

proxy

User Manual and Installation Guide

# Proxy Mobile Reader Nano Connect

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# Introduction

The Proxy Mobile Reader Nano Connect is installed between a controller and an access control reader. When users present their credential (card, key fob, fingerprint, etc.) to the reader, the reader passes the Wiegand command to the controller. The access control system then grants or denies access to the secure location.

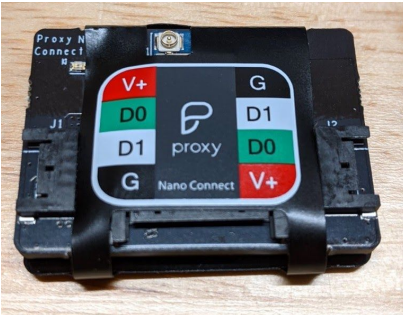
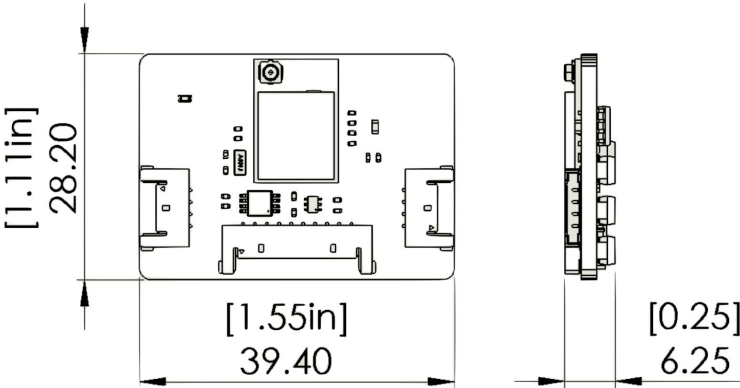
The Nano Connect is Bluetooth Low Energy (BLE) enabled. When the user presents their phone enabled with the Proxy ID app, the Nano receives an encrypted credential via BLE from the phone and then passes the credential to the Access Control System (ACS) via Wiegand. The access control system then grants or denies access to the secure location.

# Mobile Reader Nano Connect

## Functionality

Nano Connect is a physical access control mobile credential reader, intended to be installed behind an existing wall mounted card reader (not provided). The reader is also capable of supporting pass through physical card credentials when used in conjunction with a compatible physical card reader. The reader can interface with an access control system equipped with a Wiegand interface. The reader consists of the following main parts.

## Dimensions



## Product Details (Nano Connect)

Model Name:	Mobile Reader Nano Connect
Device Type:	Mobile Credential: 2.4GHz (Bluetooth Low Energy)
Type of Equipment:	Unsealed controller board Suitable for Indoor use only
Interface Type:	Molex Connector, 4-pin, plug (x2)
Operating Voltage Range:	5V - 24V DC (12V recommended)
Current Draw:	30 mA @ 12V(Ble Transmitter Power Setting=7)
Power Consumption:	0.36W (Max)
Communication Protocol:	Wiegand, Bluetooth Low Energy (BLE)
Credential Type:	Bluetooth Low Energy (BLE): Any bit format (standard or custom) up to 120 bits
Transmission Technology:	Wiegand

## Installation Details

Wiring methods shall be in accordance with the National Electrical Code (ANSI/NFPA70), all local codes, and the authorities having jurisdiction.

## Parts List

- Proxy Reader Nano Connect Board — x1
- Double-Sided Mounting Tape — x1
- Antenna 10cm 2.4GHz — x1
- Molex Connector Wiring Harness — x2 (1 required, 1 optional)

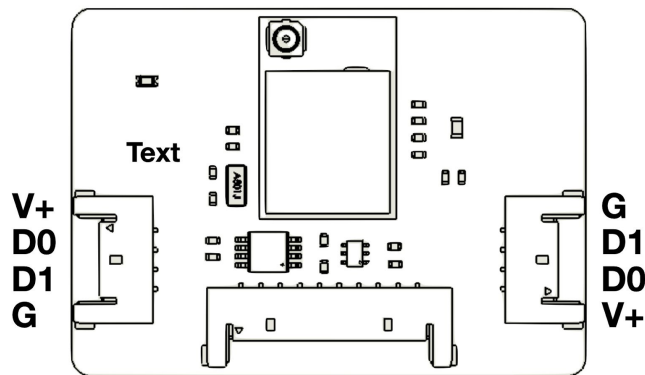
# Reader Specifications

Model / Version(s)	Operating Voltage	Current Rating	Operating Temperature
Nano Connect	5V - 24V DC	30 mA @ 12V(Ble Transmitter Power Setting=7)	-35° to 66°C (-31° to 149°F) 5 to 95% RH (non-condensing)

Do not operate at a voltage above 24V DC as it will damage the hardware

## Wiring Information

### Mobile Reader Nano Connect



Input / Output	Colors
G (Ground)	Black
D0 (Wiegand Data 0)	Green
D1 (Wiegand Data 1)	
V+ (DC+ Voltage)	Red

1. Disconnect the Power (V+/GND) and Wiegand (D0/D1) lines from the existing reader and the wiring to the controller.
2. Connect the Power (V+/GND) and Wiegand (D0/D1) lines from the provided Molex Wiring Harness' single ends to the existing reader and the wiring to the controller.
3. Connect the Molex Wiring Harness connector to the Nano Connect on either the left or right side until it firmly clicks.

**Note:** Be careful when inserting the Molex Wiring Harness connector to the Nano Connect. The connector is top-oriented.

# External Antenna Information

## Important:

Do not kink or bend the antenna cable during installation as this will permanently damage the cable. Instead, carefully loop any extra length of antenna cable.



Okay



Don't



## Antenna Installation

1. Open the enclosure and remove the reader assembly
2. Locate the existing reader's pigtail and identify the Power/GND and D0/D1 wires. The Nano Connect will connect to these wires. Do not connect them at this time.
3. Locate sufficient space to mount the Nano Connect
  - a. Attach antenna behind the existing reader at the top edge of the inner, wall-facing side of the reader (see image below).
4. The Nano Connect comes with a 10cm length antenna cable. The cable should comfortably reach from where you plan to mount the Nano to the antenna mounting location on the wall-facing side of the reader.
5. Connect the antenna cable to the Nano Connect via the u.FL connector. It's important the connector goes in centered on the pin in the center. You will feel it click into place. If not, don't force the connector as this can break the pin.

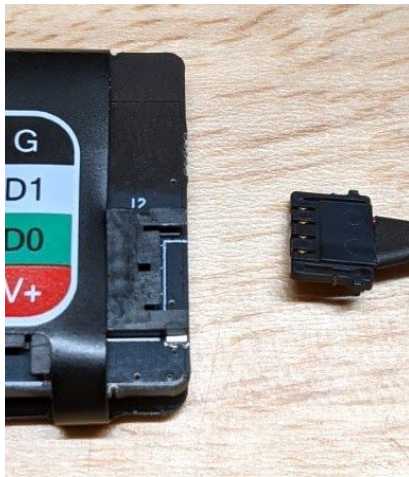


- 6. You can throw away the antenna cable you didn't use or keep it as a spare.

### Antenna Attachment for the Nano Connect



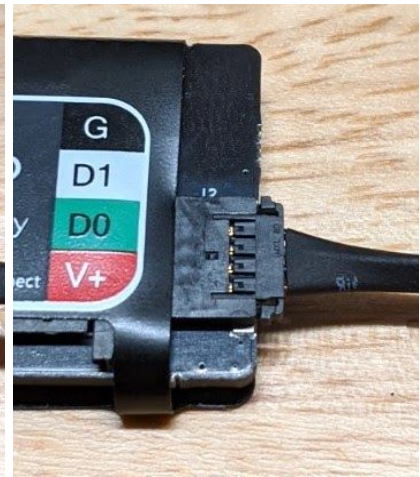
### Harness Attachment for the Nano Connect



❌ Don't



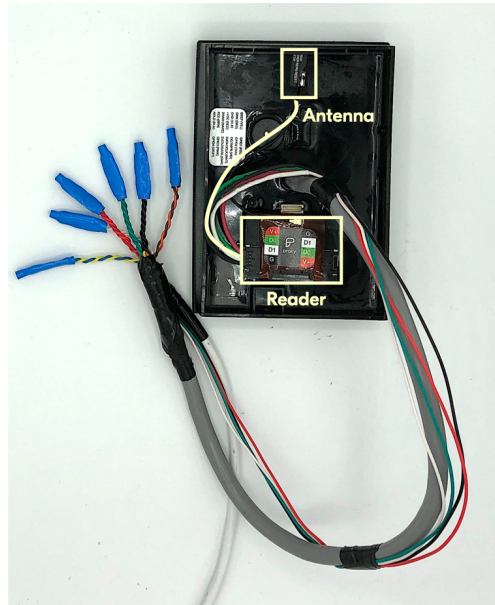
✅ Okay



✅ Okay



## Antenna Attachment for the Nano Connect



## External Antenna Details

Antenna :206994-0100

- Operating Range: 2400~2500MHz
- Antenna Type: Monopole
- Efficiency: >55%
- Bandwidth (VSWR: 2.0 max.) 140 MHz / SWR < 2.0
- Polarization: Linear
- Radiation: Omni directional
- Antenna Gain: 3.6dBi
- Impedance: 50 ohm
- Antenna: 15.4mm x 6.4mm / 0.6" x 0.3"
- Weight: 0.571g

## Antenna I:146153-0150

- Operating Range: 2400~2500MHz
- Antenna Type: Dipole
- Efficiency: >72%
- Bandwidth (VSWR: 2.0 max.) 140 MHz / SWR < 2.0
- Polarization: Linear
- Radiation: Omni directional
- Antenna Gain: 2.8dBi
- Impedance: 50 ohm
- Antenna: 34.9mm x 9mm / 1.4" x 0.4"
- Weight: 0.724g



# Reader Installation Details

## Install Videos



[Proxy Nano Connect Installation on Vimeo](#)

## Install Steps

1. Open the enclosure and remove the reader assembly
2. Locate the wiring harness and identify the V+/GND and D0/DI wires
3. Connect the Nano to the existing wiring per the Wiring Instructions
4. Locate sufficient space to mount the Nano Connect
  - a. Locate behind the existing reader closest to the base of the existing reader's pigtail
5. Attach the antenna. Refer to [Antenna Installation](#).
6. Secure the Nano
  - a. Secure the module behind the reader using the provided double sided mounting tape
7. Install the Proxy faceplate cover, using a single screw at the bottom.

## Power Up and Testing

1. Connect to power
2. View the Nano name in the "Proxy ID" app as a New Device
3. Provision Nano — Refer to the [Provisioning Guide](#) to provision to your Proxy organization and sync to the local Access Control System

## Recommended Infrastructure

1. All cabling and wiring shall be UL Listed or UL Recognized
2. All readers shall be powered by a UL Listed power-limited power supply, or power-limited output from a UL Listed control panel
3. Linear DC Power Supply [5–24VDC, 30 mA @ 12V(Ble Transmitter Power Setting=7)]

**Do not exceed 24V**

The Nano Connect operates at very low current ratings. If operating with the need for more precise ratings of low current draw, please contact Proxy directly.

Voltage (V)	Peak Current (mA)
5	30
12	30
24	30



# Certifications

## FCC

<For MDBT50Q>

Tune up power table BLE

- Each product is programmed with the pre-defined RF parameters
- Each product RF power level is measured to ensure the power level not exceeding the target power level, in a fully calibrated setup
- These settings cannot be changed

Please find below the Maximum Transmit Power for production units:

Band / Mode	Average Power (dBm)	
	LE	BLE 5.0-2M
	GFSK	GFSK
Bluetooth	8	8

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

## RF Exposure Information

This device has been tested and meets applicable limits for Radio Frequency (RF) exposure. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator & your body.



## Information to user

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Proxy, Inc. could void the user's authority to operate the equipment.

## Approval External Antenna

Mfg	Part Number	Max Gain	Type	Size
Molex	206994-0100	2.4GHz/3.6dBi	Monopole – PCB	Cable Length:100mm
Molex	146153-0150	2.4GHz/2.8dBi	Dipole – PCB	Cable Length:150mm



# IC

<For MDBT50Q-U>

Tune up power table BLE

- Each product is programmed with the pre-defined RF parameters
- Each products RF power level is measured to ensure the power level does not exceed the target power level, in a fully calibrated setup
- These settings cannot be changed

Please find below the Maximum Transmit Power for production units:

Band / Mode	Average Output Power (dBm)	
	LE	BLE 5.0-2M
	GFSK	GFSK
Bluetooth	8	8

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

CAN ICES-3(B)/NMB-3(B)

This radio transmitter has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Antenna l types: Monopole

Antenna l gain (in dBi): 3.6dBi



Antenna 2 types:Dipole

Antenna 2 gain (in dBi):2.8dBi

Innovation, Sciences et Développement économique Canada a approuvé l'utilisation de ce transmetteur radio avec les types d'antenne énumérés ci-dessous, le gain maximal admissible étant indiqué. Les types d'antennes non inclus dans cette liste qui ont un gain supérieur au gain maximal indiqué pour tout type listé sont strictement interdits pour une utilisation avec cet appareil.

Types d'antennes 1:Monopole

Gain d'antenne 1 (en dBi):3.6dBi

Types d'antennes 2:Dipole

Gain d'antenne 2 (en dBi):2.8dBi

### RF Exposure Information

This device has been tested and meets applicable limits for Radio Frequency (RF) exposure.

This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

### Informations d'exposition RF

Cet appareil a été testé et répond aux limites applicables en matière d'exposition aux radiofréquences (RF).

Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

### Approval External Antenna

Mfg	Part Number	Max Gain	Type	Size
Molex	206994-0100	2.4GHz/3.6dBi	Monopole – PCB	Cable Length:100mm
Molex	146153-0150	2.4GHz/2.8dBi	Dipole – PCB	Cable Length:150mm





## CE

### Tune up power table BLE

- Each product is programmed with the pre-defined RF parameters.
- Each product RF power level is measured to ensure the power level not exceeding the target power level, in a fully calibrated setup.
- These settings cannot be changed.

Please find below the **Maximum** Transmit Power for production units:

Band / Mode	Average Power (dBm)	
	LE	BLE 5.0-2M
	GFSK	GFSK
Bluetooth	8	8

### RF Exposure Information

This device meets the EU requirements and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.

Hereby, Proxy, Inc., declares that the radio equipment type Mobile Reader Nano Connect is in compliance with Directive 2014/53/EU.

Declaration: The importer information and postal detail will be provided with the shipping document.

## AU

### Tune up power table BLE

- Each product is programmed with the pre-defined RF parameters.
- Each product RF power level is measured to ensure the power level not exceeding the target power level, in a fully calibrated setup.
- These settings cannot be changed.

Please find below the **Maximum** Transmit Power for production units:

Band / Mode	Average Power (dBm)	
	LE	BLE 5.0-2M
	GFSK	GFSK
Bluetooth	8	8



## RF Exposure Information

This device meets the EU requirements and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.

Hereby, Proxy, Inc., declares that the radio equipment type Mobile Reader Nano Connect is in compliance with Directive 2014/53/EU.



### Waste Electrical and Electronic Equipment (WEEE)

This symbol means that according to local laws and regulations your product and/or its battery shall be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. Proper recycling of your product will protect human health and the environment.

# Install Troubleshooting

Possible Symptoms	Likely issue	How to resolve
<b>Reader</b>		
LED is not illuminating on Nano	Power supply is disconnected or not supplying enough voltage	Either wiring at the reader or at the power supply has been disconnected. Double check both connections to bring the reader back online. Lack of power to the ACS system may also cause this—double-check the wiring connecting the reader to the panel.
	Antenna is not connected properly, or needs replacement	LED should illuminate when a valid mobile credential is presented. If the LED is not illuminating it could be caused by a disconnected or poorly seated or compromised antenna. Without a proper antenna connection the Nano will not be able to detect nearby mobile devices over BLE.
<b>Issues Unlocking</b>		
Reader does not acknowledge phone	Permissions issue	Be sure the user has been granted access through Proxy Mobile Access Manager. Users need to be added to the org, as well as relevant groups. All groups need to be associated with access points in order to allow ingress.
	Bluetooth issue	Be sure that Bluetooth is enabled on the mobile phone. If it is, toggle airplane mode to disconnect all existing Bluetooth connections & reconnect it for a strong connection.
Have to open app to get reader to unlock	Geo-fence/ locations issue	Be sure location services are always enabled if a user is terminating the app between uses. If a user prefers to keep location services turned off, they will need to open the app in order to unlock Proxy reader every time, unless they do not ever terminate the app.

## Warranty

For warranty information, visit this link: <https://www.proxy.com/legal>

