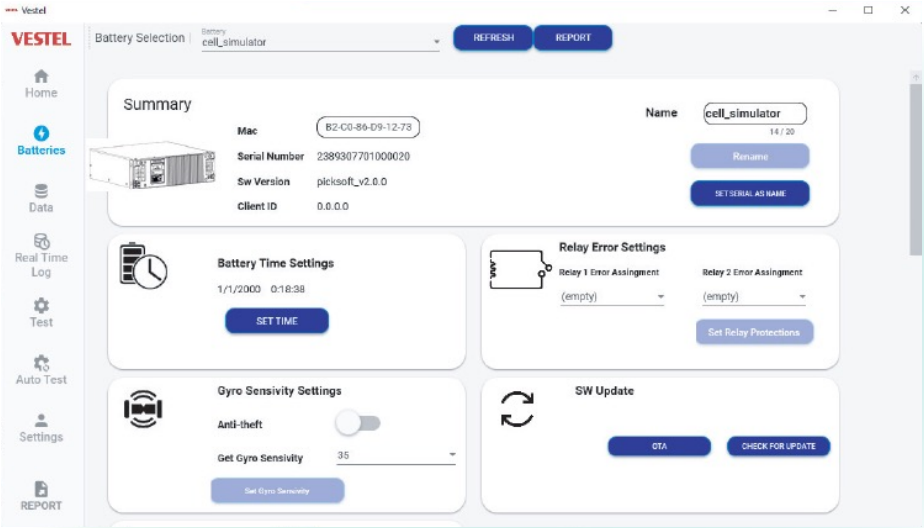
- Communication Bridge Module must be purchased.
- This is because the batteries and the rectifier communicate with each other if all of them connected parallel at the same DC bus. They understand this in advance during any AC power failure. Thus, they create time for the batteries to adjust themselves.
- If one of communication cable is damaged or any broken battery on the system, batteries wont supply to the load until service personal fix the error.

Our Unique Solution

- No required extra communication bridge device
- No need to sense AC Power failure
- No need to communicate each other
- One of the TBS can go into the protection state

SERVICE TOOL

The specifications of Vestel Telecom Solution battery products can be monitored remotely.



LIST OF CERTIFICATIONS

SAFETY, ENVIROMENTAL, TRANSPORTATION, EMC.

- IEC62619, IEC62281, IEC63056,
- EN 61000-6-2
- UN38.3
- EN ISO 13849-1
- Battery Directive 2020/0353 (COD)
- EMC Directive 2014/30/EU
- WEEE Directive 2012/19/EU
- RoHS Directive 2011/65/EU
- REACH Regulation (EC) No 1907/2006

TELECOM BATTERY

19” 48V 100 Ah LFP

Items	Specification
Cell Configuration	15S1P
Cell Type	Li-ion Prismatic
Cell Chemistry	LiFePO4
Pack Nominal Voltage	48 V
Rated Capacity	100 Ah
Rated Energy	4.8 kWh
Boost Charge (CC/CV charger)	54.5 V
Float Charge (CV mode)	54.5 V (min)
Application Voltage Range	43 V-54.5 V
Max Charge Current	50 A
Max Discharge Current	100 A
Enclosure Size	19” 140 mm height
Recommended Operating Temperature Range	10˚C to 45˚C
Storage Temperature	0˚C to 35˚C
Operating Temperature Charging	0˚C to 60˚C
Operating Temperature Discharge	-20˚C to 65˚C
Heaters	2x55 W
Weight	43 kg
Communication Protocols	RS485, CANBUS, Ethernet
Safety Standards	IEC 62619, IEC 62281, UN38.3

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