



IRONCLAD

Fence Alarm Sensor

Design Your Site



What's in this Guide:

This guide is intended to help professionals design and quote an IRONCLAD sensor. A site walkthrough and/or detailed photos and dimensions of the site are a requirement to verify that site dimensions and conditions are accurate and suitable for the installation of the sensor.

This guide should not serve as an installation manual. It's purpose is to serve as a general guide for design. For detailed installation and calibration instructions please refer to the installation guide. A hard copy of the installation manual is provided with each kit. A digital copy can be obtained here: [\(Link\)](#)

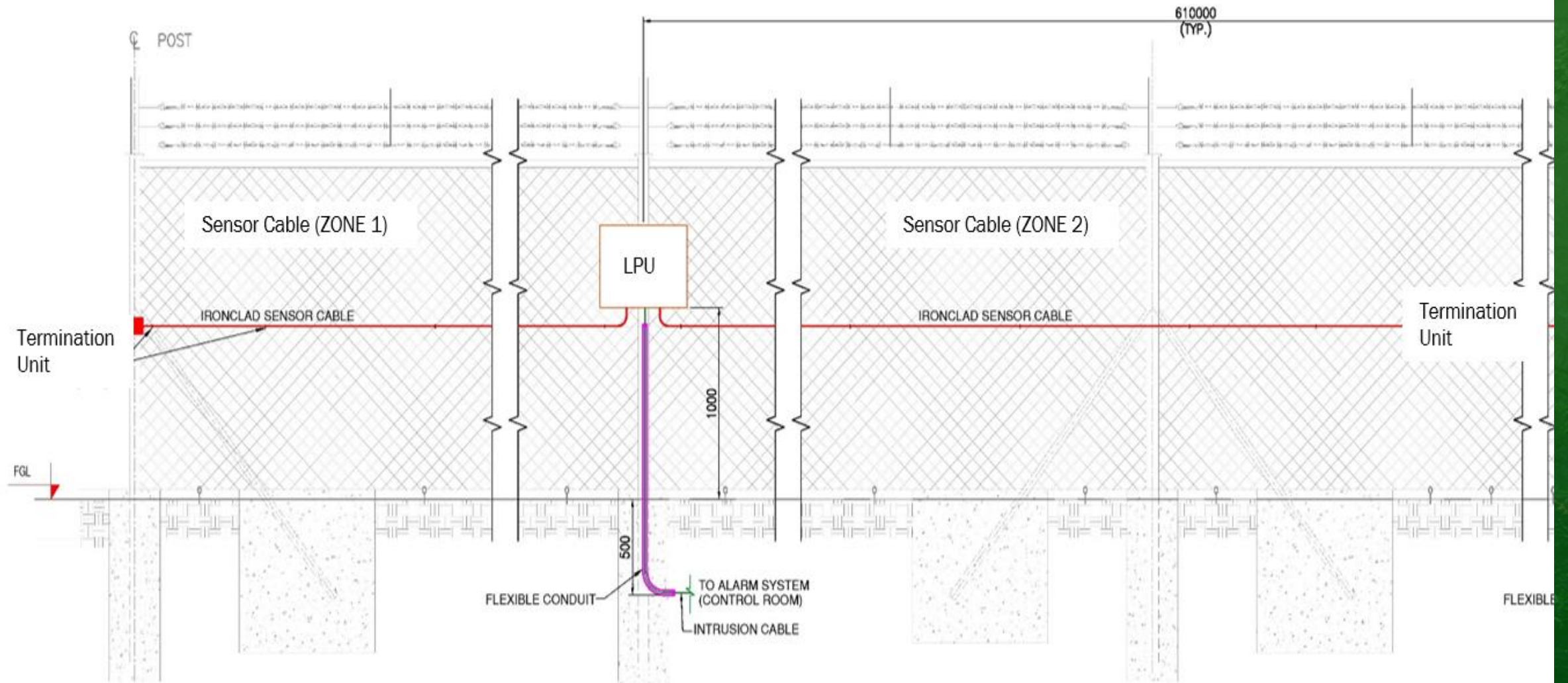
The Basics:

The foundation of each IRONCLAD sensor kit are the following components:

- The Processor: Also referred to as the LPU, or Local Processing Unit, along with the weatherproof case.
- The Sensor Cable: Can be obtained pre-cut at various lengths or trimmed to the needed length, up to 300m/1000ft.
- The End-of-Line Termination Unit: A small box device signaling to the processor that the zone is ended.

Note: While not included or sold by RBtec, coaxial cables are an integral part of many IRONCLAD sensor configurations, allowing the sensor suite to be highly flexible regarding processor location, gate applications, etc.

System Layout

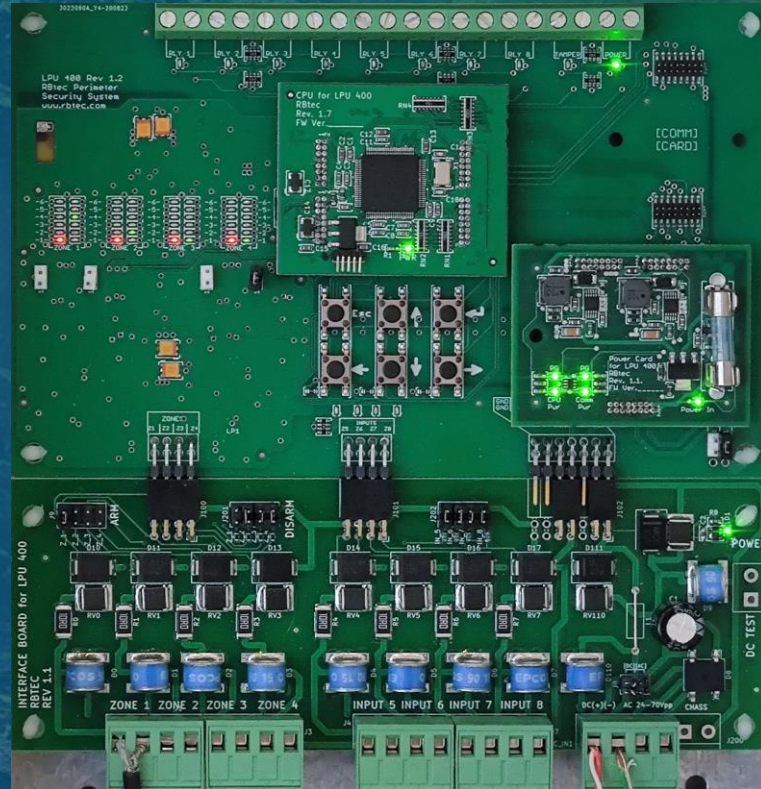


Processor – LPU 400

The LPU is a local processor unit in a weatherproof enclosure.

Each LPU has can be connected to up to 4 IRONCLAD sensor cables and monitor them as 4 seperate zones.

The LPU features 8 dry contact relays outputs for simple integration and requires 12 – 48VDC @ 200mA



Sensor Cable (IRONCLAD)

The Ironclad Sensor Line Cable is attached directly to the fence without any need for conduit with cable ties.

The sensor is totally passive and has different ranges of sensitivity that will allow adapting it to any specific application.

Each zone starts at the electronic processor (LPU) and ends at the Termination Unit (MCTR)



Termination Unit (MCTR)

The End of Line Termination Unit is installed at the end of each cable and ends the zone. There is no need to loop the sensor cable back to the LPU.



Each zone starts at the electronic processor (LPU) and ends at the Termination Unit (MCTR).



Power Supply & Relay Outputs

- The IRONCLAD processor requires: 12-24 DC @ 0.5 Amp
- Plan the power/relay cable route from the IRONCLAD processor(s) to the alarm panel.

There are 3 ways you can connect power/relay of the IRONCLAD/MICALERT processor on the fence with the alarm system:



A cable with 6-8 wires. The cable will carry the 2xDC power, 2x2 wired alarm relay outputs and 2x2 power/tamper indication



In a case running a cable (to the alarm panel) is not possible using a wireless relay transmitter is possible. Make sure a DC power is available next to the IRONCLAD/MICALERT processor.



For a complete standalone setup a wireless + solar power options is possible.



Please take into consideration accessories you need

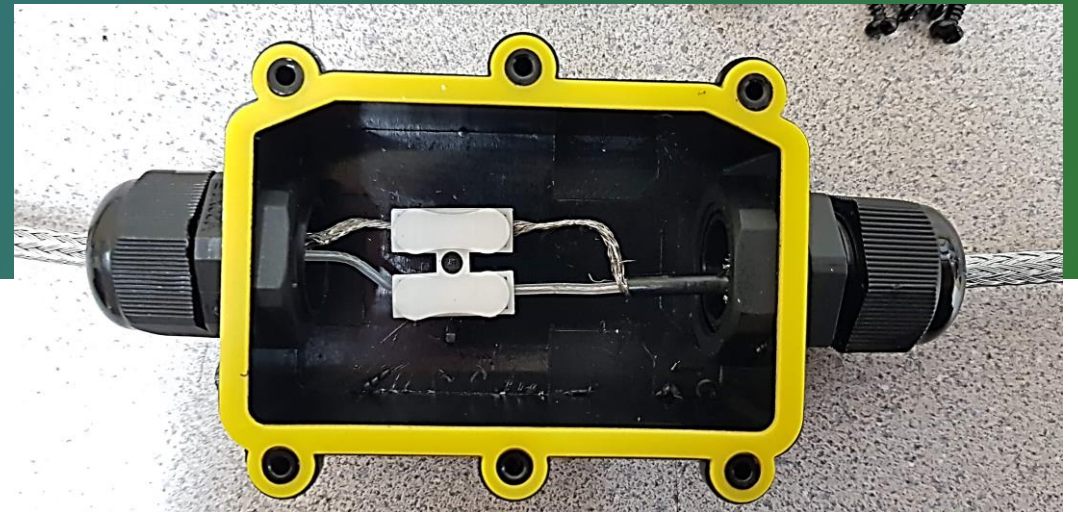
Required:

- Power supply – 12-24vDC 1amp per processor.
- Lead wire – 6-8 wires between each processor and the alarm system. The amount of cable needed is the distance between the fence processor and the alarm system panel.



Accessories we offer:

- Swing gates - To go under the gate you need a standard direct burial RG6 to act as the non-sensitive and 2x - RB-RBMCTXT
- Sliding gates – RB-SLIDINGKIT a sliding kit is needed.
- Stainless twist ties – 1 bag per 150m/500ft of sensor cable.



Protecting different types of gates

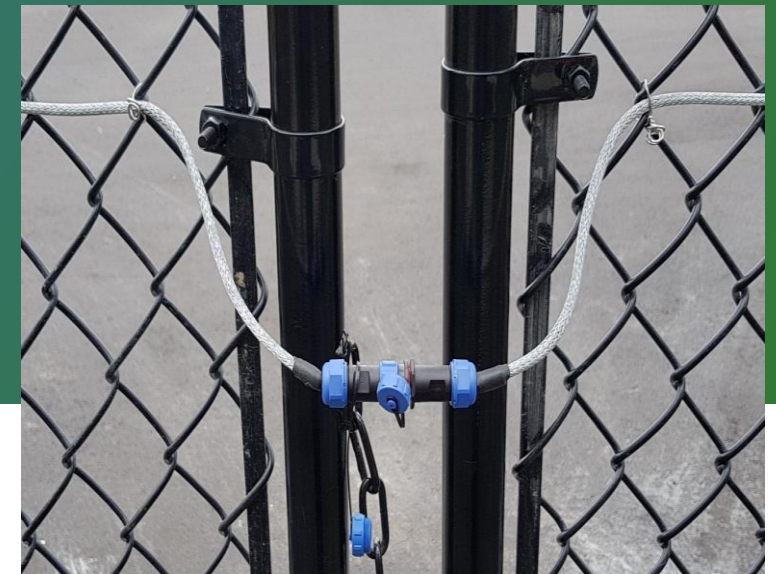
Sliding gate – For sliding gates we have what we call a sliding gate kit, the kit includes a spring loaded roller that is mounted next to gate and rolls in and out a non-sensitive cable to bridge the gap between the moving gate and the fixed fence.



Swing gate – For swing gates there is no need for special equipment since the sensor cable is flexible. From the fence continue over the gate and do a U turn back to the fence. In order to bypass the gate the cable needs to be spliced with RG6 into a conduit and then spliced back on the other side. Splicing with RB-RBMCTXT Box



Emergency gate / No Conduit – For swing gates where there is no conduit or the gate rarely opens there is an option to splice the cable and install a pull out quick connector which allows to open the cable and as a result open the gate the cable is going over.



IRONCLAD Pre-Assembled Kits

IRONCLAD Fence Alarm System Kit

Part Number / Code	Part Description and kit content	Quantities	System Description
RB-IROC1Z250 / RB-IROC1Z75	SINGLE ZONE KIT 250ft/75m		Single zone IRONCLAD kit 250ft/75m + Processor (LPU-402 Analyzer)
RB-IROC250	Outdoor armored sensor cable. Roll of 75m/250' of sensor cable	1 rolls	
RB-MCTR	End-of-line termination board. Pre-installed at end of sensor cable	1 units	
RB-LPU402	Local Processor (LPU-402 Analyzer) Unit (Dual Zone) w/ 2 relay output	1 unit	
RB-JB402	IP66 / NEMA4X rated weatherproof enclosure for LPU-402 processing unit	1 unit	
RB-IROC2Z250 / RB-IROC2Z75	DUAL ZONE KIT 500ft/150m (2x250ft/75m)		Two zones IRONCLAD kit 2x250ft/75m (500ft/150m total) + Processor (LPU-402 Analyzer)
RB-IROC250	Outdoor armored sensor cable. Roll of 75m/250' of sensor cable	2 rolls	
RB-MCTR	End-of-line termination board. Pre-installed at end of sensor cable	2 units	
RB-LPU402	Local Processor (LPU-402 Analyzer) Unit (Dual Zone) w/ 2 relay output	1 unit	
RB-JB402	IP66 / NEMA4X rated weatherproof enclosure for LPU-402 processing unit	1 unit	
RB-IROC1Z500 / RB-IROC1Z150	SINGLE ZONE KIT 500ft/150m		Single zone IRONCLAD kit 500ft/150m + Processor (LPU-402 Analyzer)
RB-IROC500	Outdoor armored sensor cable. Roll of 152m/500' of sensor cable	1 roll	
RB-MCTR	End-of-line termination board. Pre-installed at end of sensor cable	1 unit	
RB-LPU402	Local Processor (LPU-402 Analyzer) Unit (Single Zone) w/ 1 relay output	1 unit	
RB-JB402	IP66 / NEMA4X rated weatherproof enclosure for LPU-402 processing unit	1 unit	

IRONCLAD Components and Accessories

RB-IROC2Z500 / RB-IROC2Z150	DUAL ZONE KIT 1000ft/300m (2x500ft/150m)		Two zones IRONCLAD kit 2X500ft/150m (1000ft/300m long) + Processor (LPU-402 Analyzer)
RB-IROC500	outdoor armored sensor cable. Roll of 152m/500' of sensor cable	2 rolls	
RB-MCTR	End-of-line termination board. Pre-installed at end of sensor cable	2 units	
RB-LPU402	Local Processor (LPU-402 Analyzer) Unit (Dual Zone) w/ 2 relay output	1 unit	
RB-JB402	IP66 / NEMA4X rated weatherproof enclosure for LPU-402 processing unit	1 unit	
RB-IROC1Z1000 / RB-IROC1Z300	SINGLE ZONE KIT 1000ft/300m		Single zone IRONCLAD kit 1000ft/300m + Processor (LPU-402 Analyzer)
RB-IROC1000	outdoor armored sensor cable. Roll of 305m/1000' of sensor cable	1 roll	
RB-MCTR	End-of-line termination board. Pre-installed at end of sensor cable	1 unit	
RB-LPU402	Local Processor (LPU-402 Analyzer) Unit (Single Zone) w/ 1 relay output	1 unit	
RB-JB402	IP66 / NEMA4X rated weatherproof enclosure for LPU-402 processing unit	1 unit	
RB-IROC2Z1000 / RB-IROC2Z300	DUAL ZONE KIT 2000ft/600m (2x1000ft/300m)		Two zones IRONCLAD kit 2X1000ft/300m (2000ft/600m long) + Processor (LPU-402 Analyzer)
RB-IROC1000	outdoor armored sensor cable. Roll of 305m/1000' of sensor cable	2 rolls	
RB-MCTR	End-of-line termination board. Pre-installed at end of sensor cable	2 units	
RB-LPU402	Local Processor (LPU-402 Analyzer) Unit (Dual Zone) w/ 2 relay output	1 unit	
RB-JB402	IP66 / NEMA4X rated weatherproof enclosure for LPU-402 processing unit	1 unit	

IRONCLAD Components and Accessories

IRONCLAD Parts and Accessories

RB-IROC50	IRONCLAD sensor cable 50ft/15m	1 unit	Outdoor IRONCLAD armored sensor cable WITHOUT End of line. Roll of 15m/50' of sensor cable.
RB-IROC100	IRONCLAD sensor cable 100ft/30m	1 unit	Outdoor IRONCLAD armored sensor cable WITHOUT End of line. Roll of 30m/100ft of sensor cable.
RB-IROC250	IRONCLAD sensor cable 250ft/75m	1 unit	Outdoor IRONCLAD armored sensor cable WITHOUT End of line. Roll of 75m/250' of sensor cable.
RB-IROC500	IRONCLAD sensor cable 500ft/150m	1 unit	Outdoor IRONCLAD armored sensor cable WITHOUT End of line. Roll of 150m/500' of sensor cable.
RB-IROC1000	IRONCLAD sensor cable 1000ft/300m	1 unit	Outdoor IRONCLAD armored sensor cable WITHOUT End of line. Roll of 305m/1000' of sensor cable.
RB-RBTIES610	Stainless steel cable ties for attaching IRONCLAD cable to fence fabric (610 per pack)+ Installation tools	1 bag of ties + Tool	Stainless ties, quote 1 bag per 500ft/ 150m of sensor cable. Example 2000ft/600m will need quantity of 4.
RB-RBMCTR	End-of line termination	1 unit	End-of line termination in weatherproof enclosure
RB-RBMCTXT	Extension unit including weather proof enclosure to splice 2 cable together.	1 unit	Cable Repair Kit/Extension (WEATHER PROOF JUNCTION) used in gates or when repairing a cable.
RB-GATECONN	Gate connector	Pair - Male + Female	Gate connector - Plug Connector for swing gates
RB-SLIDINGKIT	Sliding gate IRONCLAD Kit	30 ft Reel in a Weatherproof Enclosure + 2 RBMCTXT Junction Boxes	Sliding gate IRONCLAD Kit - Retractable Non sensitive Cord Reel 30 ft. in a Weatherproof Enclosure with 2 Junction Boxes
RB-VX25	WEATHER COMPENSATION UNIT	Wind vane + Rain Sensor plates + Bracket	Weather station
RB-ELC2ZKIT	LPU-402 in an enclosure (box)		Complete processor kit for 1/2 zones includes: LPU-402 processor for 2 Zone, Outdoor weatherproof enclosure for LPU-402 processing unit, Mounting plate for enclosure.

Virtual Site Observation and Planning Phase:

Find Perimeter Length

Measure how many meters or feet is the length of the perimeter fence. You can measure that by walking the site with a measuring wheel or using Google maps/Earth.

Google Maps Measure Distance

Once you are in google maps right click the point where you want to start measuring and you will see the menu like on the right Image. Click it and click the first point where you start.

Perimeter Measurement

Click at each point along the perimeter where there is a change of direction in the fence line to find the total distance line seen on the right.



On-Site Observation

- Confirm perimeter length in person if possible.
- Determine number and type of gates (sliding gate, swing gate, pedestrian gate) and dimensions of each gate.
- If gates are present, determine if conduits are present or can be installed under the entryways.
- Power/coax processor location.

Fence Condition

Check the fence's condition. For IRONCLAD sensors to work reliably, the fence must be firmly installed in an upright position with wire mesh that is in good condition.

Make sure the fence is clean of any debris, trash, or vegetation. Objects in contact with the fence can disrupt the ability for the sensor to detect intrusion attempts, or can result in false alarms.



Perimeter Layout Design

Based on the information you collected above, it's now time to divide the perimeter to zones. Here what you should consider



Security Plan

Divide the perimeter for zones to comply with the security planes. For example camera coverage

Multiple Shorter zones = Higher precision of detection resolution



Topography

Divide the site layout into zones that comply with the topography of the site such as North, South side or road vs back



Budget

Less zones, reduces the price.

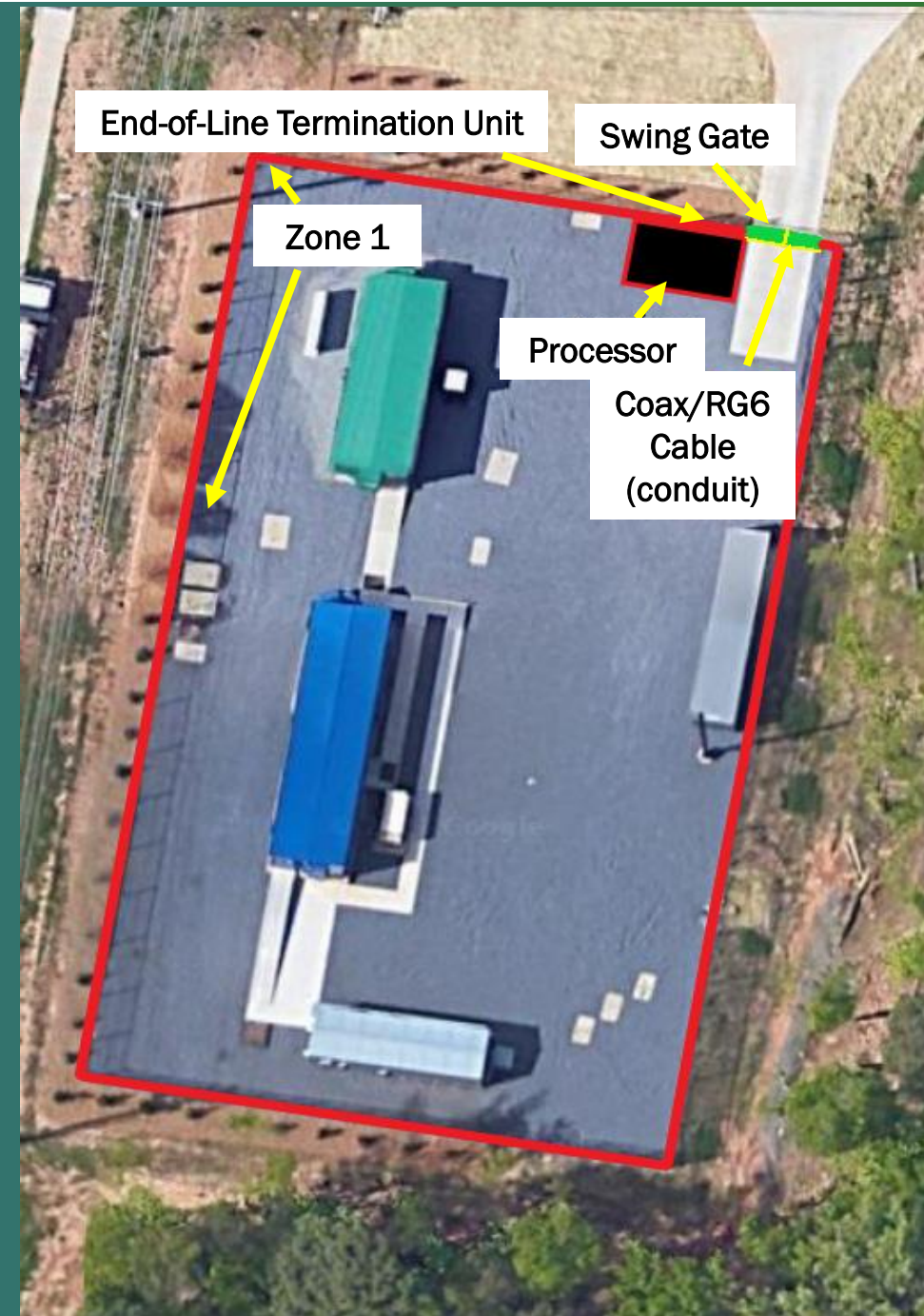
Longer/max length zones –
Cheaper solution since less processors will monitor more cable/fence.

Example Site I: 700ft/213m Fence 1 Processor, 1 Zone, 1 Swing Gate

Simple and affordable setup utilizing 1 processor directly on the fence, 1 sensor zone, and incorporating 1 swinging gate.

- In this configuration we have 1 processor that monitors 1 sensor cable. These components are all included in the RB-IROC1Z1000 kit.
- The advantage of this configuration is that the installation is the very simple, as the entire perimeter is covered by 1x700'/213m zone (trimmed down from the 1000' roll provided in the kit) that runs around the entire perimeter and through the gate, and terminates in an end-of-line unit back by the processor.
- The swing gate is covered by the sensor as shown earlier in this presentation. The sensor cable runs through both gate arms and connects under the gate via non-sensory RG6 coax, splicing out and back in using the RB-MCTXT splice terminal.
- The entire sensor line terminates adjacent to where it begins in an end-of-line termination unit (MCTR) which comes included in the RB-IROC1Z1000 kit.

Quantities	USA/Canada/Latin America Codes	Rest of the world	Description
1	RB-IROC1Z1000	RB-IROC1Z300	1-Zone Processor with 1x300m/1000' roll and EOL (end of line) kit
2	RB-MCTXT	RB-MCTXT	Extension junction box to splice RG6 coax under the gate
3	RB-RBTIES610	RB-RBTIES610	Stainless steel twist ties and tool

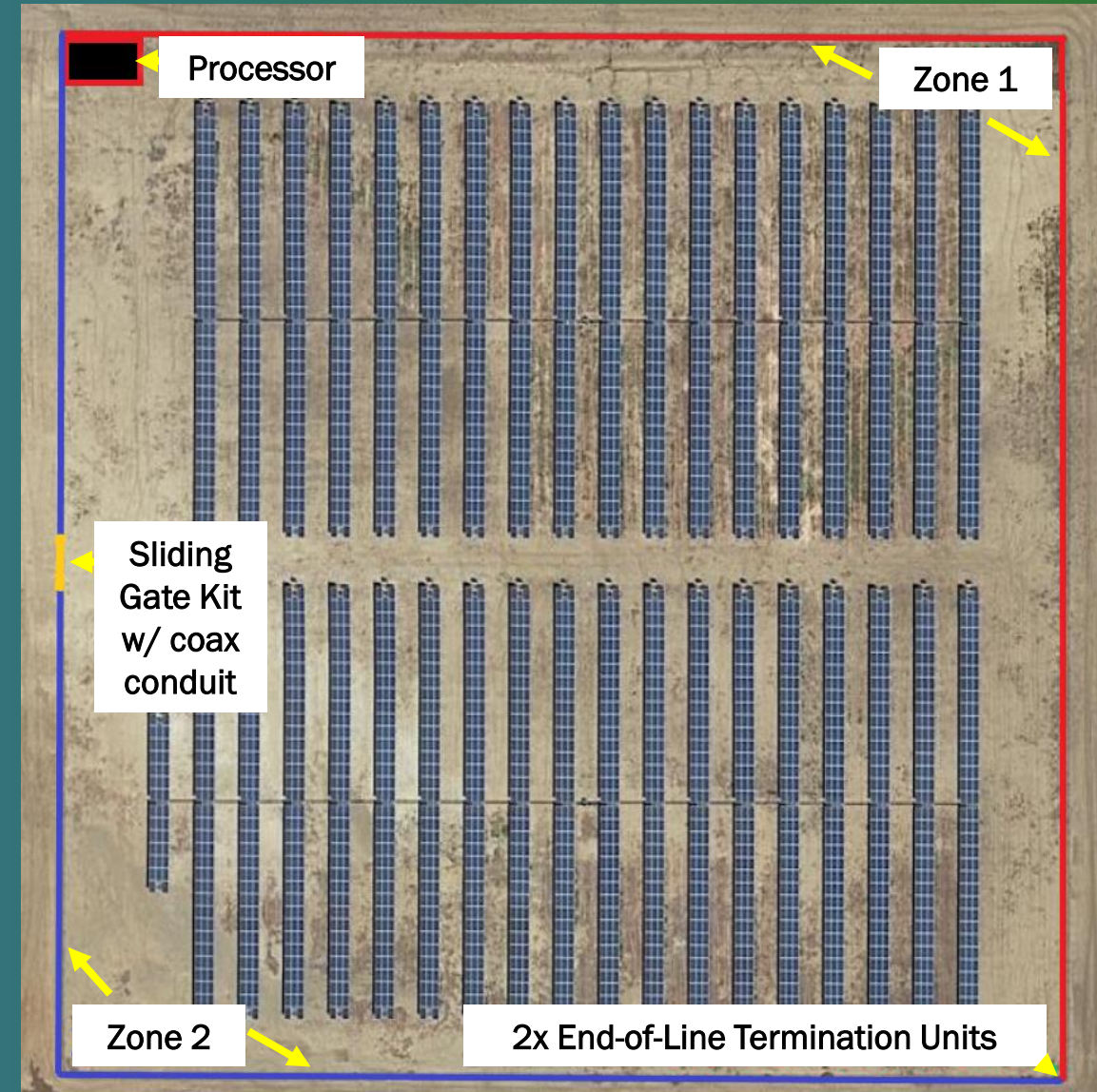


Example Site 2: 2000ft/600m Fence 1 Processor, 2 Zones, 1 Sliding Gate

Simple and affordable setup utilizing 1 kit, providing larger-scale perimeter coverage, 2 sensor zones, and incorporating 1 sliding gate.

- In this configuration we have one processor that monitors 2 sensor zones. These components (except for the sliding gate kit) are all included in the RB-IROC2Z1000 kit.
- The advantage of this configuration is that the installation is simple, as the entire perimeter is covered by 2x1000'/300m zones that start at the processor and run left and right around the entire perimeter. The sliding gate is easily integrated into Zone 2 the RBtec Sliding Gate Kit (all included in the RB-SLIDINGKIT).
- The sensor lines terminate opposite to the processor's location in 2 end-of-line termination units (MCTR) which come included in the RB-IROC2Z1000 kit.

Quantities	USA/Canada/Latin America Codes	Rest of the world	Description
1	RB-IROC2Z1000	RB-IROC1Z300	2-Zone Processor with 2x300m/1000' roll and 2 EOL (end of line) kits
1	RB-SLIDINGKIT	RB-SLIDINGKIT	30 ft Reel in a Weatherproof Enclosure + 2 RBMCTXT Junction Boxes
3	RB-RBTIES610	RB-RBTIES610	Stainless steel twist ties and tool

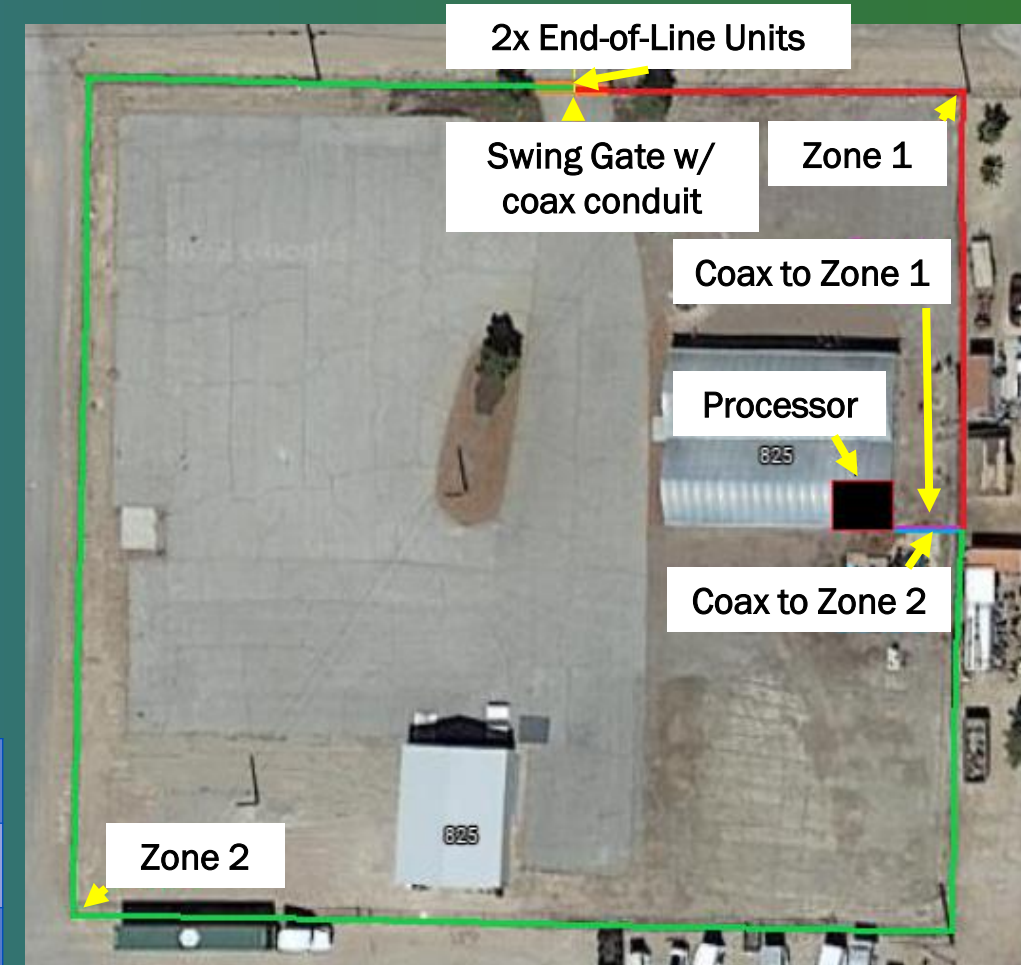


Example Site 3: | 250ft/38 | m Fence | Processor (Remotely Mounted), 2 Zones, | Swing Gate (no conduit)

A customized setup allowing for installation of the processor away from the fence and incorporating a swing gate that does not have a conduit.

- In this configuration we have one processor that monitors 2 sensor zones. The processor and 1 sensor zone are composed of parts included in the RB-IROC1Z1000 kit, while the second zone is built from a 250'/75m sensor cable (RB-IROC250) and 1 end-of-line unit (RB-MCTR).
- This configuration allows for the processor to be installed on or in a building if desired. The majority of the perimeter is covered by 1x1000'/300m zone that run around the majority of the perimeter, with a second, smaller zone covering the remainder. While uneven, this setup remains affordable and integrates a conduit-less swing gate by ending both zones on their respective swing gate arms.

Quantities	USA/Canada/Latin America Codes	Rest of the world	Description
1	RB-IROC1Z1000	RB-IROC1Z300	2 zones Processor with 1x300m/1000' roll and EOL (end of line) kit
1	RB-IROC250	RB-IROC75	IRONCLAD sensor cable 250ft/75m
2	RB-MCTXT	RB-MCTXT	Extension junction box to splice RG6 coax under the gate
1	RB-MCTR	RB-MCTR	End-of line termination in weatherproof enclosure
8	RB-RBTIES610	RB-RBTIES610	Stainless steel twist ties and tool



Example Site 4: 2000ft/600m Fence 2 Processor, 2 Zones, 1 Sliding Gate

Relatively simple setup utilizing 2 kits, providing larger-scale perimeter coverage, 2 sensor zones, and incorporating 1 sliding gate.

- In this example, 2 processors are needed to monitor 2 zones because connecting the 2nd zone via coax or placing the processor away on the fence was deemed to be impractical. Therefore we have 2 processors that monitor 1 sensor zone each. These components (except for the sliding gate kit) are all included in the 2xRB-IROC2Z1000 kits.
- The advantage of this configuration is that the installation is simple, as the entire perimeter is covered by 2x1000'/300m zones that run around the entire perimeter. The sliding gate is easily integrated into Zone 2 using 2x RB-MCTXT splice terminals and the RBtec Sliding Gate Kit (all included in the RB-SLIDINGKIT).
- The sensor lines terminate on the southwest corner of the perimeter in 2 end-of-line termination units (MCTR) which come included in the 2xRB-IROC1Z1000 kits.

Quantities	USA/Canada/Latin America Codes	Rest of the world	Description
2	RB-IROC1Z1000	RB-IROC1Z300	2-Zone Processor with 2x300m/1000' roll and 2 EOL (end of line) kits
1	RB-SLIDINGKIT	RB-SLIDINGKIT	30 ft Reel in a Weatherproof Enclosure + 2 RBMCTXT Junction Boxes
4	RB-RBTIES610	RB-RBTIES610	Stainless steel twist ties and tool



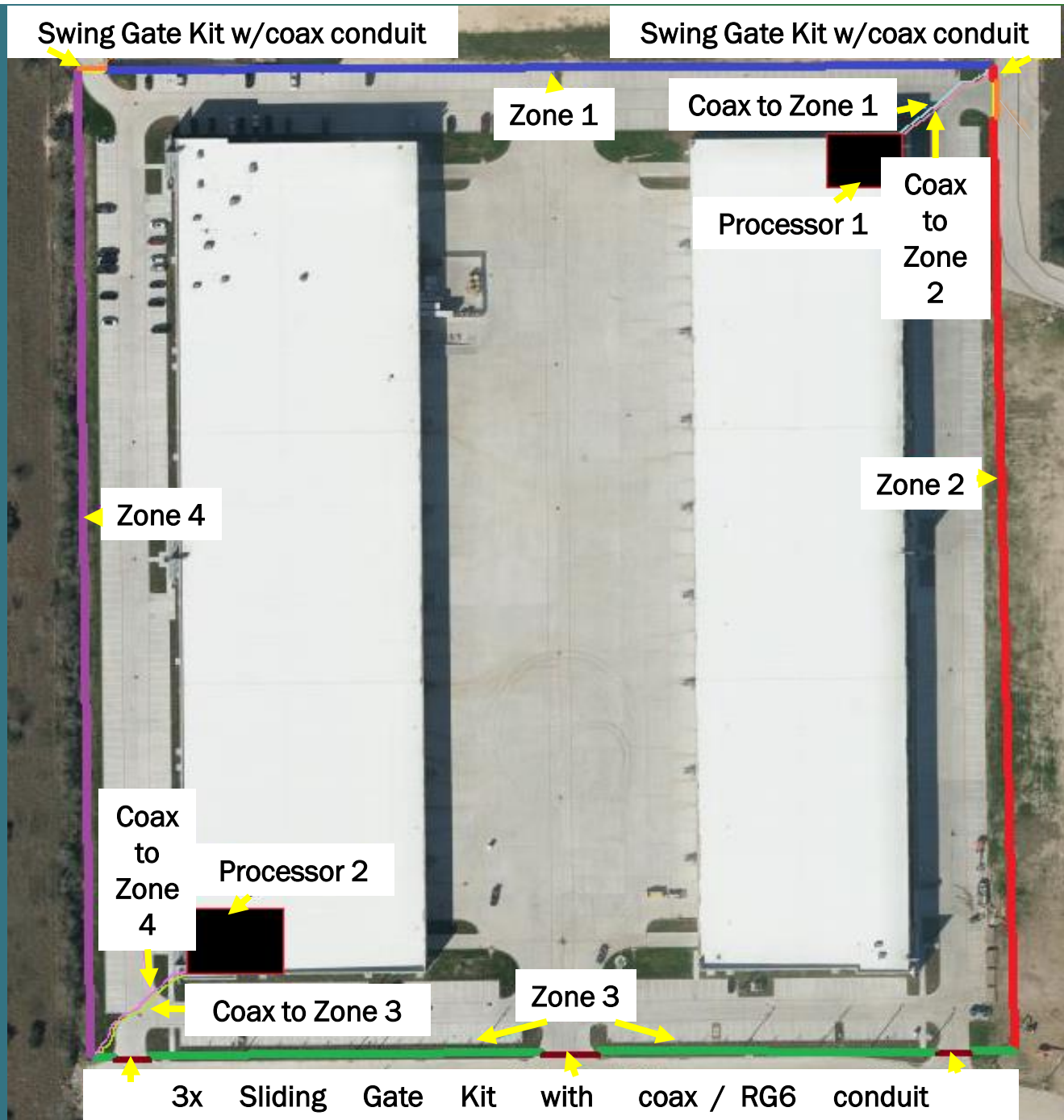
Example Site 5: 3800ft/1150m Fence

4 Zones, 5 Gates.

Advanced setup utilizing 2 kits for a large perimeter, with 2 processors mounted inside buildings, 4 zones, 2 swing gates and 3 sliding gates.

- In the below configuration there are 2 processors that control 4 zones.
- This allows coverage of the approx. 3800'/1150m perimeter broken up into 4 zones, 1 per side.
- Zones 1 & 2 are monitored by processor 1 and zones 3 & 4 are monitored by processor 2.
- The 3 sliding gates in Zone 4 are covered by sliding gate kits and controlled as part of Zone 4 by Processor 2.
- The 2 swing gates and corresponding coax conduit connector (under the gate providing non-sensory connection) are included in their respective zones (Zone 1 & Zone 2)
- In this configuration, both Processors are installed inside the building. The zones are connected to the processor by coax.

Quantities	USA/Canada/Latin America Codes	Rest of the world	Description
2	RB-IROC1Z1000	RB-IROC1Z300	2 zones Processor with 1x300m/1000' roll and EOL (end of line) kit
3	RB-SLIDINGKIT	RB-SLIDINGKIT	Sliding gate Ironclad Kit - Retractable Non sensitive Cord Reel 30 ft. in a Weatherproof Enclosure with 2 Junction Boxes
4	RB-MCTXT	RB-MCTXT	Extension junction box to splice RG6 coax under the gate
8	RB-RBTIES610	RB-RBTIES610	Stainless steel twist ties and tool





THANK YOU!

RBtec Perimeter Security Systems

We hope this guide helped, but if you have any question please feel free to Email us

info@rbtec.com

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