

# DAS Monitoring

by TX RX Systems



VERIFY INTEGRITY OF YOUR  
DAS INFRASTRUCTURE.

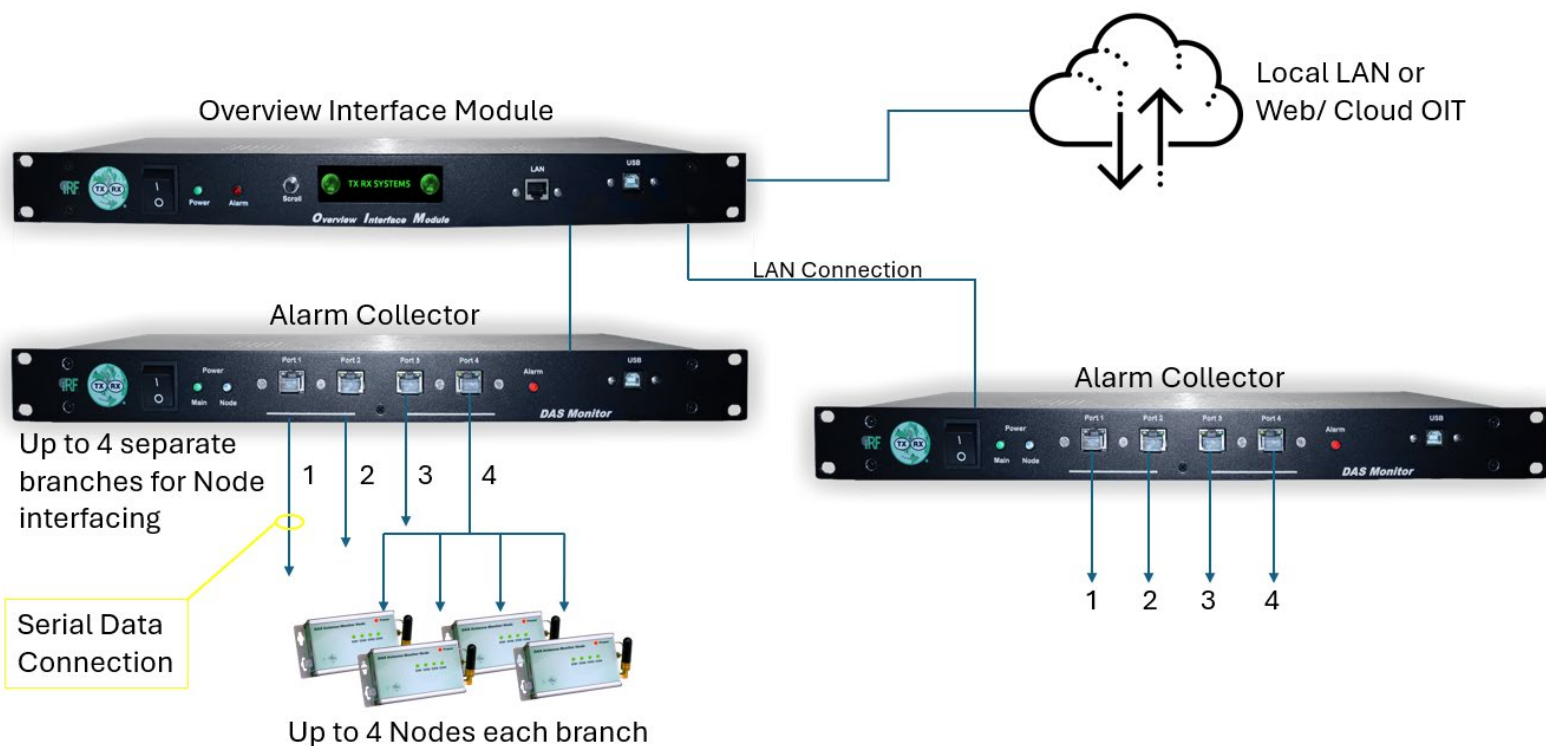
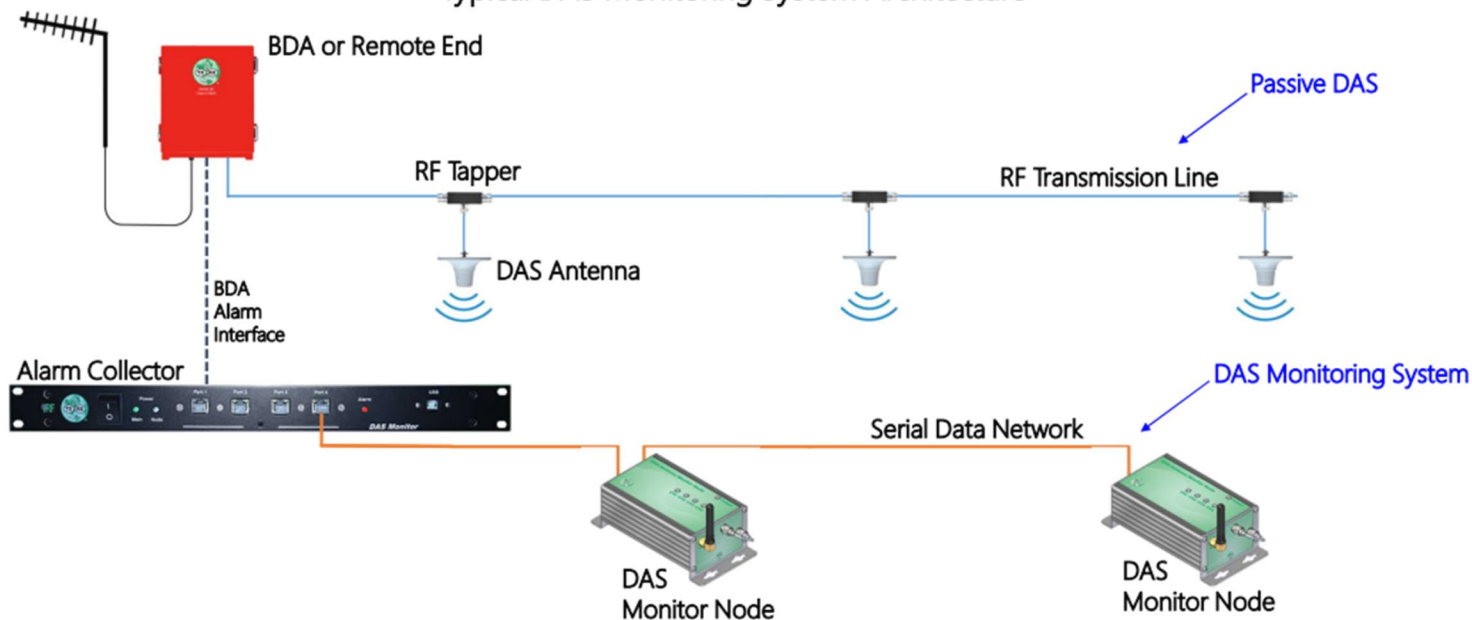
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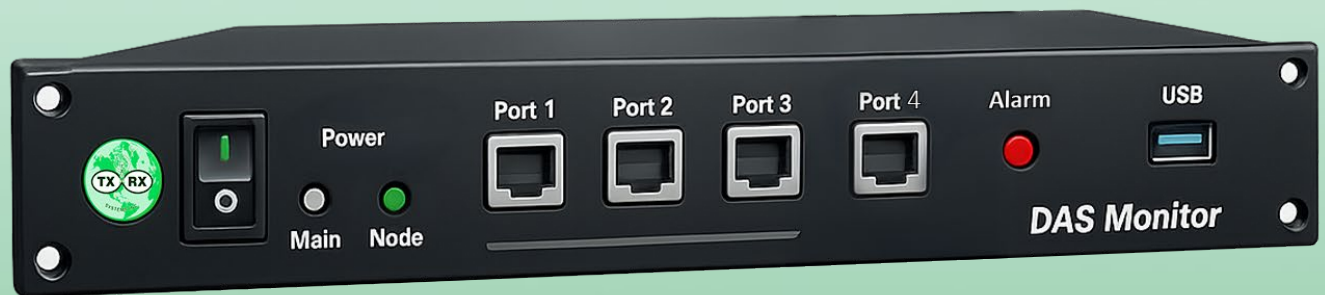
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# High Level System Overview



Typical DAS Monitoring System Architecture





Collector Module

User Interface



# Collector Dashboard View

Access Level: Administrator

Status

Dashboard

Alarm Board

Site Setup

Alarm Setup

Tools

Network and SNMP

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Diagnostic Data

Log out from user admin

IP Address: 10.121.1.110

Firmware Rev: 1.0.0F

Dashboard

Site: ENG DAS Collector

Node Search

Alarms 1

Heartbeat

	Power Path	Battery Voltage	Primary Voltage	Temperature	Connection to OIM
Collector	Primary Power	0.00 vDC	14.48 vDC	31.45°C	Yes

Node Serial	Friendly Name	Operational Mode and Alarm State				Software Version
		Ch 1	Ch 2	Ch 3	Ch 4	
● ENGND03	Stairwell_37	Trunking	Trunking	Trunking	Trunking	1.0.1F
● ENGND02	Main_Office	Trunking	Trunking	Trunking	Trunking	1.0.1F
● ENGND04	Basement	Trunking	Conventional	Conventional	Conventional	1.0.1F
● ENGND01	Floor2_Room1	Conventional	Conventional	Trunking	Conventional	1.0.1F

Detailed Node Information

Stairwell\_37 (Serial Number: ENGND03)

Alarms

Alarm No Comms Collector

Inactive

Signal Strength and Node Info

Property

Value

Trunking and Conventional modes Available for each channel

Active Nodes

## Dashboard

Site: ENG DAS Collector

Node Search Alarms 4 Heartbeat

Software Version	1.0.1F
Trunking Timeout	10 Seconds

### Channels

Channel	Frequency	Bandwidth	Atten	RSSI	Min Threshold	Op Mode	Alarm Timeout
Ch 1 Enabled <a href="#">Edit</a>	146.5200 MHz	12.5 kHz	0 dB	-75 dBm	-80 dBm	Trunking	10 Seconds
Ch 2 Enabled <a href="#">Edit</a>	446.1000 MHz	12.5 kHz	0 dB	-113 dBm	-80 dBm	Trunking	10 Seconds
Ch 3 Disabled <a href="#">Edit</a>	446.1250 MHz	12.5 kHz	0 dB	--- dBm	-80 dBm	Trunking	10 Seconds
Ch 4 Disabled <a href="#">Edit</a>	446.1500 MHz	12.5 kHz	0 dB	--- dBm	-80 dBm	Trunking	10 Seconds

**Trunking Mode:**  
Multi-Channel Monitoring, Only 1 Channel needs to be active to keep node out of alarm

Radio Icon indicates which channel is actively detecting signal

### Conventional Mode:

- Single-Channel Monitoring
- Loss of signal causes node to alarm

### Channels

Channel	Frequency	Bandwidth	Atten	RSSI	Min Threshold	Op Mode	Alarm Timeout
Ch 1 Disabled <a href="#">Edit</a>	446.0000 MHz	12.5 kHz	0 dB	--- dBm	-80 dBm	Trunking	10 Seconds
Ch 2 Disabled <a href="#">Edit</a>	146.5200 MHz	12.5 kHz	0 dB	--- dBm	-80 dBm	Conventional	10 Seconds
Ch 3 Enabled <a href="#">Edit</a>	146.5200 MHz	12.5 kHz	0 dB	-60 dBm	-80 dBm	Conventional	10 Seconds
Ch 4 Disabled <a href="#">Edit</a>	439.2500 MHz	12.5 kHz	0 dB	--- dBm	-80 dBm	Conventional	10 Seconds





# Collector Dashboard Alarm Indicators

**Dashboard**  
Site: ENG DAS Collector

Power Path: Primary Power  
Battery Voltage: 0.00 VDC  
Primary Voltage: 14.47 VDC  
Temperature: 31.31°C  
Connection to OIM: Yes

Node Search:  Alarms: ☐ Heartbeat: ☐

**Alarms Indicated on Dashboard**

Node Serial	Friendly Name	Ch 1	Ch 2	Ch 3	Ch 4	Software Version
ENGND03	Stainwell_37	Trunking	Trunking	Trunking	Trunking	1.0.1F
ENGND02	Main_Office	Trunking	Trunking	Trunking	Trunking	1.0.1F
ENGND04	Basement	Trunking	Conventional	Conventional	Conventional	1.0.1F
ENGND01	Floor2_Room1	Conventional	Conventional	Trunking	Conventional	1.0.1F

**Detailed Node Information**  
Stainwell\_37 (Serial Number: ENGND03)

**Alarm Board**  
Site: ENG DAS Collector

Node Search:  Alarms: ☐ Heartbeat: ☐

Show 10 entries

Active	Date	Serial	Severity	Information	Event ID
Inactive	2019-02-14 06:35:38	ENGND04	Severe	Node Basement (SN: ENGND04) Channel 3 - RSSI Value went below set threshold	500
Inactive	2019-02-14 06:35:40	ENGND01	Severe	Node Floor2_Room1 (SN: ENGND01) Channel 1 - RSSI Value went below set threshold	300
Inactive	2019-02-14 06:35:41	ENGND03	Severe	Node Stainwell_37 (SN: ENGND03) - No trunking signals detected within the timeout window	200
Inactive	2019-02-14 06:35:37	ENGND02	Severe	Node Main_Office (SN: ENGND02) - No trunking signals detected within the timeout window	200

Filters:

Showing 1 to 4 of 4 entries

Previous 1 Next

Clear Inactive Alarms

The Alarm Board keep a detailed log of all instances of coverage loss, recording exact date and time coverage was lost, even after signal is restored.

## Edit Channel

Enabled

Enabled  
Disabled  
Enabled  
12.5 KHZ

Frequency

136.0000MHz - 174.0000MHz  
200.0000MHz - 260.0000MHz  
400.0000MHz - 520.0000MHz

146.5200

Min Threshold (dBm)

-80

Operational Mode

Trunking (Uses Node Alarm Settings)

Cancel

Submit

## EDIT

- Enable or Disable Channel
- Set Minimum Threshold
- View Available Frequencies
- Toggle Bandwidth

Bandwidth

12.5 kHz

25 kHz

12.5 kHz

- Set Operating Mode (Trunking or Conventional)
- Set Conventional Alarm Timeout

Operational Mode

Conventional (Uses Channel Alarm Settings)

Conventional Alarm Timeout

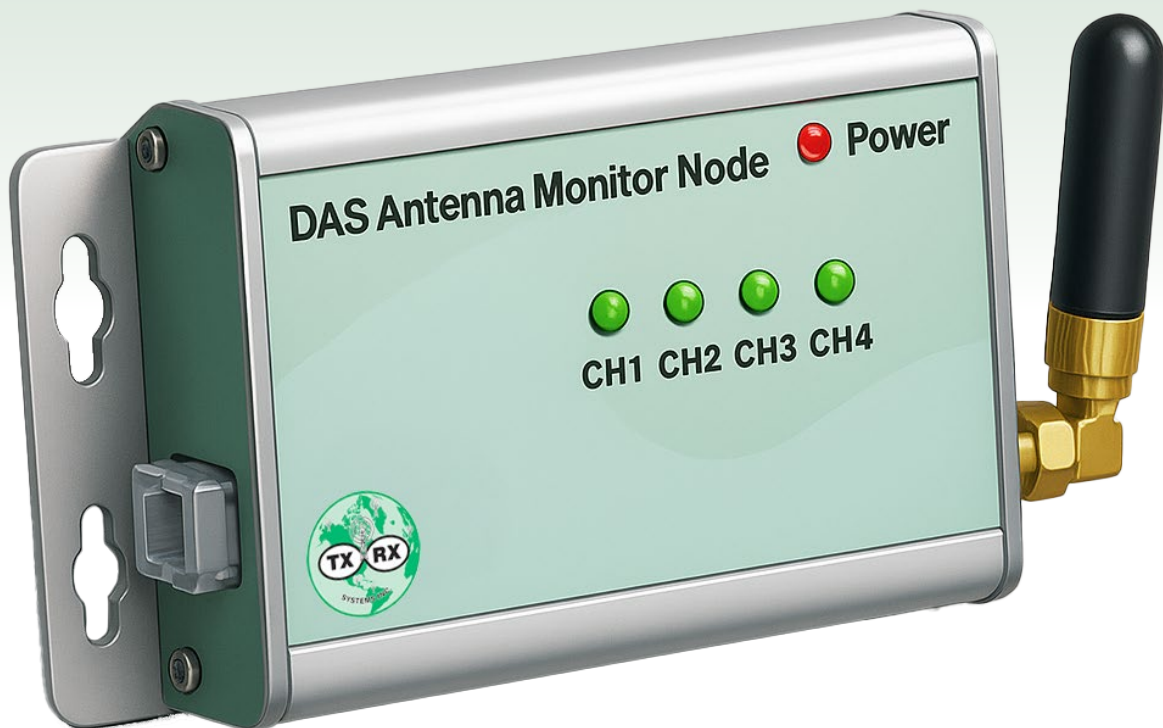
10 Seconds

Cancel

Submit



# Node Information



## Signal Strength and Node Info

Property	Value
Attenuation	0 dB
RX Count	4798
Connected	True
Currently Updating	False
Latitude, Longitude	42.650153, -79.015637
Software Version	1.0.1F
Trunking Timeout	10 Seconds

**RX Count** – Number of times the Node has connected (pinged) to the Collector.

**Trunking Timeout** – Adjustable amount of time without signal before Alarm is triggered.

**Live Updates** - the blue corner indicates information that is updated in real time

## Node Update Settings

- Adjust Trunking Timeout
- Adjust Lat/Long
- Adjust Attenuation
- Rename Node
- Locate Node

Dashboard  
Site: ENG DAS Collector

Node Search:  Alarms: 4 Heartbeats: 1

Update Settings for Node Main\_Office

Select a field to update:

Select a field to update:

Friendly Name

Latitude/Longitude

Attenuation

**Trunking Timeout**

Locate Node

RX Count	4855
Connected	True
Currently Updating	False
Latitude, Longitude	42.650153, -79.015637
Software Version	1.0.1F
Trunking Timeout	10 Seconds

Channels

Channel	Frequency	Bandwidth	Atten	RSSI	Min Threshold	Op Mode	Alarm Timeout
Ch 1 Enabled	146.5200 MHz	12.5 kHz	0 dB	-72 dBm	-80 dBm	Trunking	10 Seconds



# Node Customization

## Signal Strength and Node Info

Property	Value
Attenuation	0 dB
RX Count	4798
Connected	True
Currently Updating	False
Latitude, Longitude	42.650153, -79.015637
Software Version	1.0.1F
Trunking Timeout	10 Seconds

**RX Count** – Number of times the Node has connected (pinged) to the Collector.

**Trunking Timeout** – Adjustable amount of time without signal before Alarm is triggered.

**Live Updates** - the blue corner indicates information that is updated in real time

## Node Update Settings

- Adjust Trunking Timeout
- Adjust Lat/Long
- Adjust Attenuation
- Rename Node
- Locate Node

### Dashboard

Site: ENG DAS Collector

Node Search Alarms

#### Update Settings for Node Main\_Office

Select a field to update:

Select a field to update:

Friendly Name

Latitude/Longitude

Attenuation

**Trunking Timeout**

Locate Node

RX Count	4855
Connected	True
Currently Updating	False
Latitude, Longitude	42.650153, -79.015637
Software Version	1.0.1F
Trunking Timeout	10 Seconds

#### Channels

Channel	Frequency	Bandwidth	Atten	RSSI	Min Threshold	Op Mode	Alarm Timeout
Ch 1 Enabled	146.5200 MHz	12.5 kHz	0 dB	-72 dBm	-80 dBm	Trunking	10 Seconds

Access Level: Administrator

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### Dashboard

Site: ENG DAS Collector

Collector	Power Path	Battery Voltage	Primary Voltage
	Primary Power	0.00 VDC	14.48 VDC

Node Serial	Friendly Name	Operational Mode and Alarm State		
		Ch 1	Ch 2	Ch 3
ENGND03	Stairwell_37	Trunking	Trunking	Trunking
ENGND02	Main_Office	Trunking	Trunking	Trunking
ENGND04	Basement	Trunking	Conventional	Conventional
ENGND01	Floor2_Room1	Conventional	Conventional	Trunking

Detailed Node Information

## Locate Mode:

The respective node will flash purple when enabled



## Trunking Alarm Timeout Menu

Trunking Alarm Timeout

10 Seconds

10 Seconds

**1 Minute**

10 Minutes

30 Minutes

1 Hour

5 Hours

1 Day

1 Week

Adjust the amount of time without signal before Alarm is triggered.



Disable Locate Mode

(Node LEDs are strobing. Node Configuration is disabled while in locate mode)



## Overview Interface Module


### User Interface



# OIM Dashboard View



Dashboard View displays all active nodes, channels, and linked connectors



Access Level: Administrator

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Dashboard

3D View

Map View

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













IP Address: 10.121.1.101  
Firmware Rev: 1.0.5DEV

## Dashboard

Site: System OIM

Alarms  Heartbeat 

Node Serial	Friendly Name	Ch 1	Ch 2	Ch 3	Ch 4	Comms	Collector
ENGND04	Basement	 dBm	 dBm	 -70dBm	 dBm	Up	<a href="#">ENG DAS Collector</a>
ENGND02	Main_Office	 -65dBm	 -115dBm	 dBm	 dBm	Up	<a href="#">ENG DAS Collector</a>
ENGND01	Floor2_Room1	 -64dBm	 dBm	 dBm	 dBm	Up	<a href="#">ENG DAS Collector</a>
ENGND03	Stairwell_37	 -61dBm	 dBm	 dBm	 dBm	Up	<a href="#">ENG DAS Collector</a>

The collector each node is associated with can be selected to open the respective Collector's UI.

Comms	Collector
Up	<a href="#">ENG DAS Collector</a>
Up	<a href="#">ENG DAS Collector</a>


All occurrences throughout the entirety of the system monitored are recorded in the OIM logs.

-Connection and disconnection of all components in the DAS monitoring system

-login attempts & IP Addresses of devices attempting login

-Signal loss and Alarms

-System Resets



Access Level: Administrator

Status

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Logs and Analytics

Logs

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Log out from user admin



IP Address: 10.121.1.101  
Firmware Rev: 1.0.5DEV

## Logs

Site: System OIM

Alarms  Heartbeat 

Show  entries

Search:

Active	Date	Source	Severity	Information	Event ID
	2019-02-14 05:35:55.490	200234-EZ:CU	Info	OIM has been connected	809
	2019-02-14 05:12:45.241	200234-EZ:BDA	Info	BDA 1 Alarm Enabled	905
	2019-02-14 05:12:45.154	200234-EZ:CU	Info	Clear Active Alarms	807
	2019-02-14 05:12:45.014	200234-EZ:CU	Info	Main Control Program Restarted due to System Maintenance or User Interaction	804
	2019-02-14 05:43:46.517	200234-EZ:CU	Info	Clear Inactive Alarms	803
	2019-02-14 05:43:41.840	200234-EZ:BDA	Info	BDA 1 Alarm Disabled	905
	2019-02-14 06:00:17.641	200234-EZ:BDA	Info	BDA 2 Alarm Disabled	906
	2019-02-14 06:00:06.641	200234-EZ:BDA	Info	BDA 2 Alarm Enabled	906
	2019-02-14 05:59:45.617	200234-EZ:CU	Info	Clear Inactive Alarms	803
	2019-02-14 06:42:51.917	200234-EZ:CU	Info	Clear Inactive Alarms	803

Filters:

Showing 1 to 10 of 66 entries

Previous  2 3 4 5 6 7 Next



# 2D/3D Map View

**3D View**  
Site: System OIM

Select a Floor  
Acme-F1 Acme-F2 Reset View

Once Nodes are placed onto the 2D Map, they will display on the 3D view.

This allows the user to access real time updates on signal information, displaying the exact location of each connected node on the building model.

Red indicates a loss of signal.

Green indicates that there are no alarms on either of these floors.

Acme Inc Floor 1

Acme-F1 Acme-F2

Main\_Office  
Serial: ENGND02  
Alarm: No Alarms  
Channel 1: -65 dBm  
Channel 2: -115 dBm  
Channel 3: Unknown dBm  
Channel 4: Unknown dBm  
Communication: Up

**Map View**  
Site: System OIM

Acme Inc Floor 1

Acme-F1 Acme-F2

Place Sensor Remove Sensor

Toggle Features  
Walls  
Riser Location  
BDA  
Directional Coupler  
FeedLine  
Omnidirectional Antenna

Basement  
Serial: ENGND04  
No Alarms  
Channel 1: dBm  
Channel 2: dBm  
Channel 3: -71 dBm  
Channel 4: dBm  
Communication: Up  
Link to Collector at 10.121.1.110  
Close Popup

Nodes can be placed on a 2D visual layout of the building.

Each Sensor is individually mapped, providing live RSSI Value, Active Channels and Collector info

Select a sensor: Choose sensor... Confirm

Choose sensor...

Collector ENG DAS Collector (200234-EZ)

Node Basement (ENGND04)

Node Floor2\_Room1 (ENGND01)

Node Main\_Office (ENGND02)

Node Stairwell\_37 (ENGND03)



# Additional Information

- Verify the integrity of your DAS Infrastructure from any location, any time.
- Intuitive, User-Friendly Interface allows for monitoring of **up to 256** nodes from a single OIM
- Receive live data on all nodes simultaneously and get notified when coverage is compromised
- Pinpoint the exact location coverage is lost, before entering the building

Email [tgattuso@txrx.com](mailto:tgattuso@txrx.com) For More Information!

Or Give Us a Call at 716.272.9640

