Environmental Monitoring Unit
RaySite 100-1-1-D1

RaySite is based on hardware that operates on a powerful Linux platform. It can connect with other devices that are installed in a Telecom Site for monitoring and control purposes. RaySite allows the remote management of the Telecom Site to enhance its operational efficiency, reduce the down time and increase its safety.

The RaySite system is a 1U rack-mount device designed for installation in remote shelters, cabinets, or enclosures. It features a multitude of built-in I/Os and various types of sensors, listed below, with the capability for expansion through the provided expansion port. Data acquisition and configuration settings can be implemented via HTTP(s), SNMP, RestAPI, and Modbus protocols, while Kafka protocol is also supported for data delivery. The unit allows remote access via an Ethernet port, enabling real-time monitoring. In the event of an internet connection loss, the unit can still communicate remotely via optional 4G/5G expansion modules for redundancy.

Features

Hardware

- 1x WAN Ethernet port (10/100Base-T)
- 4x LAN Ethernet ports (10/100Base-T). All ports are configurable (DHCP, routing, port forwarding etc)
- PoE+ IEEE 802.3at (30.0 Watts) on all LAN ports
- SFP port to install SFP fiber module. Port operation configurable (DHCP, routing, port forwarding etc)
- Two USB ports for configuration, upgrade, and storage
- SD-card slot for configuration, upgrade, and storage
- RS-232 console port for Linux access
- LED indication lights (power, alarms)
- On-board ESD protection and over-voltage protection

Software

- Linux operating system
- HTTPS web server, allowing secure multi-user access
- SSL/HTTPS/SFTP
- REST API for monitor and configuration of the device and peripherals
- Kafka protocol support
- SNMPv1, SNMPv2c, SNMPv3
- SSO via OIDC authentication protocol

Interfaces for site equipment

- 16x pairs of discrete contact closure inputs. All contact closure inputs have common ground
- 3x relay outputs for genset, HVAC etc. NO, NC and C contacts available on each relay
  Maximum switched voltage: 60 Va.c. or Vd.c - Maximum switched current: 0.8 A
- 2x analog inputs
  Voltage range: -60 V to + 60V - Resolution: 0.1 V or better
  Accuracy: +/- 0.5 V or better - Sampling rate: 1 sample per second
  All analog inputs have common ground.
- 2x isolated RS-485 ports for communication with Modbus enabled devices
- 1-Wire RJ45 port to attach temperature and humidity sensors

Raycap

www.raycap.com

Environmental Monitoring Unit
RaySite 100-1-1-D1

Expandability (optional add-on modules)

Option 1: Analog inputs (1x 4-20mA, 2x configurable)

Option 2: Analog inputs and relay outputs (4x -60V to +60V, 2x relay outputs)

Option 3: Digital inputs (8x)

Option 4: 4G communications modem

Option 5: 4G/5G communications modem

Option 6: 4G/5G communications modem with Wi-Fi IEEE 802/11n

Option 7: Inmarsat GEO satellite communications modem

Electrical Specifications

DC power supply	-40 to -58Vdc
Power Usage	5W (typical), ≤20W (max), excluding any PoE consumption

Environmental Specifications

Operating temperature	-40 to +60°C
Operating humidity	0 to 95% (non-condensing)

Mechanical Specifications

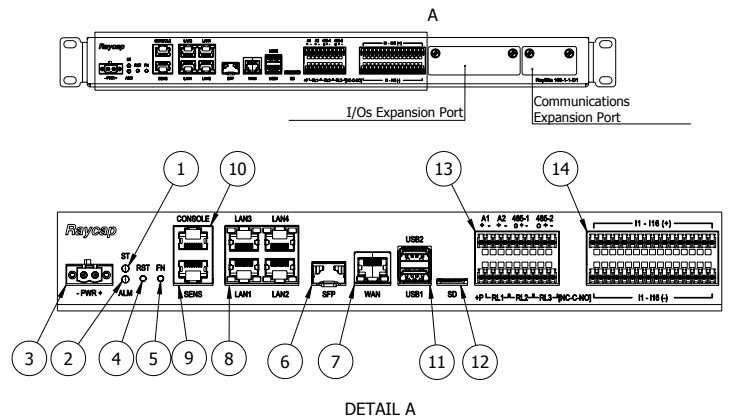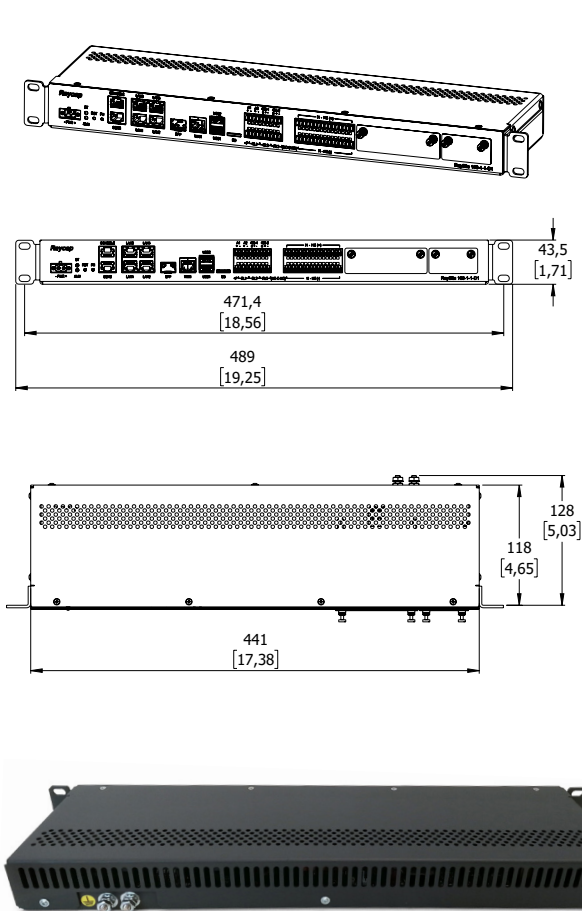|	
Dimensions W x D x H	441mm x 128mm x 43.5mm [17.38" x 5.03" x 1.71"]
Weight	2.5 kg [5.5 lb]
Mounting	19" or 23" rack (appropriate mounting kits included)

Standards Compliance

UL 62368, NEBS 3, RoHS

Compliance/Certifications

UL*, NEBS*

Product Diagram

I/Os Expansion Port

Communications Expansion Port

DETAIL A

1. Power/status LED
2. Alarm LED
3. Power input
4. Reset button
5. Function button
6. SFP port
7. RJ45, WAN Ethernet 10/100Base-T port
8. 4x RJ45, LAN Ethernet 10/100Base-T ports with PoE+IEEE 802.3at support
9. RJ45 port for temperature and humidity sensor
10. RJ45 RS232 console port
11. 2x USB ports
12. SD card slot
13. 2x analog inputs, 2x RS485 ports, 3x relay outputs
14. 16x pairs of discrete closure inputs

pending