



**LAS
TECH
SOLUTIONS**

PROTECT • PREVENT • SAVE LIVES

Mobile Communication Solutions

Mobile Communication Solutions

Empowering Field Operations with Reliable Connectivity



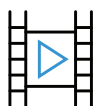
Features



Extended 4G/5G reach:
Beyond conventional radio coverage.



Secure communication:
E2E encryption with recording.



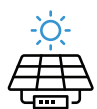
Seamless field operations integration:
Effortless integration of voice, video, data, and location-based services for special field operations.



Universal connectivity:
Seamlessly connects any 4G/5G device.



Mobile perimeter CCTV:
Surveillance camera for mobile platform protection.



Self-Sustained power:
Fully autonomous power system.



Integrated GIS:
Geographic information system integration.



Network Design Overview

Radio:

Nokia e/gNode-B radio mounted on a manual crank telescopic mast.

Core:

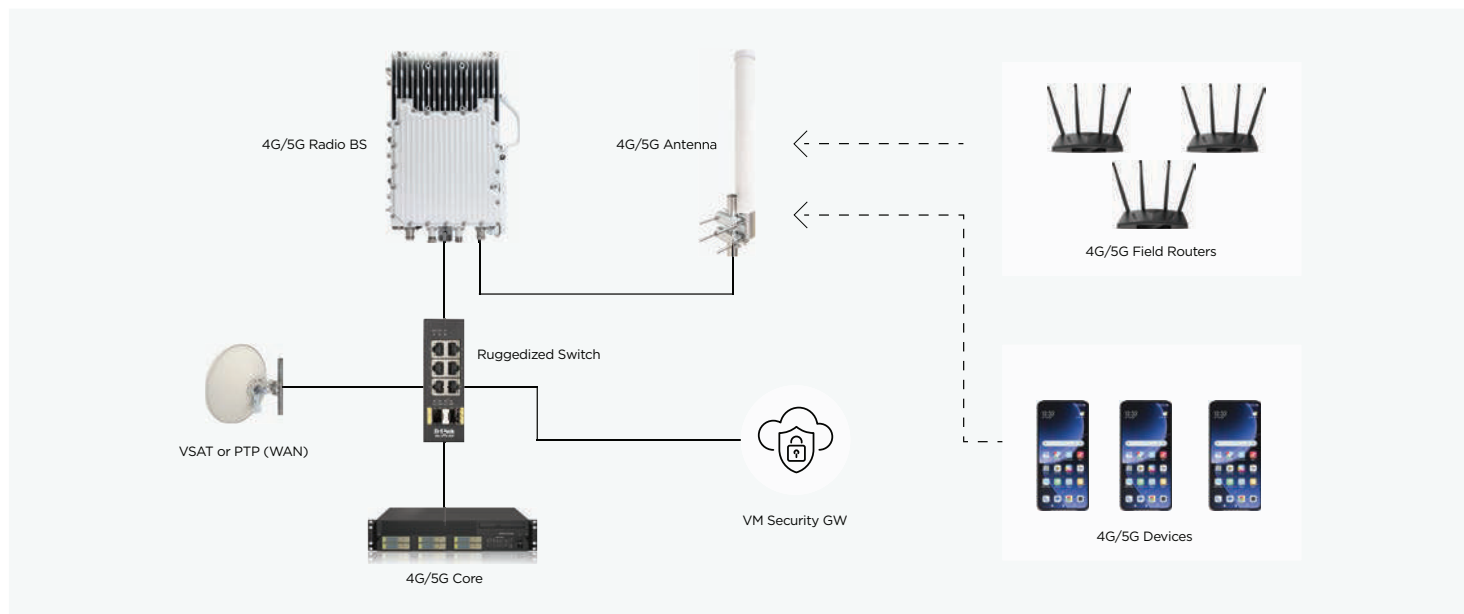
High-performance, low-power, highly integrated rugged embedded server in a specially designed MIL IP67 housing, enabling operation in any environment without fans or air vents.

IP Core & WAN:

Ruggedized Layer 3 switch. PTP, PMP or VSAT.

Operators:

Two ruggedized operator workstations (dispatch & mission management consoles).



Dispatch & Mission Management Consoles Overview

Push-to-Talk & Push-to-Video:

PTT and PTV solution with hierarchy support & multi-tenancy.

Dispatch console:

Console with voice/video & mobile CCTV feature.

GIS:

Localization/positioning services.

Tactical information:

Feeds, various analytics & visualizations.

Lifesaving real-time mobile capabilities:

Live video feeds, personnel tracking, image sharing, site surveys, augmented reality, geospatial mapping, navigation & chat.



Mission Management Interface

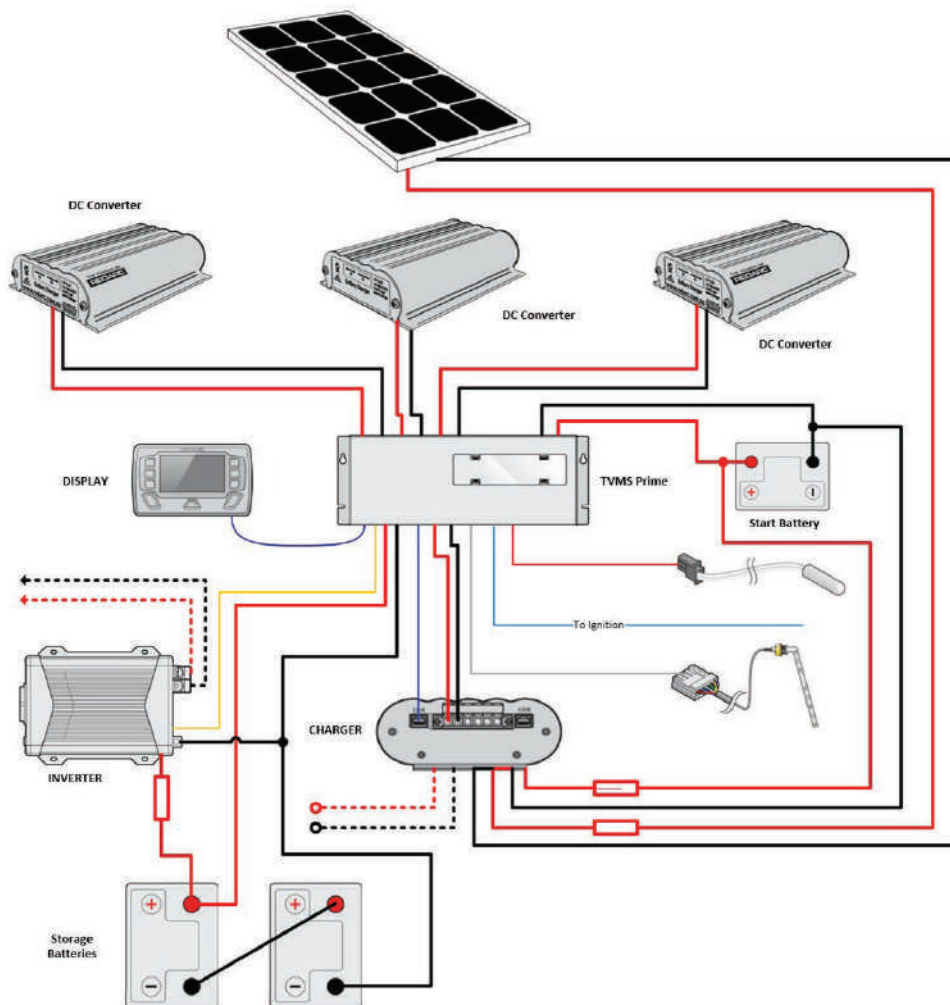


Technical Characteristics

Power Subsystem:

The power subsystem is designed in a way to provide full autonomy to the telecom, surveillance and IT equipment. It consists of the following components:

1. 12V Solar Charge Controller to combine power from the solar PV panel, vehicle battery and any AC source.
2. Lithium batteries that can provide an autonomy of 8 hours to the telecom, surveillance and IT equipment.
3. Inverter to provide AC output to any 220VAC devices.



Technical Characteristics

Foldable Solar Panel:

The 240W monocrystalline solar blanket is not only lightweight and compact: it is rugged for off-road conditions and capable of capturing maximum charge in full sun and low-light conditions.

The flexible and convenient monocrystalline solar blanket is packed with lots of value: it can be folded up into a neat package and offers flexibility that is not available with fixed or folding panels. It can be easily folded and stored when the vehicle is moving.



SOLAR CELL TYPE	OPEN CIRCUIT VOLTAGE	WATTS	FRAME OR MATERIAL	MAX. POWER VOLTAGE	SHORT CIRCUIT CURRENT	WEIGHT	MAX POWER CURRENT
<i>Monocrystalline</i>	<i>21.5V</i>	<i>240W</i>	<i>Canvas</i>	<i>18V</i>	<i>14.2A</i>	<i>7Kg</i>	<i>13.4A</i>

Solar Charge Controller:



DC to DC In-Cabin Battery Charger is the next evolution of the BCDC platform that has been powering off-grid applications for over 10 years.

The BCDC Core is the perfect DC to DC charging solution for in-cabin, canopy, or battery box setups where dustproofing and weatherproofing are required.

Each BCDC Core features tried and tested dual input DC charging technology plus an MPPT solar regulator and Green Power Priority all in the familiar and compact BCDC form factor. These features allow the BCDC Core to efficiently charge from the alternator, the AC source and solar simultaneously, ensuring maximum charge capacity no matter the situation.

SOLAR INPUT VOLTAGE	SYSTEM INPUT VOLTAGE	CONTINUOUS RATING	OPERATING TEMPERATURE	NOMINAL OUTPUT POWER	SYSTEM OUTPUT VOLTAGE
9 – 32V	9 – 32V	40A	-15°C to 80°C	600W	12V



Technical Characteristics

Total Vehicle Management System (TVMS):

Total control at your fingertips:

The TVMS provides an unprecedented level of control and automation. Control accessories via the physical screen or Bluetooth connected mobile device.

Monitor:

When combined with the TVMS screen and Manager30 battery management system, the TVMS provides real time and accurate state of charge, power input/output and ambient temperature information.

Six dedicated tank level sensor inputs and two ambient temperature inputs make the TVMS the all-seeing eye of the power set up.

Automation:

TVMS can be used to automate all tasks. It allows the user to switch off everything or power down non-essential loads when batteries are running low.

Control:

The TVMS system allows complete control of multiple on-board devices.

Its 10 output channels include 5x 30A and 5x 10A channels, perfect for controlling a mix of low and high-powered devices. With a max current of 80A, there will be no limitation to how many devices can run at once. A dedicated inverter channel brings the total number of channels to 11.

The TVMS can be remotely controlled using a Bluetooth app or via the included TVMS display.

Features:

- 5x 30A outputs
- 5x 10A outputs
- 80A maximum current
- 6x tank sensor inputs
- 2x temp sensor inputs
- 1x voltage sensor input
- 1x dedicated inverter output
- Easy accessible fuses



Technical Characteristics

Telecom Subsystem: Ruggedized Core Server

The ruggedized server is a high performance, low power and highly integrated Rugged Embedded Server, built in a special designed MIL IP67 housing. This allows to operate the server in any environment as no fan or air vents are implemented. The design allows to use the required MIL-38999 connectors. Therefore, the server can be used for any application, where a flexible rugged solution is needed.

Highlights:

The server housings offer space for up to 2 x 2.5" SSD and comes with internal expansion options over PCI/104-Express and mini PCI Express interfaces.

The rugged server is available in a sealed IP67 MIL housing and is designed to meet standards like MIL-STD-810G, MIL-STD-704F, MIL-STD-1275D, CE EN50155 or IEC 60945.



Key features:

- Intel Xeon CPU, up to 16 cores
- Up to 128GB ECC DDR4
- Two 10Gbit ports
- Expansions for GPGPU, RAID...
- Fanless and flexible IP67 solution



Board Key Data			
Processor	Intel Xeon D-1548	Intel Xeon D-1577	Intel Xeon D-1587
Clock speed	2.0 / 2.6GHz	1.3 / 2.1GHz	1.7 / 2.3GHz
Cores / threads	8 / 16	16 / 32	16 / 32
Smart cache	12 MB	24 MB	24 MB
Memory	up to 128 GB DDR4 ECC memory in four RDIMM slots		
TPM	over separate module (INTEL or FPGA)		
Watchdog Timer	configurable granularity 10 ms, 1 s or 1 minute, results in a timeout from 2.5 seconds up to 4 hours		
Indicator LEDs	power, reset, various others		
Interfaces			
Serial	1 x RS232 on connector 1 x RS232/422/485 on DB-9		
USB	4 x USB 3.0 ports on type A (D-1529 USB 2.0 only)		
LAN	2 x 1Gbit copper ports on RJ45 / 2 x 10Gbit SFP+ copper or fiber ports (D-1529 1Gbit SFP only) Optional LAN expansion with UNIGET, up to 6x Gbit		
Internal Expansions			
mPCIe	4 x mPCIe PCI Express Gen2 x1		
PCI/104-Express	1 x PCIe x8		
PCIe x16	1 x PEG graphic expansion		
SATA	2 x mSATA / 2 x m.2 Key M ports		
RAID	optional RAID controller board with on-board memory and flash, up to 8 x SAS/SATA ports, RAID 0/1/5/10 support		

Baseboard Management Controller (BMC)	
Memory	DDR4-1600 up to 1GB
Graphics	ESD protected up to 1920 x 1200
LAN	1 x GBE port, ESD protected
BIOS	redundant AMI BIOS FLASH
Power	
Input Voltage	19 - 36 VDC input range, ESD and EMC protected power input (redundant capability) reverse polarity protection, load dump protection reset & power button optional internal UPS system, optional galvanic separation, other voltage possible ignition input specifically for vehicles
Power consumption	25 - 100 Watt (depending of CPU), Enhanced Intel Speed Step Technology
Environment	
Storage Temperature	-45°C up to +85°C (-49°F to +185°F)
Operating Temperature	-20°C to +60°C (Fanless)
Relative Humidity	5% to 95% non condensing, optional coating available
Standard Compliance	
The MXCS is designed to meet or exceed the most common standards. Particular references are:	
EMC	EN 55022, EN 55024, EN 61000, MIL-STD-461E
Shock & Vibration	EN 60068
Environmental & Safety	EN 50155, MIL-STD-810G, EN 60601, IEC / EN 62368
Approval List	CE, IEC 60945, IACS E10



Technical Characteristics

Telecom Subsystem: Telescopic Mast

The telescopic mast and tower system provides effective solutions to everything from mobile communications to broadcast, cellular and specific custom applications. Reliable and durable, our galvanized steel masts allow higher payload capacity without sacrificing speed or performance.

The manual push-up mast can be extended to a full height of 5m in one minute or less. The manual telescopic mast features quick manual crank. Extend the mast manually by pushing up the sections through the crank. This mast is ideal for fast deployment of antennas and instruments.

Specifications:

- Extended Height: 4.9m
- Nested Height: 1.44m
- Number of Sections: 3
- Payload Capacity: 40Kg
- Maximum Survival Wind Speed: 120Km/h
- Mast Only Weight: 15Kg

