



G-Matrix Systems
Integrated System Design

RAMAC™
Cold Chain Logistics Solution





G-Matrix Systems

Integrated System Design

G-Matrix Systems addresses the modern need for monitoring through a range of bespoke IOT communications solutions, from cold chain monitoring, to security and entry control, tracking, fluid measurement and more.

G-Matrix Systems is a **Full IoT Turn-key** solution provider and is completely network Agnostic

CONTACT US

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Our Core Business

RESEARCH & DEVELOPMENT

Internal R&D for product enhancement ensuring G-Matrix is always ahead of the curve with future Technologies.



RAPID PROTOTYPING

The G-Matrix Systems “Heart” is an all-encompassing device which allows for multiple sensors to be connected allowing rapid prototyping. This, together with our in-house 3D printers ensures prototypes are aligned with Customer expectations



PRODUCTION

40 000+ GPS units pass through our Test jigs every month supported by the G-Matrix test data base and monthly SLA



"A Good company delivers excellent products and services.
Great companies does all that and strives to make the world
a better place"

Bill Ford - Executive Chairman of *Ford* Motor Company

Our Services

- Electronic Firmware Development in right down to microprocessors
- Low Power Products – Sigfox, LORA, GSM, Low Power Radio, BLE, Solar powered, NB-IoT, RPMA, M-CAT1, MQTT Products.
- Labview Software Development
- Electronic and Mechanical Interfacing.
- Development on "Internet of Things" networks
- Integration on 3rd party Platforms
- Deployment of LPWAN networks
- Intensive research and development in Sigfox, Lora, BLE, Wi-Fi & GSM communication
- Management Systems for remote communication
- Development of smartphone application.

Current Products

RAMAC™

Remote Access Management and Control Systems

- Cold Storage Monitoring
 - Smart Location Button
 - Range Detector
 - Remote Lock Monitor and driver
 - Cable Theft Solution
 - Asset Tracker
 - Temperature Sensor
 - Power State Monitor
 - Tamper Proof Container Locks
 - Intrusion protection Sensors
 - Vibration Sensor
 - Magnetic Sensor
 - Power consumption and Battery monitor
 - Camera Pole Maintenance Monitoring
- RAMAC™ Portal is a ready to use online web-based portal, available to any customer
 - RAMAC™ App allows local device configuration, OTA Firmware updates, diagnostics and real time information of the device
 - RAMAC™ Cerebro is a consumer facing App which can be white labelled for our channel partners
 - RAMAC™ API allows for easy integration



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Integrated System Design

Our IoT Footprint

Remote Access Management and Control Systems

September 01, 2021 10:54:59 WED

Akheel Jame...

Account:

All Accounts

Device Types:

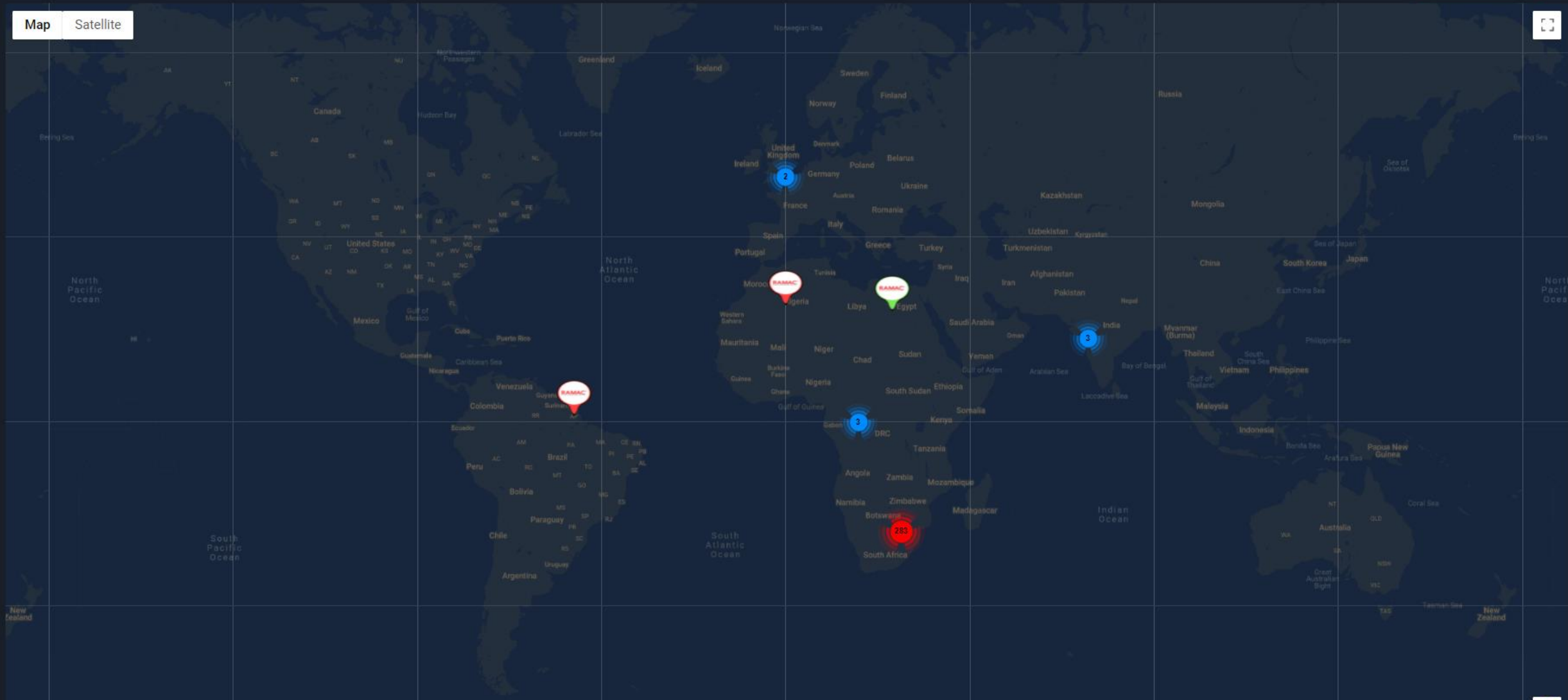
All Device Types

Devices:

All Devices

Total Devices : 433

Map Satellite



The Global Network



A worldwide footprint

Sigfox 0G network is already available in 72 countries and regions



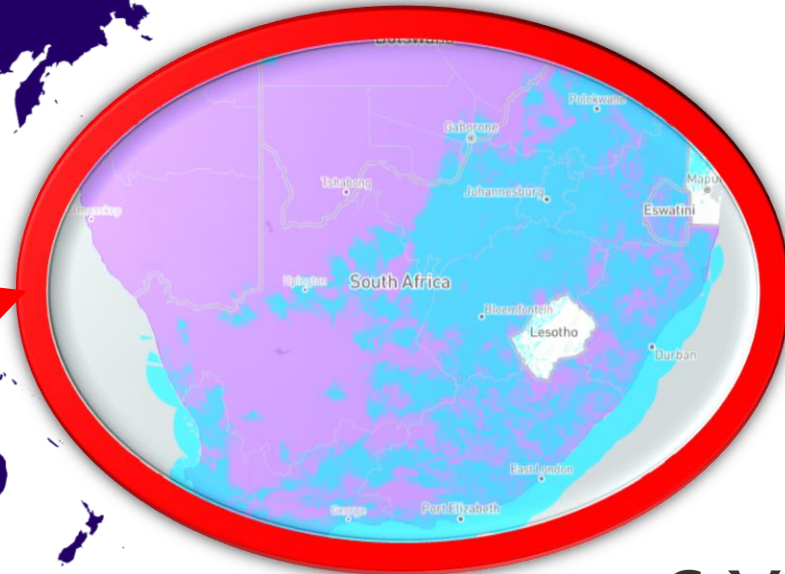
SqwidNET
A DFA COMPANY

93% Population Covered
52 million people covered

90% Coverage on Highways
143 952 km of paved roads covered
538 829 km of gravel road covered

30 dB Metro Densification
8 Metros covered for deep inbuilding and underground applications

85% Population covered at 20dB
47.6 million people covered for indoor applications



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Wireless Temperature Monitoring

The **RAMAC Temperature Sensor** is a multi purpose temperature measuring device. The external temperature sensor allows for local remote measurements, is waterproof and handles high temperatures. A built-in magnet sensor enables the RAMAC Temperature sensor to monitor a doors that can generate alerts. Minimum and/or maximum temperature alarms can be setup on the device to generate alerts if and when the alarms are triggered.

KEY FEATURES

- Remotely configurable minimum and maximum limits via the RAMAC™ Portal once a day.
- Transmits External and Internal Temperature readings.
- The internal temperature readings provides additional data points
- A status message will be sent on a door status change
- The temperature alarm settings can also be done by locally by an operator using the RAMAC™ Mobile Application (RMA), following a work order scheduled by an administrator on the RAMAC™
- Up to 7 lower resolution historical temperature points are sent with every temperature update interval that can be used as a fallback if data was lost due to network coverage problems or lost packets.
- API Integration
- Long-Range Real-Time Communication utilizing Sigfox
- Portable Form Factor
- Low Cost and Simple Installation
- Daily Self Diagnoses via Heartbeat message
- Firmware Upgradeable via mobile application



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Cold Storage Monitoring

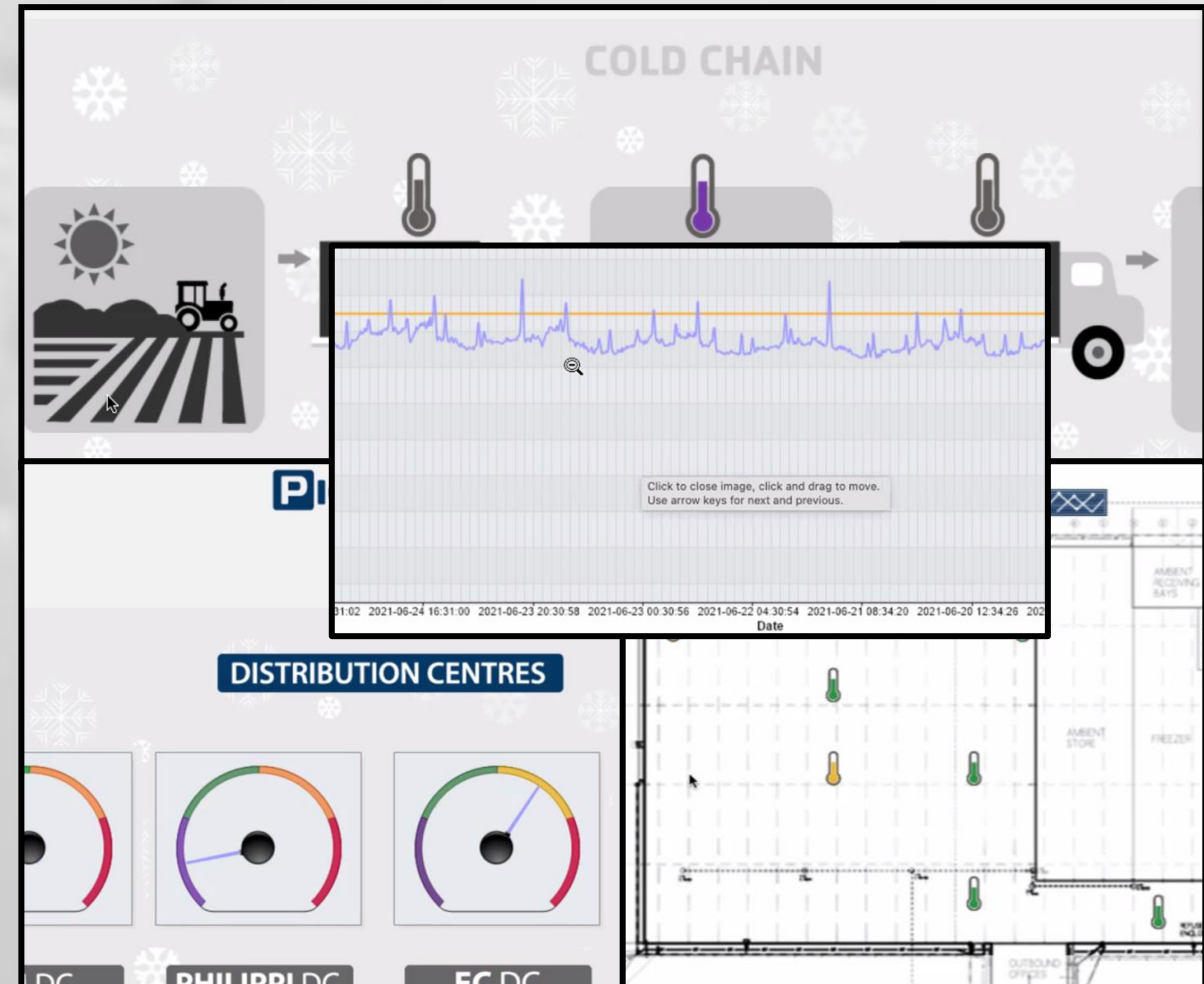
We monitor Cold Storage of Distribution Centres across South Africa

Using BLE Temperature Sensors offers years of Maintenance Free sensor technology thus reducing total Cost of Ownership.

The Sensors feedback to onsite CPE device that would communicate via GSM, Wi-Fi, TCP/IP, or RJ45 through the internet to customers server or independently cloud hosted environment which is accessible globally through the internet.

Various permission levels allows the executive team to see the important high-level information while the people on the ground are able to view the in-depth data and receive alerts based on the pre-configured thresholds.

Data can be exported for business and data analytics to assist in predictive maintenance and expand your big data for growth in artificial intelligence.



Protecting the Load

Tamper Proof Container Locks

1. External Fitment for High Value Sea-Freight Container Doors
2. Internal Fixed Fitment on Closed Body Truck Door
Full Installation on Inside of Closed Body Truck Door
3. Internal Fixed Fitment for Sea-Freight Container Doors

Developed in Partnership with Seguratainer

- Locks Both Doors Upon Closure with Locking Tongues on The Corners of Each Door
- Manual Internal Gear Mechanism No Maintenance
- Internal Locking Cam Mechanism Motor Driven No Friction
- Motor Battery Life Is 7000 Cycles Before Replacement (APP Controlled for Pre-Warning)
- Lock/ Unlocking Through NFC On Phone App Through Power Harvesting Form Phone



- The Phone APP Is International Available with Full Audit Trail of All Events Per Lock
- The APP Is Also Controlled by Each Customer to Ensure Smooth Operational Requirements.
- Complete Lock Comes in Kit Form for Distribution to Fitment Centers for Easy Installation

Tamper Proof Container Locks

Internal Fixed Fitment for Sea-Freight Container Doors

*Outside View:
The Container Door with NFC Holder and Release Knob
Above the NFC Holder*



Internal Fixed fitment for Closed body trucks

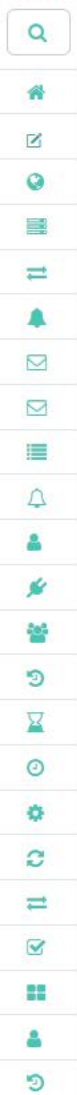
Locks Both Doors Upon Closure with Locking Tongues on The Corners of Each Door.

*The Inside View:
Container Door Lock Tong Top*

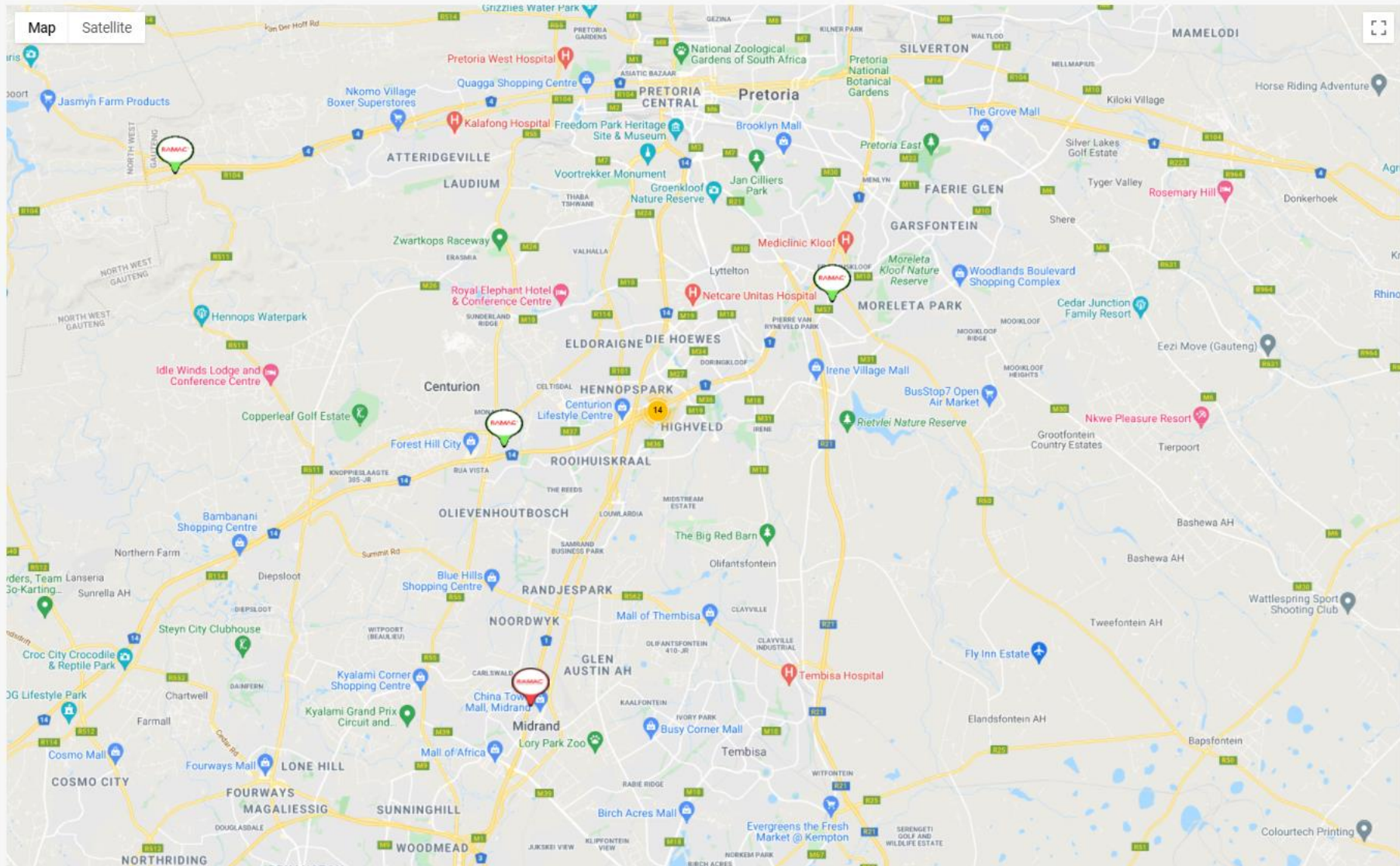


External Fitment for High Value Sea-Freight Container Doors

Claw in Locking Position on Container Door. Locks At 4 X Places at The Same Time on The Keepers and Vertical Bars.



Account: All Accounts Device Types: RAMAC AT1 Devices: All Devices Alerting Devices



Devices Having Alert

11 (Alert Devices) / 32 (Total Devices)

Show All

DEVICE ID	DEVICE TYPE	ALARM STATUS	LAST SEEN
C74604	AT1	! ↻	12 minutes ago
C5007B	AT1	! ↻	1 hour ago
C4DD3B	AT1	! ↻	1 hour ago
C4DD2C	AT1	! ↻	1 hour ago
C12ED1	AT1	! ↻	1 hour ago
C4D277	AT1	! ↻	1 hour ago
C6A9C1	AT1	! ↻	1 hour ago
C57B76	AT1	! ↻	1 day ago
C75DF9	AT1	! ↻	8 days ago
C7690A	AT1	! ↻	8 days ago
BFA048	AT1	! ↻	19 days ago

Alerts are sent via Email, Telegram with a map card and shown in the NOC Dashboard View.

The platform keeps an audit log of every alert sent from the portal and where it was sent.

Should any user reset the alarm they will need to supply a reason.

Every action like muting a unit, resetting an alarm, suspending a device is time stamp recorded with the user details for accountability reasons.

RAMAC® Remote Access Management and Control Systems November 17, 2021 05:57:12 WED Akheel Jam.

Alerts

Device Type: RAMAC AT1 | Start Date: 2021-10-17 | End Date: 2021-11-17 | Search | Export

DEVICEID	ALERT TYPE	DATE TIME	VIEW MAP
C7258F	AT1 Movement Alarm	2021-11-11 13:34:52	No Location
C51581	State: -Armed -Not Alarming -Temperature Normal -Door Closed -New Location -Moving	2021-11-08 15:30:31	
C51581	State: -Armed -Not Alarming -Temperature Normal -Door Closed -New Location -Moving	2021-11-08 15:24:40	
C51581	State: -Armed -Not Alarming -Temperature Normal -Door Closed -New Location -Moving	2021-11-08 15:18:50	

ADD MEMBERS

Spring Drive
Brittlewood Avenue
19:38

Movement alarm for AT1 device
Device:C6C3E5
Description: _Test 2
Date:2021-08-23 19:38:38

Account:V2 SALES DEMO
<https://portal.ramac.io/vd/C6C3E5/19>
19:38

Movement alarm for AT1 device
Device:C71A07
Description: _Test
Date:2021-08-23 19:38:42

Account:V2 SALES DEMO
<https://portal.ramac.io/vd/C71A07/19>
19:38

P1 Device Location Update
Device:C5005E
Description: Akheel_Goodwill
Date:2021-08-23 19:41:23

Account:V2 SALES DEMO
Map:[Click Here](#) to view latest location on map

Work Orders

09:27 72%

Task

Jul 20 22 Wed
Jul 20 23 Thu
Jul 20 24 Fri
Jul 20 25 Sat
Jul 20 26 Sun

Order Type : NEW Pending

WorkId : 1164

Device Type Name : RAMAC T1

Province Name : Gauteng

Start Date : 2020-07-24 09:35:00

End Date : 2020-07-25 09:30:00

+

09:28 72%

Task History

09:31 71%

RT1_BFD96C

CONNECTED

CLOSED

3.6 V

20° C

09:33 70%

BFD96C

DEVICE NAME

Enter device name

PHOTO TASKS (3)

Take a photo of the closed asset

CHECKLIST TASKS (1)

Complete the following checklist

QUESTIONSET TASKS (1)

Answer the following questions

NOTE (1)

Enter any notes

09:33 70%

Obtain GPS Location

QUESTION NO.	TASK	ANSWER
1	Take a photo of the height installed in the ground	
2	Take a photo of the installed Device	



Audit Log



May 28, 2021 07:55:16 FRI

[Home](#) / [Work Order History](#)

Work Order History

NAVIGATION

- [Home](#)
- [Work Order](#)
- [Workorder Templates](#)
- [Maps](#)
- [Devices](#)
- [Replace Device](#)
- [Transfer Devices](#)
- [Update Subscription](#)
- [Device Notifications](#)
- [Masters](#)
- [Messages](#)
- [Message History](#)
- [Reports](#)
- [Alerts](#)
- [Accounts](#)
- [Integrations](#)
- [Users](#)
- [Notification Subscription Users](#)
- [Devices Audit Log](#)
- [Accounts Audit Log](#)
- [System Fault](#)

Start Date: End Date: Order Type: Assigned User: Device:

Status: [Search](#)

[Clear Search](#)
 Show entries

WORK ORDER ID	WORK ORDER TEMPLATE	CLIENT	START DATE	END DATE	ORDER DATE	ORDER TYPE	DEVICE	STATUS	ASSIGNED TO	INSTALLATION DATE	ACTION
7697	Protea Coin	Protea Coin	2021-05-27 14:01:00	2021-05-27 15:16:00	2021-05-27 14:01:44	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	27-05-2021	View
7696	Protea Coin	Protea Coin	2021-05-27 13:57:00	2021-05-27 15:15:00	2021-05-27 13:58:53	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	27-05-2021	View
7695	Protea Coin	Protea Coin	2021-05-27 13:53:00	2021-05-27 15:16:00	2021-05-27 13:53:33	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	27-05-2021	View
7654	Protea Coin	Protea Coin	2021-05-27 12:03:00	2021-05-27 14:15:00	2021-05-27 12:04:29	MAINTENANCE	C6A397	NEW	Kenneth Lindgren	27-05-2021	View
7653	Protea Coin	Protea Coin	2021-05-27 00:12:00	2021-05-27 13:10:00	2021-05-27 11:36:43	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	27-05-2021	View
7652	Protea Coin	Protea Coin	2021-05-26 14:38:00	2021-05-26 16:25:00	2021-05-26 14:38:45	NEW	RAMAC MD1	NEW	Kenneth Lindgren	-	View
7590	Protea Coin	Protea Coin	2021-05-25 12:15:00	2021-05-25 13:45:00	2021-05-25 12:25:01	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	25-05-2021	View
7591	Protea Coin	Protea Coin	2021-05-25 12:15:00	2021-05-25 13:45:00	2021-05-25 12:25:01	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	25-05-2021	View
7592	Protea Coin	Protea Coin	2021-05-25 12:15:00	2021-05-25 13:45:00	2021-05-25 12:25:01	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	25-05-2021	View
7593	Protea Coin	Protea Coin	2021-05-25 12:15:00	2021-05-25 13:45:00	2021-05-25 12:25:01	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	25-05-2021	View

Pulse Sensor



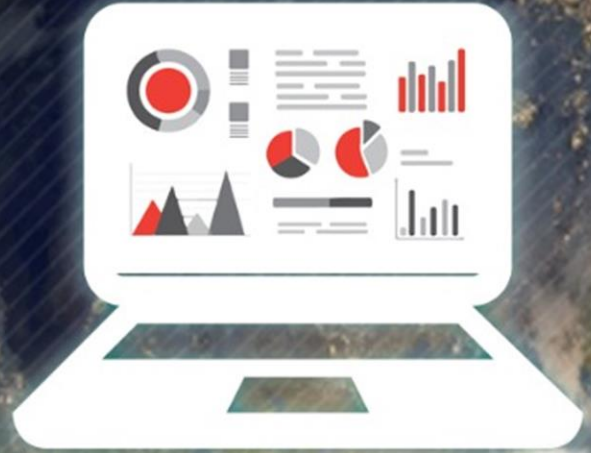
Cable Theft Sensor



Temperature Sensor



RAMAC™ Portal
& Mobile App



Remote Lock Unit



RAMAC™
Remote Access Management and Control Systems

Power State Sensor



Intrusion Protection



Magnet Sensor



Asset Tracker



Smart Location
Button



Vibration Sensor





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Contact Us

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