



X-1 CLOUD CONNECT v3.0

User Manual

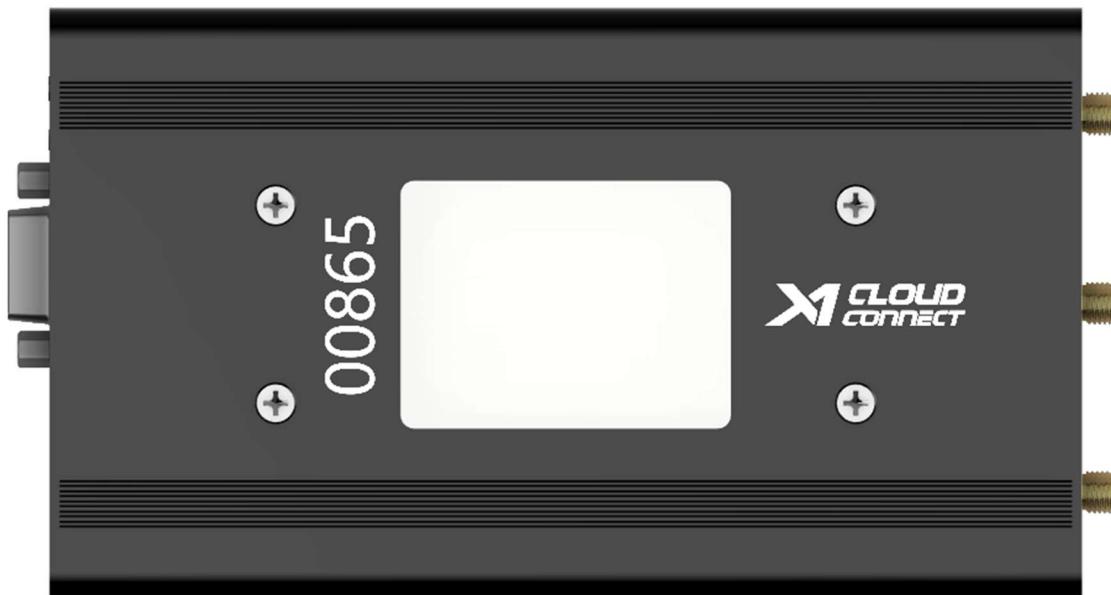




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Introduction

Overview of the Cloud Connect v3.0

The Cloud Connect v3.0 is a cutting-edge IoT modem designed to facilitate seamless communication between handheld devices, dispensing equipment, electronic registers, and the cloud. It supports comprehensive GPS tracking, truck telematics, and advanced data handling, making it an ideal solution for modern fueling operations.

The Cloud Connect includes a unique **MIMO antenna** designed to handle three distinct signals: Cellular, GPS, and Wi-Fi. The antenna is equipped with a magnetic base that ensures a secure, stable installation on metal surfaces, while also allowing for quick and convenient setup in various locations.

Key Features

The 3rd generation X-1 Cloud Connect seamlessly integrates with the TCS 3000 Register and includes:

- Streamlined Installation and Set-up
- Advanced board designed for signal strength
- Globally Certified LTE Module
- Improved workflow and faster ticket capture
- Full GPS tracking capabilities
- LCD Status display with Improved Diagnostics
- Truck Telematics (additional hardware required)

Getting Started

Package Contents

Upon receiving your Cloud Connect v3.0, ensure that the following items are included in the package:



X-1 Cloud Connect



MIMO Antenna

If any of the above items are missing or damaged, please contact us for assistance.

Understanding Interfaces

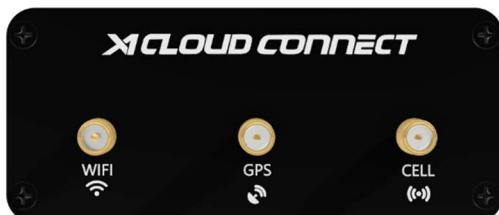
MIMO Antenna

Each signal has its own dedicated cable, clearly labeled for easy identification and proper connection:

- **CEL:** Cellular signal
- **GPS:** GPS tracking
- **WIFI:** Wi-Fi signal

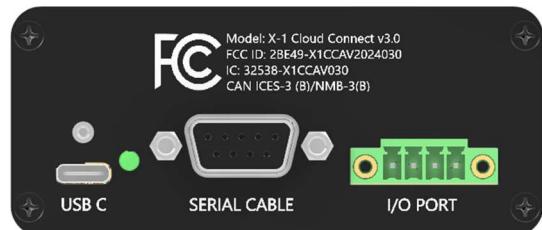


X-1 Cloud Connect



- **Antenna Ports:** Ports CEL, GPS, and WIFI allow for connection to the included MIMO antenna.

- **Serial Cable:** Supports serial communication with the electronic register and powers the X-1 Cloud Connect.
- **I/O Port:** This port is used for digital input/output connections.
- **USB C:** Used to program and debug the X-1 Cloud Connect.



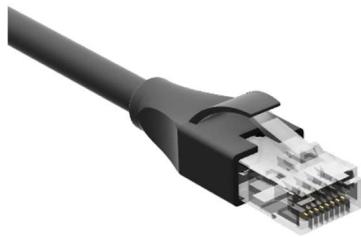
Before Install

Before beginning the installation of the X-1 Cloud Connect, confirm the following minimum requirements to ensure proper operation and workflow:

- **Serial Cable:** Verify that the serial cable from the electronic register is installed. If the connector is not a DB9 but an RJ45, contact Support to request a DB9-RJ45 adapter.



DB9 Connector



RJ45 Connector

- **Power Supply:** The X-1 Cloud Connect is powered via the serial connector. You can confirm there is power in the Serial Cable measuring the voltage between pin 5 (GND) and pin 9 (VDC) of the Serial connector. If the device is not receiving power, refer to the troubleshooting section below.

Installation

Step 1 Mount MIMO Antenna

Equipped with a magnetic base, the MIMO antenna allows for secure installation on any metal surface. Proper placement of the antenna is critical for optimal signal strength, ensuring maximum device performance. The antenna must be mounted in a strategic location that minimizes obstructions and interference, allowing the device to maintain high-speed communication and stable connectivity.

The location and quality of the antenna mounting is key to good signal strength and ensuring your device maintains the speeds it is designed for.

Identify a location, the highest practical unobstructed location that is:

- Avoiding other metal structures around the antenna
- At least 12 inches (300mm) away from other antennas installed
- At least 12 inches (300mm) away from windows

Route the antenna cables inside taking care not to damage the cable or connectors. Use caution not to cross other wires at 90-degree angles to minimize electromagnetic interference.

STEP 2 Mounting the X-1 Cloud Connect

Since each dispensing equipment can be different, we recommend careful consideration when installing the X-1 Cloud Connect. The device should be installed so that the display is easily visible but be careful not to install the device where it can be damaged during daily use.

We recommend the installation of a mounting bracket or the use of 3M Velcro Branded Extreme Outdoor Hook & Loop Tape.

STEP 3: Connecting Cables to the X-1 Cloud Connect



Connect the coax cables from the MIMO antenna (CEL, GPS, WIFI), ensuring the labels on the antenna match the labels on the X-1 Cloud Connect. Hand-tighten these connections; no tools are needed.

Connect the serial cable from the TCS 3000 to the Serial Port on the X-1 Cloud Connect. The serial cable includes screws to secure the connection. Use a screwdriver to hand-tighten these screws without over-torquing.

This cable facilitates data communication with the TCS 3000 register while simultaneously supplying power to the X-1 Cloud Connect.



STEP 4: Activate your New X-1 Cloud Connect:

Once installed and powered, your device can be activated. With both the electronic register and X-1 Cloud Connect turned on, contact support at +1 (786) 725-5058 for activation assistance. Have the following information ready when you call:

- **Electronic Register Name/ID**
- **X-1 Cloud Connect Number** and any startup screens or messages noted when you powered the device.

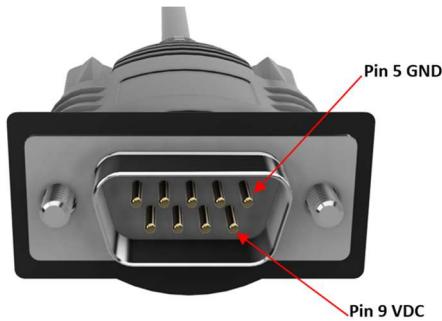
The X-1 Cloud Connect requires a specialized representative for activation. For convenience, schedule your activation call in advance by contacting support at the number provided.

Troubleshooting

While every X-1 Cloud Connect goes through an extensive quality control process and is tested on registers before shipping, the variations in dispensing equipment, antenna locations, signal quality and register settings may result in unforeseen issues. Below are troubleshooting tips for common problems:

If your X-1 Cloud Connect doesn't turn on:

Measure voltage between pin 5 (GND) and pin 9 (VDC) of the serial cable from the electronic register. The reading should be between 24VDC.



If no power is detected, the TCS 3000 may require configuration changes to ensure power is supplied through the 9-pin connector. This step involves opening the register, which should be performed when updating firmware.

If your X-1 Cloud Connect does not connect to the cellular network:

- Inspect the antenna, cables, and connectors for damage.
- Ensure the coax cable labeled **CEL** is connected to the correct port on the device.
- Check that the center pin inside the antenna connector is not damaged or missing.



Technical Specifications

MOBILE

Cellular Module	LTE Cat M1/Cat NB2/EGPRS	
3GPP Release	Rel-14	
Frequency Bands	Cat M1:	B1/B2/B3/B4/B5/B8/ B12/B13/B18/B19/B20/ B25/B26/B27/B28/B29
	Cat NB2:	B1/B2/B3/B4/B5/B8/ B12/B13/B18/B19/B20/ B25/B28/B66/ B71/B72
	GSM/EDGE:	850/900/1800/1900 MHz
Data Transmission	Cat M1:	Max. 588 (DL) Max. 1119 (UL)
	Cat NB2:	Max. 127 (DL) Max. 158.5 (UL)
	EDGE:	Max. 296 (DL) Max. 236.8 (UL)
	GPRS:	Max. 107 (DL) Max. 85.6 (UL)

GNSS

Support	GPS/GLONASS/BeiDou/ Galileo/QZSS
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WIRELESS

WIFI Mode	2.4 GHz, IEEE 802.11 b/g/n
Bluetooth	Bluetooth 5.2
Modulation Mode	CCK/ BPSK/ QPSK/ 16QAM/ 64QAM

INTERFACES

Antennas	1 x SMA for Cellular, 1 SMA for GPS, 1 RP-SMA for Wi-Fi
USB	1 x USB C for programming and debug
Serial	1 x DB9 for RS232 communication and power input
I/O	1 x Digital Input, 1 x Digital Output. Can be used for UART communication
Display	1 x 2.4-inch LCD Color Display
SIM	1 x internal Nano SIM slot 4FF

OPERATING CONDITIONS

Operating Voltage	24 VDC
Temperature	-40 °C ~ +85 °C
Humidity	30% - 60%

PHYSICAL SPECIFICATIONS

Material	Aluminum housing
Dimensions (W x H x D)	164 x 88 x 38 mm

ANTENNA

Material	PC
Dimensions (W x H)	127.7 x 71.7 mm
Connectors	1 x SMA for Cellular, 1 x SMA for GPS, 1 x RP-SMA for Wi-Fi
Cable Type and Length	RG174LL, 3000 mm

CERTIFICATION

Regulatory	FCC, IC
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Safety and Compliance

- **Safety Guidelines:**
 - Do not expose the device to water or moisture.
 - Ensure proper ventilation around the device.
- **Compliance:**
 - The Cloud Connect v3.0 complies with FCC and IC standards.

FCC Statement:

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.

Warning:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Class B Device Compliance:

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.



Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

IC Compliance:

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). 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.

French Translation: 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.

IC Radiation Exposure Compliance:

The radiated energy from the antennas connected to the wireless adapters conforms to the IC limit of the RF exposure requirement regarding IC RSS-102, Issue 6 clause 4.3.

French Translation: L'énergie rayonnée par les antennes reliées aux adaptateurs sans fil est conforme à la limite IC de l'exigence d'exposition aux RF concernant RSS-102, Issue 6 clause 4.3.