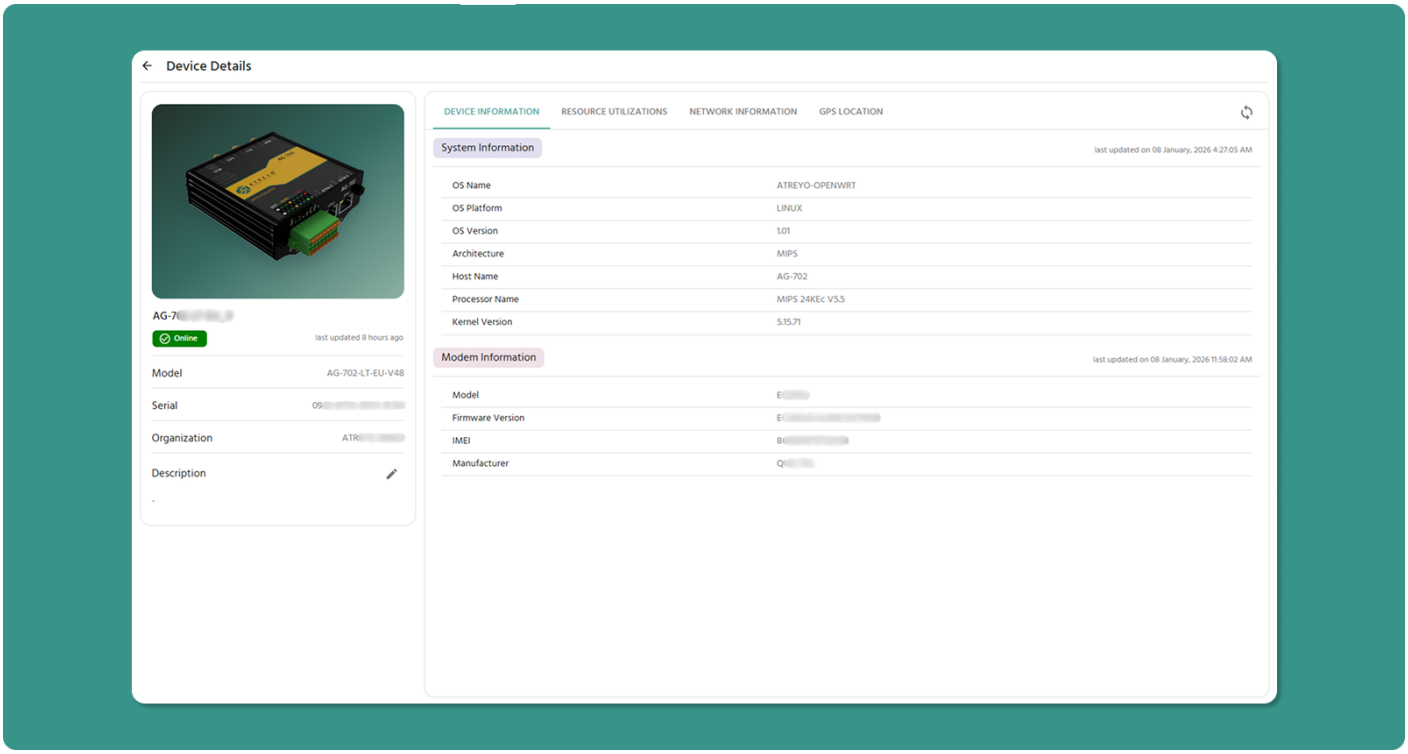
Understanding Device Details & Status

The Device Detail Page is your comprehensive monitoring dashboard for individual devices. It provides system information, resource utilization, network connectivity details, and GPS location.



Accessing Device Detail Page

From Device List:

1. Navigate to Devices section
2. Locate target device in table
3. Click the device Name (underlined link)
4. Device Detail Page opens

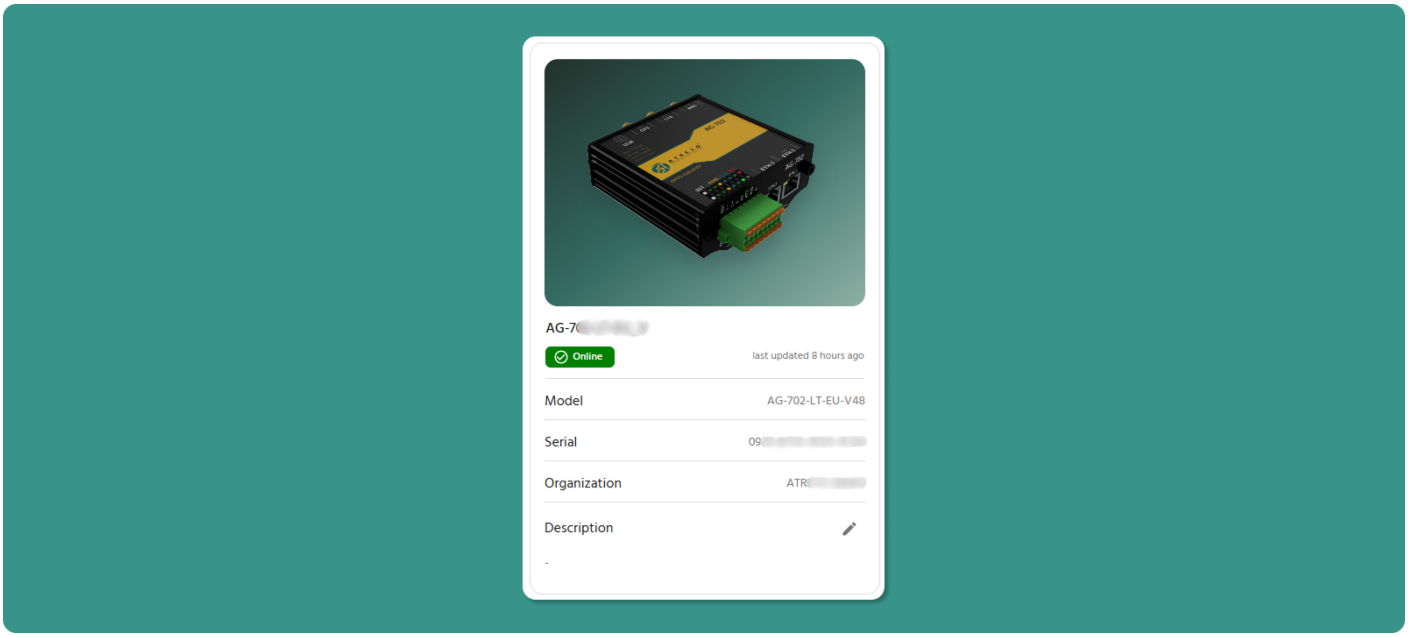
Page Layout Overview

The Device Detail Page uses a two-column layout:

Left Panel: Static device identity and metadata
Right Panel: Dynamic monitoring data across four tabs

At-a-Glance Information (Left Panel)

The left panel displays the core identity and information for your device.



#	Field	Description	Example
1	Model Image	Visual representation of device model	Gateway illustration
2	Device Name	Custom name assigned during registration	Delhi_Bus_207
3	Online Status	Connection state with timestamp	"Online since 5 minutes ago"
4	Model Name	The specific product name of your gateway.	AG-207-LT-EU
5	Serial-ID	Unique 16-character device identifier	1A2B-3C4D-5E6F-7G8H

#	Field	Description	Example
6	Organization	Assigned organization	ATREYO Level-1
7	Description	Optional notes/details about device	"Factory Floor A, Bay 3"
8	Edit Button	Pencil icon to modify description	✏ Click to edit

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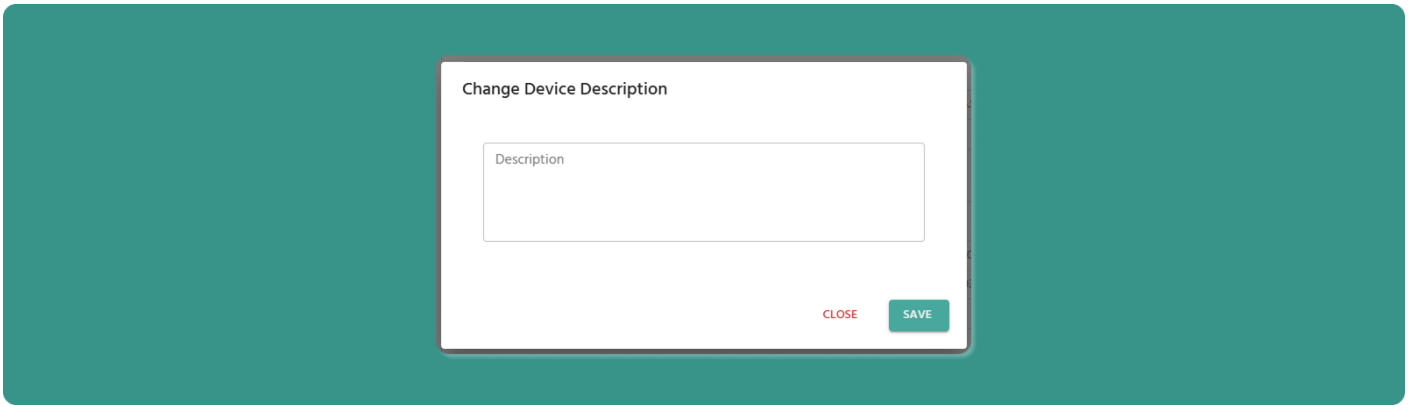
Editing Device Description



To Edit Description:

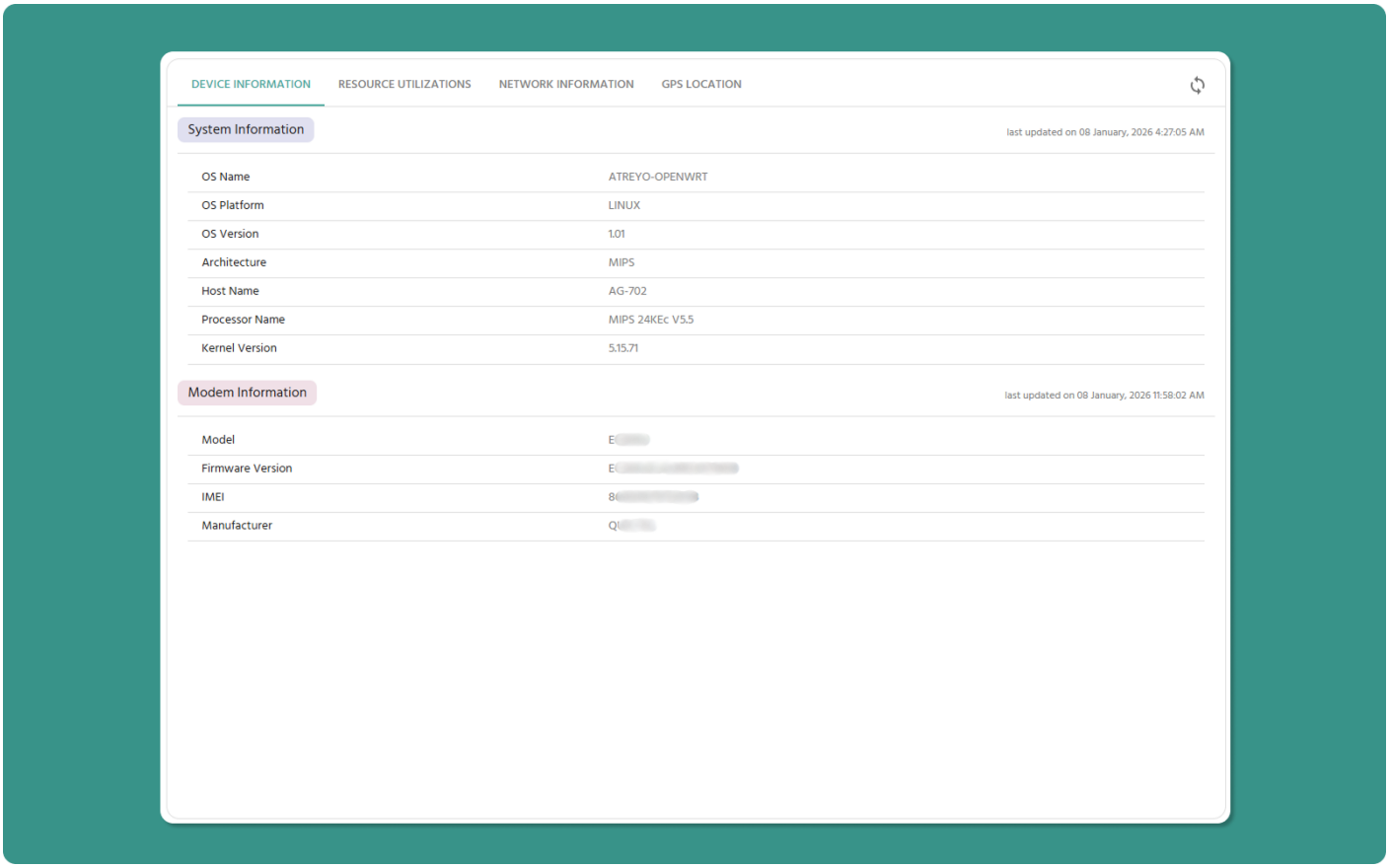
1. Click Edit button (✏ pencil icon)
2. Edit Description dialog opens
3. Modify text (max 1000 characters)
4. Click SAVE to confirm changes
5. Click CLOSE to discard changes

Use Cases for Description Field:

- Physical location updates
- Maintenance schedules
- Contact information for site
- Network configuration notes

Detailed Monitoring Tabs (Right Panel)

The right panel contains four tabs for in-depth device monitoring. A Refresh button (□□) in the top-right corner manually updates tab data.

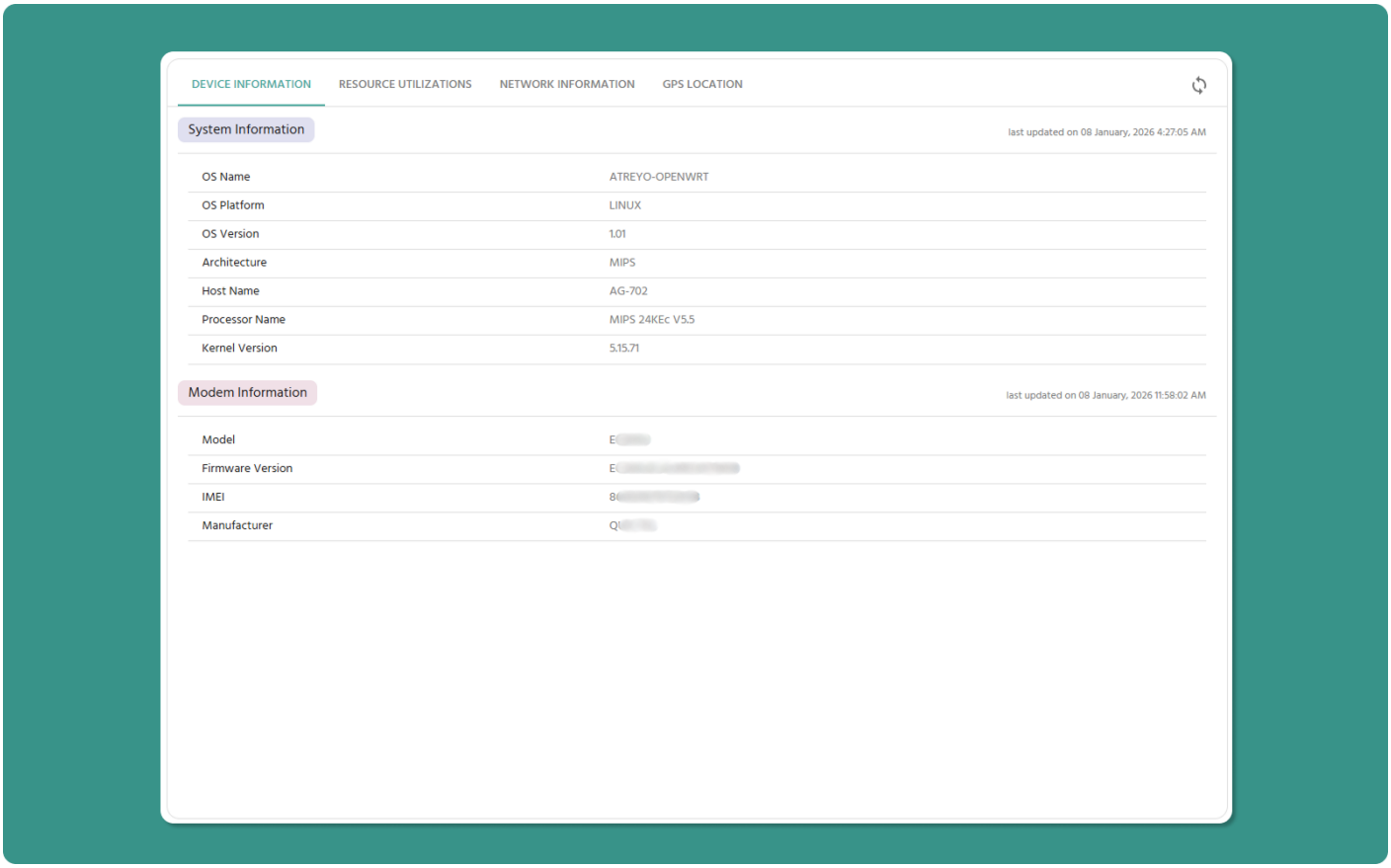


Tab Navigation:

1. Device Information
2. Resource Utilization
3. Network Information
4. GPS Location

Tab 1: Device Information

This tab displays static technical specifications of your device's operating system, hardware, and cellular modem.



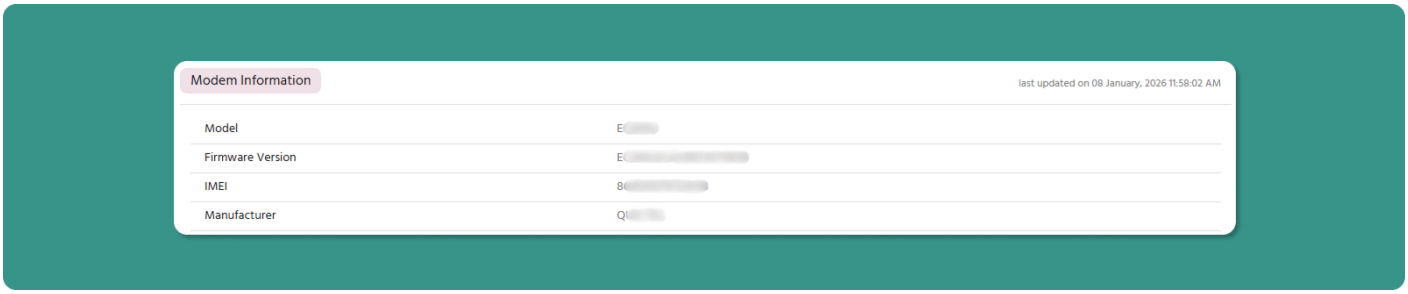
Section A: System Information

Core operating system and processor details.

Parameter	Definition	Example
OS Name	Operating system commercial name	OpenWRT, Debian, Ubuntu
OS Platform	OS family or kernel type	Linux
OS Version	Specific release number	10.0.22621, 24.04 LTS
Architecture	CPU instruction set	ARMv7l, ARM64, MIPS
Host Name	Device model name	AG-702
Processor Name	CPU model designation	MIPS 24KEc V5.5, ARMv7 Processor rev 5

Section B: Modem Information

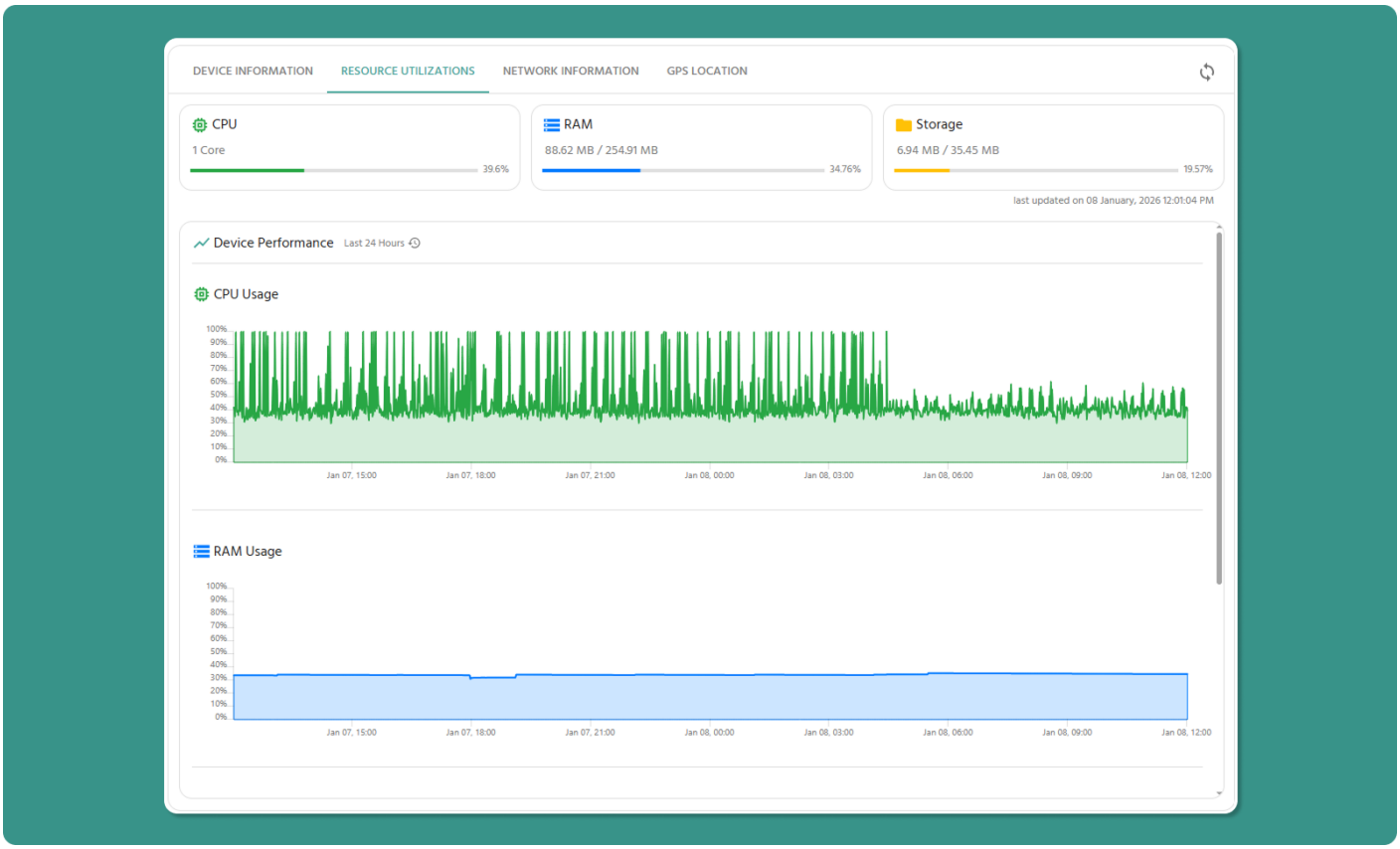
Cellular modem hardware and firmware specifications.



Parameter	Definition	Example
Model	Manufacturer's modem product designation	-
Firmware Version	Embedded software version number	V1.01.03, 2.1.25
IMEI	International Mobile Equipment Identity (15 digits)	123456789111111
Manufacturer	Company that produced the modem	-

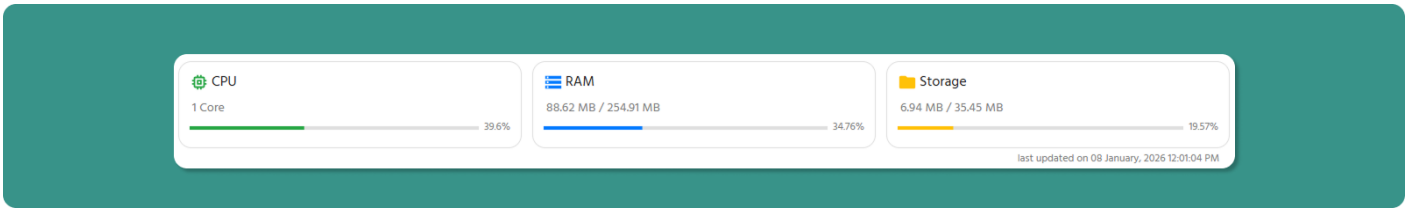
Tab 2: Resource Utilization

This tab is your device health dashboard, showing performance metrics and 24-hour historical trends.



Metrics Cards

Three cards display current resource usage across critical components.



CPU Utilization

Displays:

- Number of CPU cores
- Current utilization percentage

Example:

CPU: 1 cores

Utilization: 45%

RAM Utilization

Displays:

- Total RAM capacity
- Currently used RAM
- Utilization percentage

Example:

RAM: 128 MB total

Used: 66 MB (51.5%)

□□ Memory Management: High RAM usage isn't always problematic. Modern systems use available RAM efficiently. Concern arises when usage stays at 90%+ for extended periods.

Storage Utilization

Displays:

- Total storage capacity
- Used storage space
- Utilization percentage

Example:

Storage: 512 MB total

Used: 270 MB (52.73%)

Common Storage Consumers:

- Logs
- Application data

24-Hour Performance Graphs

Below the real-time cards, three line graphs display historical resource usage trends.

Graph Specifications:

- Time Range: Last 24 hours
- Data Points: Every 1 minute
- X-Axis: Time (hours)
- Y-Axis: Utilization percentage (0-100%)

Graph Types:

1. CPU Usage Graph (Green line)
2. RAM Usage Graph (Blue line)
3. Storage Usage Graph (Yellow line)

Analyzing Performance Trends

Normal Patterns:

CPU:

- Fluctuates based on workload
- Spikes during data transmission or processing
- Should return to baseline after tasks complete

RAM:

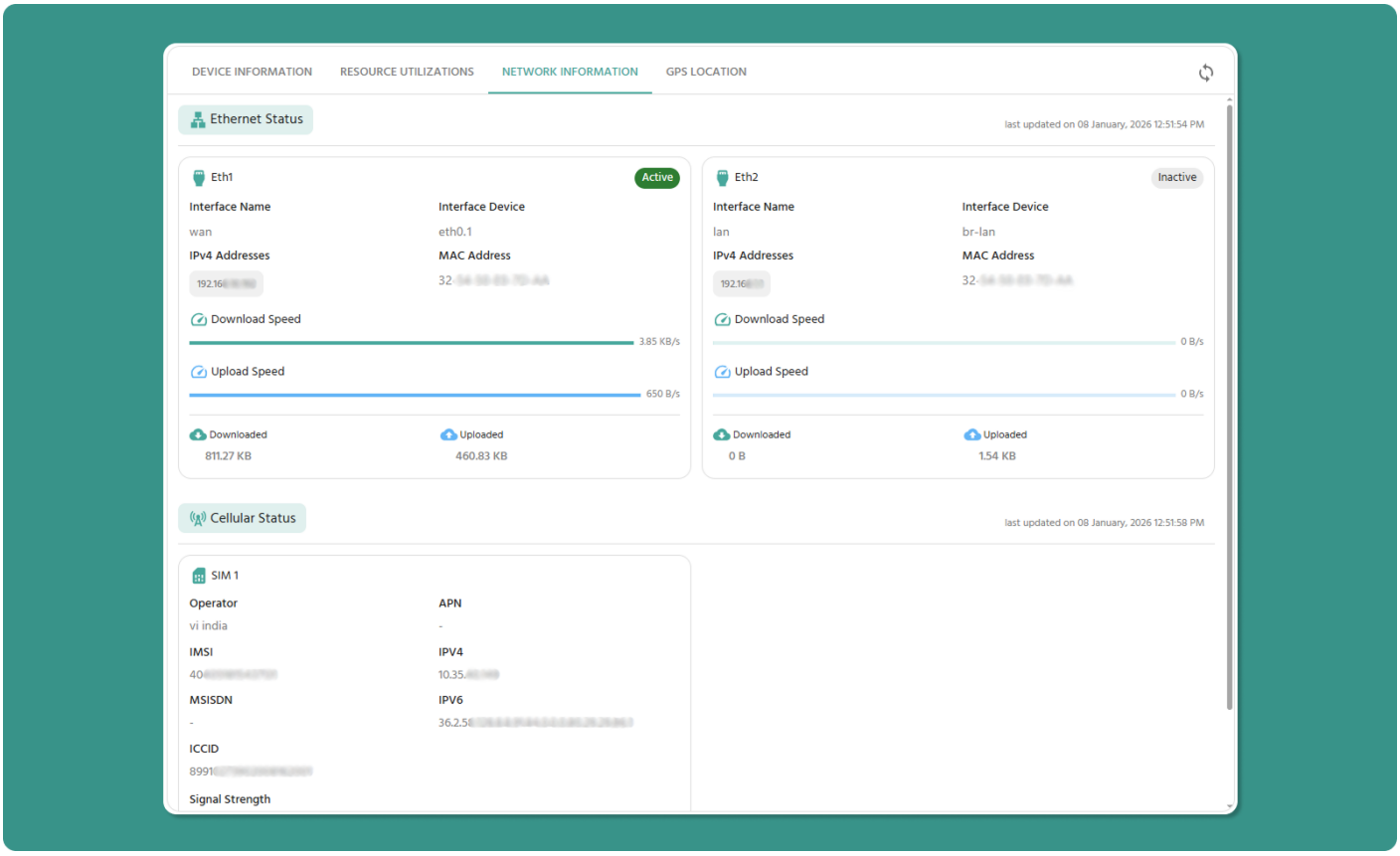
- Typically steady with gradual increases
- May step up when new processes start
- Rarely decreases significantly without restart

Storage:

- Gradually increases over time
- Sudden jumps indicate large file writes
- Decreases indicate log rotation or cleanup

Tab 3: Network Information

This tab provides detailed connectivity information for both wired (Ethernet) and wireless (Cellular) network interfaces.

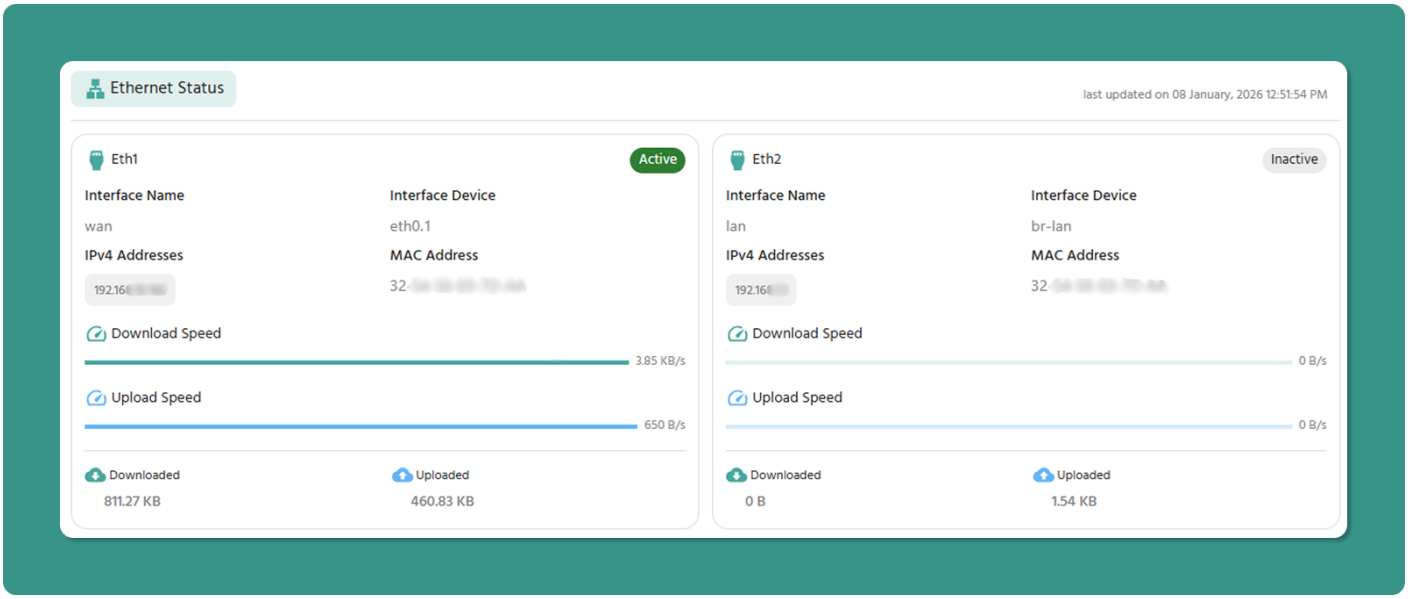


The tab is organized into two sections:

1. Ethernet Card Information
2. Cellular Card Information

Section A: Ethernet Card Information

Wired network interface details for WAN (internet) and LAN (local network) connections.



Typical Display: Multiple ethernet interfaces may be shown (e.g., WAN, LAN, LAN2)

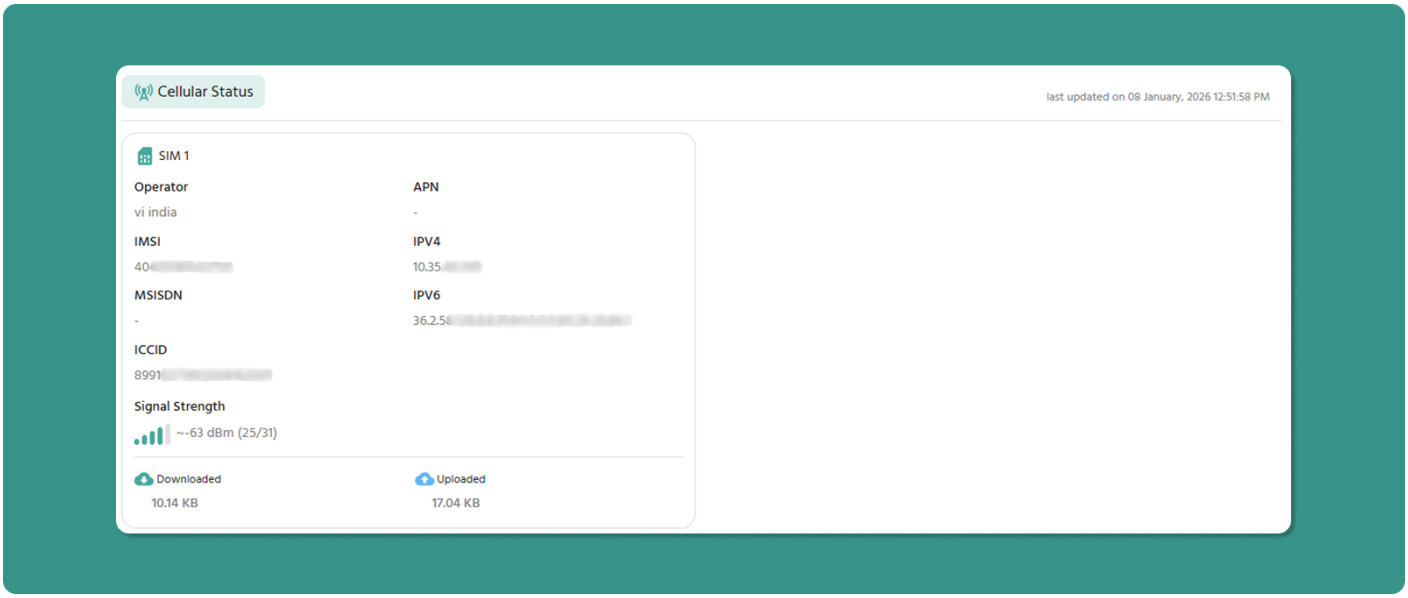
Ethernet Parameters

Parameter	Definition	Example
Interface Name	Logical network function identifier	WAN (internet-facing), LAN (local network)
Interface Device	OS-assigned hardware identifier	eth0.1 (VLAN sub-interface), br-lan (bridge)
IPv4 Address	Network address for IPv4 communication	192.168.1.1 (router), 192.168.1.105 (client)
MAC Address	Unique 12-digit hardware identifier	00:1A:2B:3C:4D:5E
Download Speed	Current incoming data transfer rate	100 Mbps, 1 Gbps
Upload Speed	Current outgoing data transfer rate	50 Mbps, 900 Mbps
Downloaded Data	Total data received since last reset	5.2 GB, 1.3 TB

Parameter	Definition	Example
Uploaded Data	Total data transmitted since last reset	850 MB, 450 GB

Section B: Cellular Card Information

Wireless cellular network connectivity details for mobile or backup internet connections.



Cellular Parameters

Parameter	Definition	Example
Operator	Telecommunications carrier providing service	Vodafone, AT&T, T-Mobile, Airtel
APN	Access Point Name - Gateway for mobile internet	internet.voda.ie, broadband, airtelgprs.com
IMSI	International Mobile Subscriber Identity (15 digits)	310410123456789
IPv4	Mobile network IP address (version 4)	10.123.45.67 (carrier private IP)
IPv6	Mobile network IP address (version 6)	2001:0db8:85a3::8a2e:0370:7334
MSISDN	SIM card number	+447700900000, 5551234567
ICCID	Integrated Circuit Card ID - SIM serial number	89014103210123456789

Parameter	Definition	Example
Signal Strength	Cellular signal quality in dBm	-75 dBm (excellent), -110 dBm (poor)
Downloaded Data	Total cellular data received	2.1 GB
Uploaded Data	Total cellular data transmitted	450 MB

Interpreting Signal Strength

Signal strength is measured in dBm (decibel-milliwatts), a logarithmic scale where higher (less negative) values indicate stronger signals.

Signal Quality Scale:

dBm Range	Quality	Description	Connectivity
-50 to -70	Excellent	Strong, clear signal	Full-speed data, reliable
-70 to -85	Good	Adequate signal	Good data speeds, stable
-85 to -100	Fair	Weak signal	Reduced speeds, occasional drops
-100 to -110	Poor	Very weak signal	Slow speeds, frequent disconnects
-110 to -120	Critical	Barely detectable	Unusable, constant drops

Factors Affecting Signal:

- Distance from cell tower
- Physical obstructions (buildings, terrain)
- Weather conditions
- Network congestion
- Antenna quality and positioning

Cellular Troubleshooting Quick Guide

Problem: Poor Signal Strength (<-100 dBm)

Solutions:

1. Antenna Positioning: Relocate device or adjust external antenna
2. Alternative Location: Move device to higher elevation or near window

Problem: No Cellular Connection

Check:

- □ SIM card inserted correctly
- □ Carrier account is active and paid
- □ APN settings match carrier requirements
- □ Device is in carrier coverage area
- □ IMEI is not blocked by carrier

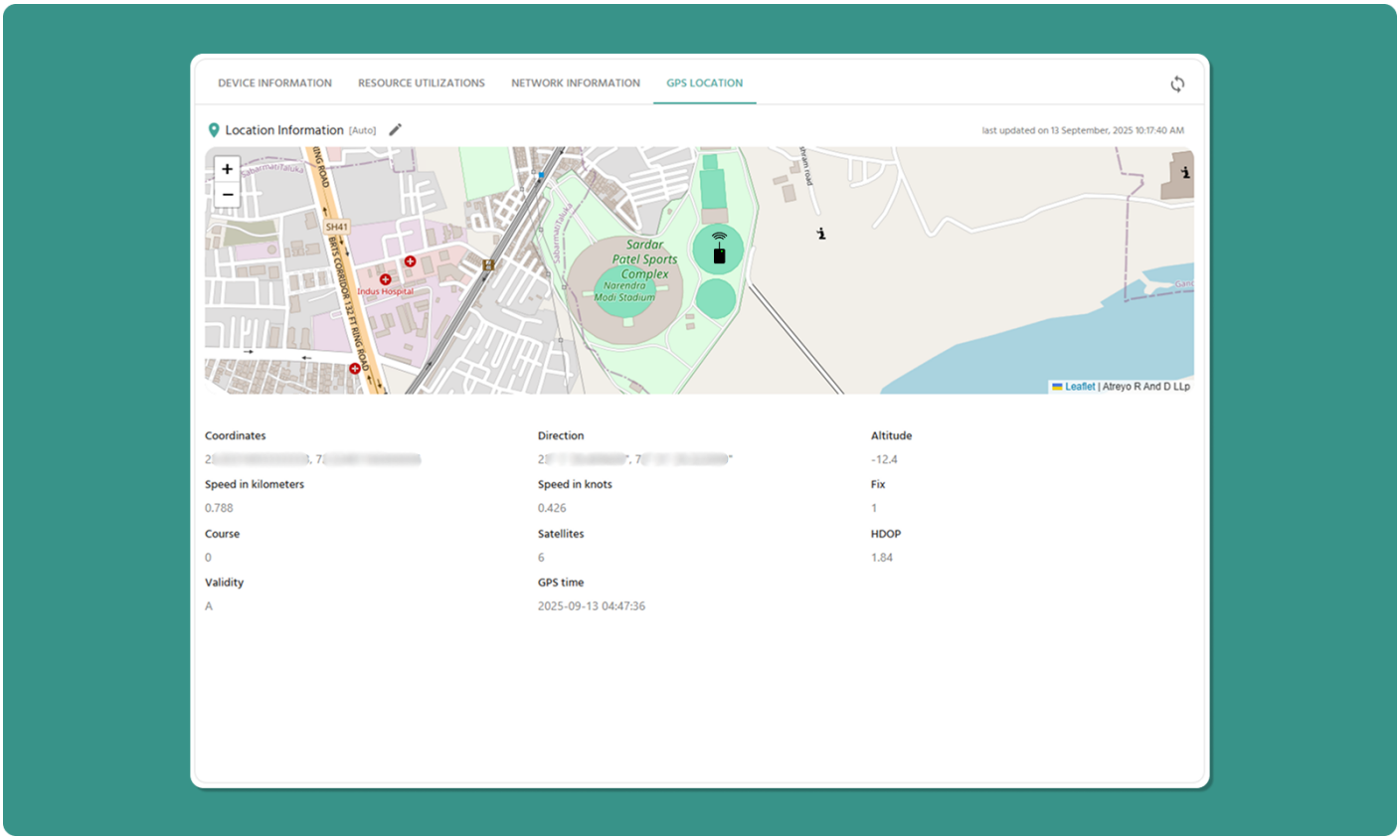
Problem: High Data Usage

Investigate:

- Check Downloaded/Uploaded Data totals
- Review application data transmission settings
- Confirm data is being sent via cellular (not ethernet)
- Look for unauthorized usage or malware

Tab 4: GPS Location

This tab manages device location tracking through automatic GPS data or manual coordinate entry.



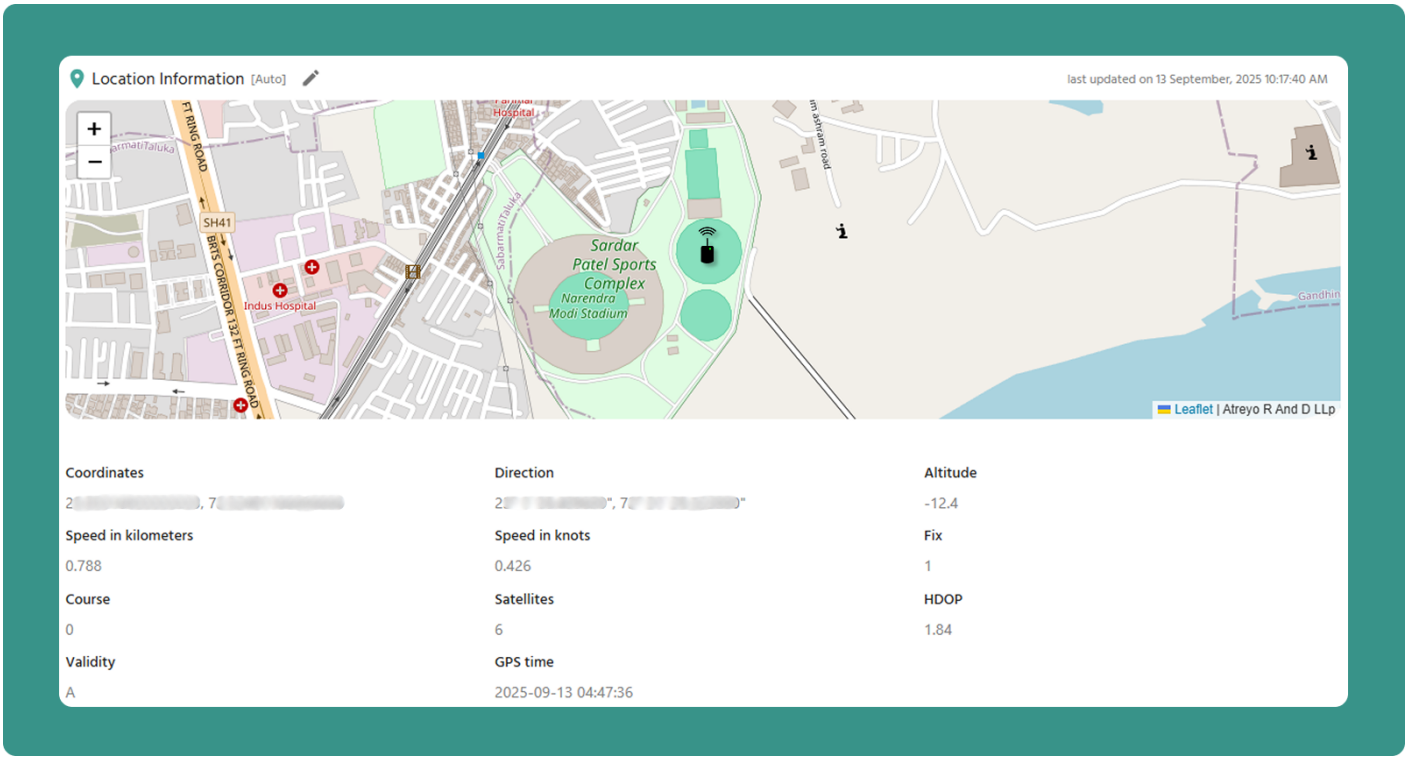
Location Tracking Modes

The tab offers two mutually exclusive modes:

1. Auto Mode: Automatic GPS tracking
2. Manual Mode: User-defined coordinates

Option A: Auto Mode

Automatic location tracking using the device's internal GPS modem.

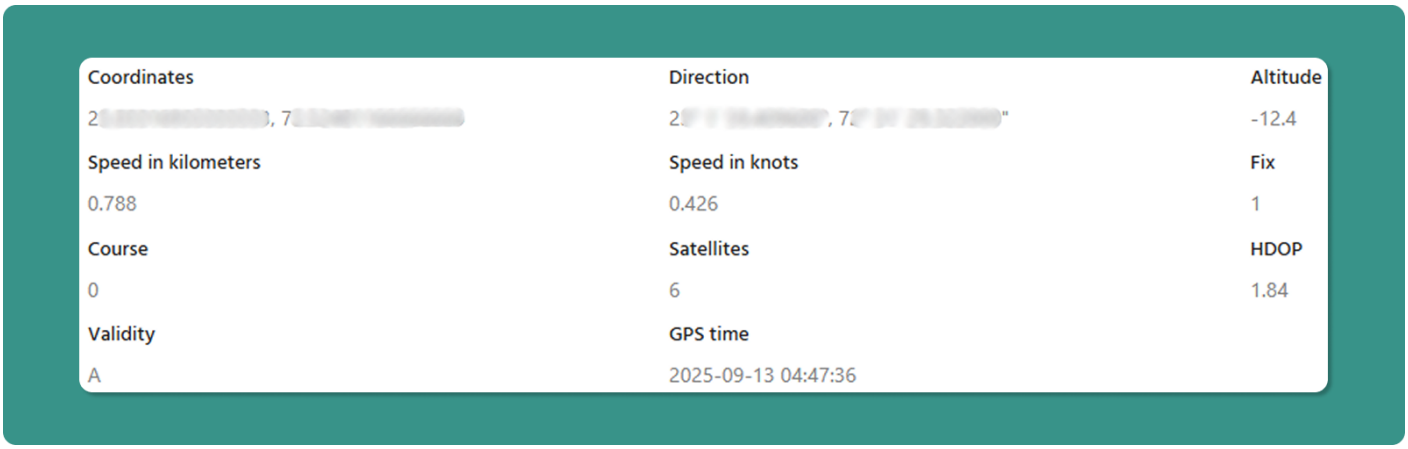


How It Works:

1. Device's cellular modem contains GPS receiver
2. Modem locks onto GPS satellites (requires 4+ satellites)
3. Location data calculated on device
4. Coordinates transmitted to Atra RMS
5. Map updates automatically

GPS Data Fields

When Auto mode is active and GPS has a fix, the following data is displayed:



Field	Description	Example
Coordinates	Latitude and Longitude (decimal degrees)	23.0225° N, 72.5714° E
Altitude	Height above mean sea level	45 meters (147.6 feet)
Speed	Current velocity in km/h and knots	60 km/h (32.4 knots)
Direction/Course	Compass heading (0-360°)	270° (West), 45° (Northeast)
Fix	Position calculation status	"3D Fix" (lat, lon, alt)
Satellites	Number of GPS satellites locked	8 satellites
HDOP	Horizontal Dilution of Precision	1.2 (excellent accuracy)
Validity	Data reliability indicator	'A' (valid), 'V' (invalid)
GPS Time	Timestamp from GPS satellite system	2025-12-31 14:30:45 UTC

Understanding GPS Accuracy

Satellites Count:

- 4+ satellites: Minimum for 3D fix (lat, lon, altitude)
- 3 satellites: 2D fix only (lat, lon, no altitude)
- 8-12 satellites: Optimal accuracy
- <3 satellites: No position fix possible

HDOP (Horizontal Dilution of Precision):

- Quality Indicator: Lower values = better accuracy
- Scale:
  - 1.0-2.0: Excellent (typical accuracy: 1-3 meters)
  - 2.0-5.0: Good (typical accuracy: 3-10 meters)
  - 5.0-10.0: Moderate (typical accuracy: 10-30 meters)
  - >10.0: Poor (accuracy degraded)

Validity Codes:

- 'A' (Active/Valid): GPS data is current and reliable
- 'V' (Void/Invalid): GPS data is stale or unreliable

GPS Troubleshooting

Problem: No GPS Fix

Common Causes:

- □ Device is indoors (GPS requires clear sky view)
- □ Device is in metal enclosure (blocks signals)
- □ GPS antenna not connected properly
- □ Location service disabled in device settings

Solutions:

1. Move Device: Place near window or outdoors temporarily
2. Check Antenna: Verify external GPS antenna connection
3. Wait: First fix can take 5-15 minutes ("cold start")
4. Verify Settings: Ensure GPS service is enabled

Problem: Poor Accuracy (High HDOP)

Solutions:

- Improve Sky View: Remove obstructions above device
- Wait: Accuracy improves as more satellites are acquired
- External Antenna: Use high-quality external GPS antenna
- Check Environment: Avoid placement near RF interference sources

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Use Cases for Auto GPS Mode

Ideal Scenarios:

- □ Vehicle-mounted devices (fleet tracking)
- □ Mobile equipment monitoring
- □ Temporary installations requiring location verification
- □ Asset tracking applications
- □ Devices requiring location-based automation

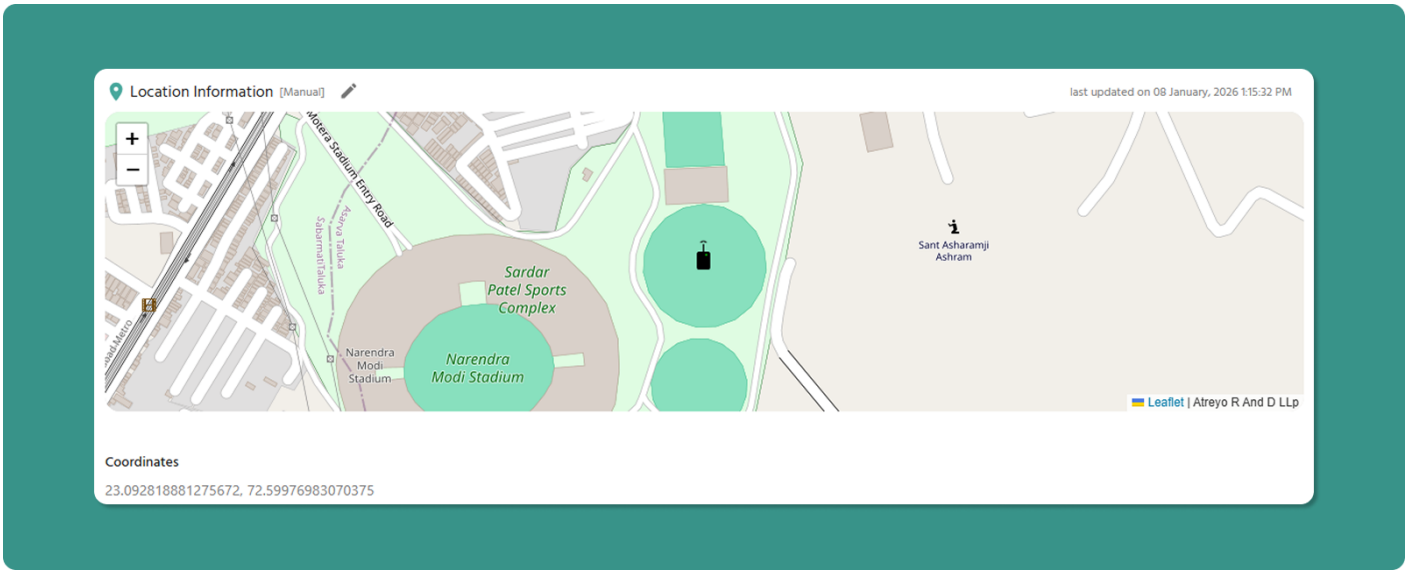
Not Recommended:

- □ Stationary indoor installations

- Underground or heavily shielded locations
- Locations with poor GPS visibility

Option B: Manual Mode

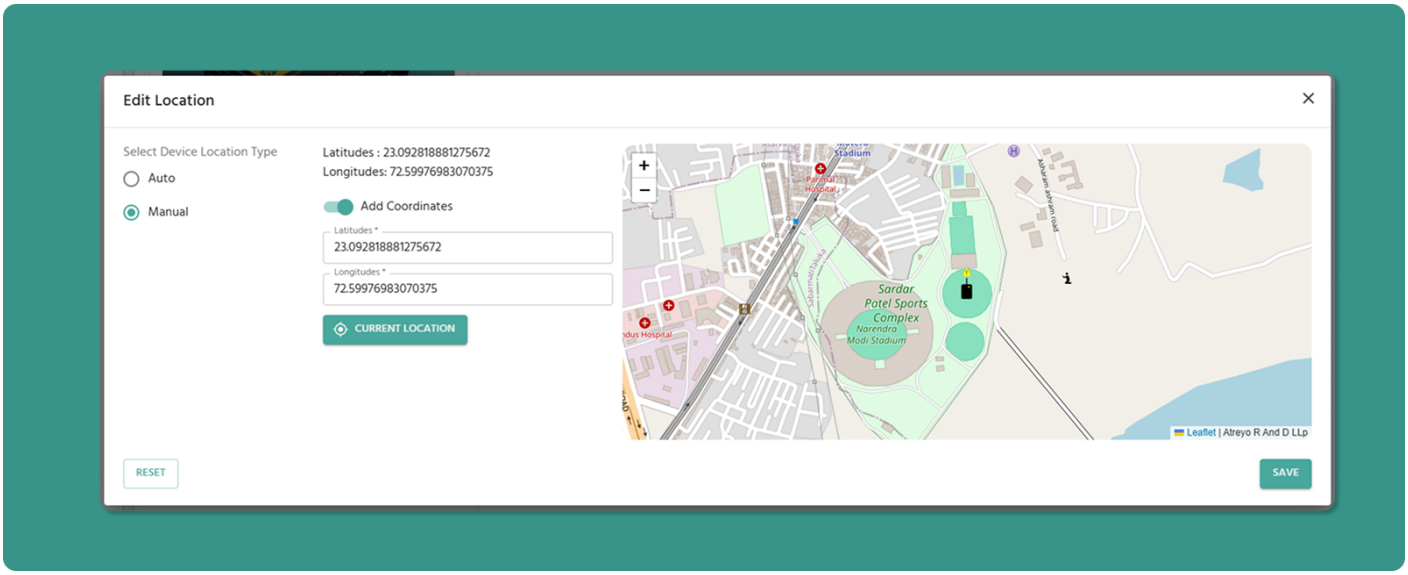
User-defined static location coordinates.



How It Works:

1. User enters Latitude and Longitude manually
2. Coordinates stored in cloud only
3. Location displayed on Overview map
4. No data transmitted from device

Manual Location Entry



Input Fields:

Latitude:

- Format: Decimal degrees
- Range: -90° to +90°
- North: Positive values
- South: Negative values
- Example: 23.0225 (23° N)

Longitude:

- Format: Decimal degrees
- Range: -180° to +180°
- East: Positive values
- West: Negative values
- Example: 72.5714 (72° E)

Finding Coordinates for Manual Entry

Method 1: Google Maps

1. Open Google Maps (maps.google.com)
2. Right-click on desired location
3. Click "What's here?"
4. Coordinates appear at bottom (click to copy)
5. Format: Latitude, Longitude (e.g., 23.0225, 72.5714)

Method 2: GPS Device/Phone

1. Use smartphone GPS app
2. Stand at device location
3. Record coordinates from app
4. Enter into Manual Location fields

Method 3: Physical Address Lookup

1. Use geocoding service (e.g., geocode.xyz)
2. Enter physical address
3. Service returns coordinates
4. Verify accuracy on map before using

Important Limitations of Manual Mode

⚠ Critical Understanding:

Manual location data is stored ONLY in the cloud, NOT on the physical device.

Implications:

- Map Display: Device appears at manual location on Overview map
- Device Reality: Physical device has no knowledge of this location
- Mismatch Possible: Device may be physically elsewhere

⚠ Use Manual Mode Only When:

- GPS is unavailable (indoor, underground, shielded locations)
- Device is stationary and location won't change
- Approximate location is sufficient for your needs
- You understand the location is for reference only

Use Cases for Manual Mode

Appropriate Scenarios:

- □ Fixed indoor installations (factories, server rooms)

- Underground installations (basements, tunnels)
- Devices in GPS-shielded enclosures
- Legacy devices without GPS capability
- Approximate location sufficient for inventory purposes

Not Recommended:

- Mobile devices requiring real-time tracking
- Situations requiring precise location verification
- Applications with location-based automation
- Compliance scenarios requiring actual device location

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Updated 2026-04-27 09:44:00 UTC by Deep