RAFT SYSTEM

Robust, Off-Grid Energy for Challenging
Environments.

PRODUCT BROCHURE

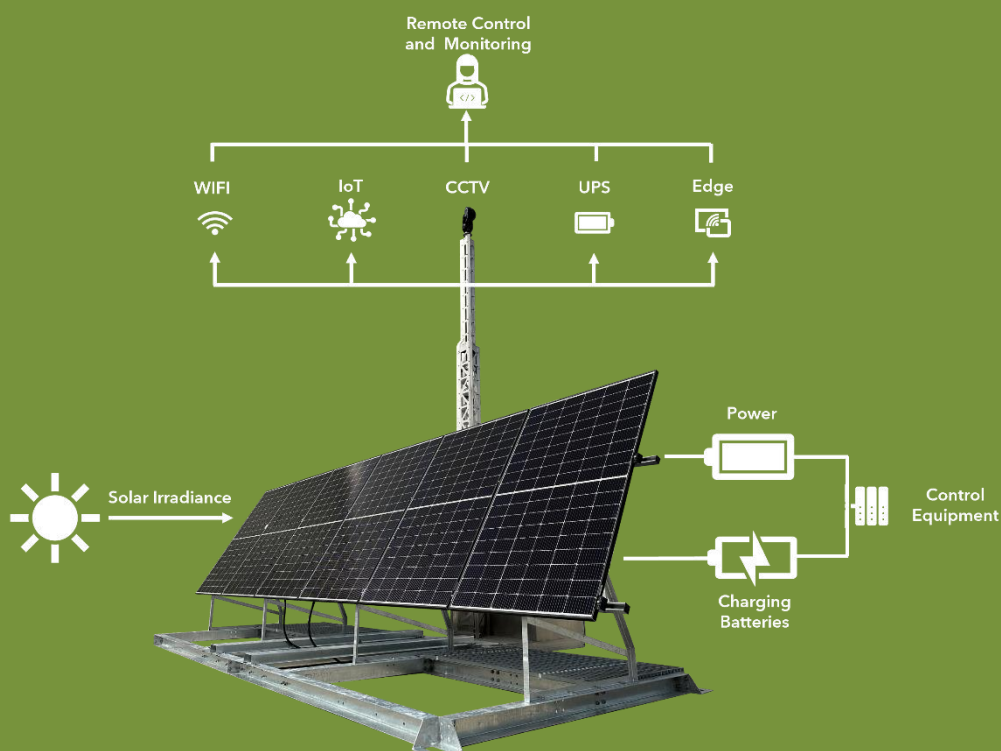SUNSTONE
SYSTEMS

RAFT SYSTEM

The Rapid Autonomous Frontier Technology (RAFT) System by Sunstone Systems is a rugged off-grid power solution uniquely designed for remote areas, seamlessly fusing surveillance, renewable energy, and connectivity. It delivers clean power and advanced data management, making it essential for extreme and hostile environments. Combined with our integrated solar array, QuickGrid System, RAFT offers remarkable power capacity, scalability, and efficiency in any location.

WHAT DOES IT DO?

The RAFT System is not just a surveillance and security powerhouse; it's also a renewable energy hub. In remote locations where power sources are scarce, the RAFT System steps in as a versatile solution, delivering clean and reliable off-grid power to a wide range of devices, from IoT sensors to radar systems, cameras, wireless communication equipment, and even satellite connectivity terminals.

STANDARD FEATURES

- **Extreme System Enclosure:** A rugged and extreme weather-resistant cabinet designed for longevity and performance in harsh conditions
- **Internal Control and Power Management System (ICPMS):** An efficient control system that manages power distribution, integrated IoT devices and sensors
- **Advanced Battery System:** Designed to store and deliver power as required, guaranteeing uninterrupted functionality
- **QuickGrid Integration:** The ability to integrate QuickGrid for increased power capacity and energy efficiency
- **Integrated IoT Mast:** A robust telescoping mast for mounting sensors, IoT devices and antennas for communication and data collection

Remote Control
and Monitoring

WIFI   IoT   CCTV   UPS   Edge

Power

Solar Irradiance

Control
Equipment

Charging
Batteries

BENEFITS

The RAFT System builds upon the success of our Solar CCTV System, amplifying its capabilities to deliver unprecedented power, substantial CO2 savings, and versatile deployment options across all frontiers. This includes:

- **Easy Deployment:** No complex foundation needed; deployable on flat terrain
- **Instant Power:** Rapid deployment with QuickGrid for instant off-grid energy
- **CO2 Savings:** 2.4KW solar array for significant CO2e reduction
- **Material Durability:** 316L stainless steel construction for extreme environments
- **Thermal Insulation:** Maintains component operation in extreme temperatures
- **Centralised Control:** All system control equipment in one cabinet
- **IP-Rated Protection:** Protects against dust and moisture for uninterrupted operation
- **Charging Interface:** Harting Extreme
- **Wide Temperature Range:** Operates from -40°C to +50°C
- **EMC Compliance:** Meets electromagnetic compatibility standards
- **Certification:** EAC certified for quality and compliance and constructed to Eurocodes and British Engineering Standards

APPLICATIONS

Off-grid Energy Generation
Provides clean and reliable renewable power for various devices, including IoT sensors, radar systems, cameras, and wireless communication equipment.

Connectivity Hub
Enhances connectivity in remote environments by seamlessly integrating with data collection devices, facilitating real-time data transmission and analysis.

UPS Infrastructure Power
Powers important infrastructure in remote locations, ensuring continuous operation and reliability.

Disaster Response
Rapidly deployable energy source for emergency communication, monitoring, and coordination.

Border Control
Enhances border monitoring and surveillance capabilities, aiding in border control and enforcement efforts.

DATASHEET

Extreme Enclosure

- **Dimensions:** 1.5 x 1.5 x 6m (H)
- **Material:** 316L Stainless Steel
- **Thermal Insulation:** Cabinet is insulated with polyisocyanurate, proven to operate in extreme conditions, the cabinet is rated from -40°C to +50°C
- **Internal Control and Power Management System:** Designed to optimise solar PV yield and maintain the battery for year-round peak performance
- **Charging Interface:** Harting Extreme
- **Certification:** Constructed in accordance with Eurocodes and British Engineering Standards, including Eurocode 3 for the design of steel structures (BS EN 1993-3-1:2006) and Eurocode 1 for actions on structures (BS EN 1991-1-4:2005).
- **Ingress Protection & Security:** IP66 Rated, Concealed Hinges, and Multi-Point locking system
- **Deployment:** The cabinet is designed for installation on a range of surfaces and can be moved using the integrated forklift slots
- Battery System: 48V deep-cycle AGM lead-acid battery system. Operating Temperature Range: -40°C to +50°C. Sealed and Maintenance-Free
- IoT Mast Coupling Bracket: Designed to connect the Extreme Enclosure to the IoT Mast
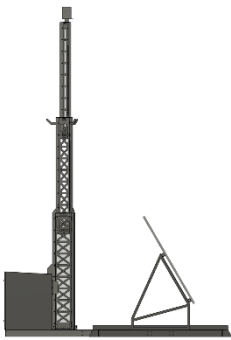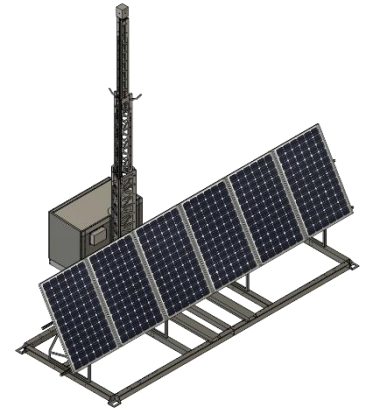
QuickGrid System

- **Dimensions:** 6 x 2.4m
- **Material:** Galvanized steel and modular construction
- **Solar Panels:** 6 x 405w high efficiency monocrystalline solar panels, pitched at the optimum solar irradiance angle for the location
- **Ballast Platform:** Steel mesh internal platform to install ballast when the QuickGrid is remote from the Extreme Enclosure
- **Extreme Enclosure Integration:** The system includes bracketry to bolt the system cabinet to the QuickGrid
- **Wind Resistance:** The system conforms to windspeeds up to 40m/s

IoT Mast Specification

- **Dimensions:** 6m
- **Material:** 316L stainless steel
- **Telescopic Design:** 3-section telescopic mast, extending to 5.4m (6m with swan neck), fabricated from durable 316L stainless steel
- **Stabilisation Brackets:** Equipped with stabilizing brackets to ensure rigidity and stability, even in high winds
- **Integrated Design:** The mast is seamlessly integrated into the system cabinet, removing the need for a concrete base
- **Maintenance Accessibility:** The IoT Mast retracts to approximately 2m, facilitating camera maintenance without additional equipment or working from height

*ATEX Options on Request

Security
- CCTV Surveillance
- Smart Analytics
- Perimeter Detection
- Remote Monitoring

Telecoms
- Temporary Event WIFI Mobile Hotspot
- Point to Point Networks

Oil & Gas
- Site Security
- Wellhead Telecoms
- Gas Detection

Rail
- Trackside Monitoring
- Set down Yard Security
- Passenger Surveillance & Monitoring

Construction
- Site Security
- Health & Safety
- 24/7 Hotspot & WIFI

Highways
- Traffic Monitoring
- Average Speed Detection (TASCAR)
- Air Quality Monitoring

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