



4XG ATM Tracker™

INITIALIZATION AND INSTALLATION MANUAL



Features of the 4XG ATM Tracker™ device

- + Protects the ATM and Cash
- + Covert design
- + Automatically detects if ATM tilts or moves
- + Notifies police based on US or Canada police set up
- + Provides 4 input and 2 output ports for external sensors
- + Provides for CAN bus port for future expansion
- + May be disarmed remotely
- + Conserves battery when power is lost
- + Latest GNSS chipset
- + LTE CAT M1 compatible network
- + Internal and external antennas provide optimal CELL & GNSS reception
- + Uses dual band external antenna (CELL & GNSS)
- + Can activate via tilt, input triggers, or ping from web
- + Uses data storage to fill in track in weak areas
- + Auto enters No External Power (NEP) Mode
- + Daily health checks with cellular connection
- + Over the Airwaves (OTA) firmware updates
- + Install validation chirp and forced chirp for Law Enforcement (Via Cennox Only)
- + Plug-in replaceable battery
- + Product operating temperature range: -20°C to 60°C
- + Battery charging temperature range: 0°C to 45°C

CENNOX's 3XG ATM Tracker™ used GPS technology exclusively for Device location. Our 4XG technology has improved location performance by utilizing GNSS (Global Navigation Satellite System). GNSS is the umbrella term that includes GPS, GLONASS, and several other satellite systems.

Features of the 4XG ATM Tracker™ device



Figure 1 – Top Face

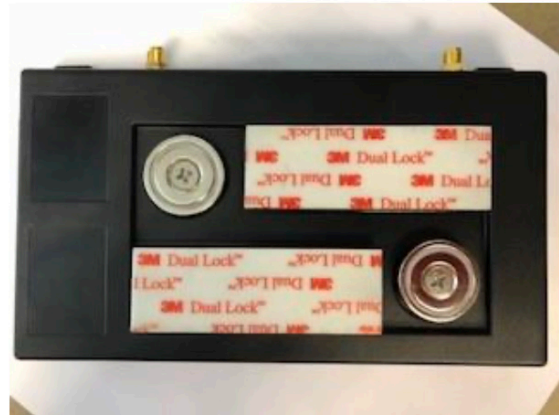


Figure 2 – Bottom Face



Battery Door Open Button
Pry out and up to open
Push in to close

Figure 3 – Right Side Battery Compartment and Button

Features of the 4XG ATM Tracker™ device

- + After initial turn on, the ATM Tracker™ will be activated by any of the following:
 - Tilt of 30°+for greater than 5 seconds.
 - Up to 4 Inputs can be used to trigger ATM.
 - PingfromWeb.
- + ATM can be configured for Tilt activation.
- + 4 Inputs (dry contact) can be utilized for external triggering or monitoring status of ATM; (Ex. Breach (via breach panel or taperwire), temperature sensor, door open, door closed, etc.) must first be programmed via web.
- + 2 Outputs (either normally open or normally closed) can be utilized to activate another sensors (Ex. light, alarm, etc.) (although works constantly must be programmed and sync'd via web.)
- + All configurations are set on the web and cannot be directly controlled by customer.
 - Working on changing Field Service Wizard to allow FSR configurability.

Features of the 4XG ATM Tracker™ device

There are 5 LEDs on the 4XG ATM Tracker™. There are 3 LEDs on the center right of the top face, referred to as the Main LEDs, from top to bottom is green, red, and amber. The 2 LEDs on upper right of the top face are the battery charging status LEDs. The order of the LEDs from top to bottom are: green and red. The FSR is not required to watch the patterns or behaviors of the LEDs but a basic understanding of what is occurring will help in troubleshooting.

LED COLORS/ INTENDED PURPOSE

Name / Color	Primary Purpose
Amber	Displays CELL / GNSS Strength
Red	Displays Battery Level
Green	Displays Self-Test Errors
Charge Green	Displays when External Power is Connected
Charge Red	Displays when Battery is Charging

Main (Group of 3) LED primary purpose descriptions

POWER ON VIA SWITCH

- + Upon initial turning on of power switch, a self-test will be performed and the main LEDs will flash.

AMBER (CELL/GNSS) LED

- + Once the Device is connected to the network, the amber light will signify CELL and GNSS strength as described in the following two sections.
- + CELL/GNSS Strength Reporting:
 - Follow a single flash, report CELL, double flash, report GNSS pattern.
 - Note that if the amber LED is solid on, the device has not registered yet.
- + The following table gives indications and meanings to the CELL report:

Flashes	Cell Power (dB)	Approximate Signal Strength
0	0 – 5	NOT REGISTERED / LOW
1	6 – 11	LOW
2	12 – 17	LOW
3	18 – 23	MEDIUM
4	24 – 29	MEDIUM
5	30 – 35	MEDIUM
6	36 – 41	HIGH
7	42 – 47	HIGH
8	48 and up	HIGH

+ The following table gives the indications and meanings to the GNSS report:

Flashes	Satellites Tracked
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8 (or more)

— RED (BATTERY) LED

- + Indicates battery life remaining.
- + When not completely drained there will be a minimum of 1 flash to a maximum of 8 flashes.
 - It will be rare to see 8 flashes, often the user will see a max of 7 in practical application.
- + The table below outlines the number of blinks and the associated battery level represented:

Flashes	Voltage Range (V)	Approximate Battery Life Remaining (%)
8	4.30	100
7	4.10 – 4.29	95
6	3.90 – 4.09	75
5	3.70 – 3.89	46
4	3.50 – 3.69	15
3	3.30 – 3.49	7
2	3.10 – 3.29	2
1	2.90 – 3.09	0
0	Less than 2.90	0

———— GREEN (SELF-TEST) LED

- + The primary purpose of green LED is to report when the self-test function of the Device has encountered a hardware failure and/or report when the install is completed. The green light should be solid on after install has been completed. If the green LED gives any of the below flash sequences (other than solid on), it should be called in to Cennox Support and undergo troubleshooting via Engineering.

Flashes	Condition
Fast Flashing	Device Initializing
1	CELL Failure
2	GNSS Failure
4	SENSOR Failure
8	Low Battery
16	Processor Reset
Quick Double	BETA Firmware
SOLID ON	Device Successfully Installed

Installation procedures

———— PARTS REQUIRED FOR INSTALLATION:

- + ATM Kit should come with all the parts listed below

———— PARTS FOR KIT (TILT ONLY):

- + 4XG ATM Tracker™ with Velcro attached (Tracker should not be opened in field, if Tracker is defective it must be replaced)
- + Wire ties for cables and service loops in antenna/power cable
- + Alcohol pads
- + Cable tie-down pads
- + Power Supply (May not be shipped with Upgrades since same power supply as 3XG can be used)
- + Antenna (with 2 cables attached)

PARTS NOT INCLUDED IN KIT BUT MAY BE NEEDED AND SHOULD BE CARRIED AS CAR STOCK:

- + Additional cable tie-down pads and wire ties
- + 1' Cable power adapter
- + Cable 1 to 2 power cord splitter

VERIFICATION

- + Vendor meet must be scheduled prior to doing an ATM install
- + **Note:** ATM does not need to have power to install the tracker, however Cennox Support and Field Service Management need to know if it does not have power at install so the customer can be notified.

DEVICE ORIENTATION

To keep it simple, all descriptions will be with the ATM Tracker™ in the following orientation: white label on left top face, green terminal connector block on top side, battery compartment on right side with 2 battery charge LEDs on upper right as shown in diagram below.



Figure 1 - Default Orientation View

INITIALIZE ATM TRACKER™

- + Vendors outside of Cennox
- + Call +32 2 702 18 20 (CENNOX Install Line)
- + Verify ATM ID and address
- + Request to be placed into Install Mode
- + Request to accept new Devices
- + CENNOX Field Reps use Field Service Wizard
- + Verify ATM ID and address and install box
- + Place location into Install Mode accepting new devices
- + Tech does not open unit for installation
- + If available, attach a spare CELL/ GNSS antenna to unit otherwise let Device use internal antenna (but must be in good location outside to get GNSS when using internal antenna)
- + Cellular lead (female connector wire with white label) will go in top left Cellular antenna post
- + GNSS lead (male connector with blue label) will go in top left GNSS Antenna Post
- + Units should come fully charged but is recommended to attach power when initializing

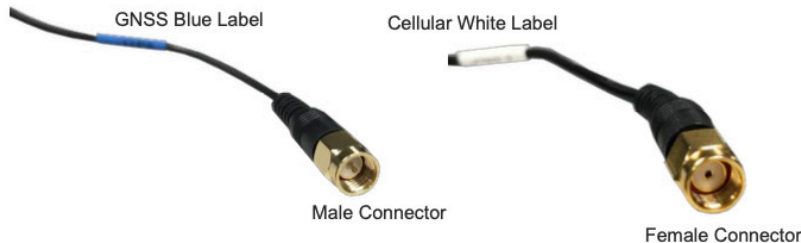


Figure 2 - 4XG ATM Antenna Leads and Connectors



Figure 3 - ON/OFF Switch

For the 4XG ATM Tracker™ to operate correctly in the field, the ON/OFF switch must be turned ON. It is located inside the hole at the lower right hand of Tracker. Slide the switch down using the tip of small plastic screwdriver (away from the main LEDs) to turn on. Once turned on, the FSR should never need to turn it off again unless permanently removing the Device from ATM.

INITIALIZE ATM TRACKER

- + Once switched ON, LEDs will follow self-test, FSR should watch for this self-test as if it does not happen it maybe an indication of low battery or defective unit prior to installing
- + Tilt ATM Tracker™ to activate
- + Device should install within a few minutes
- + Device will yield an audible chirp (3 times) along with solid green LED indicating install complete
- + Text messages/emails should go to your phone
- + Should get Device Active Alert
- + Should get Installation Complete
- + Should get Still Reporting After 5 Minutes Alert (ONLY if on longer than 5 minutes)
- + Get ATM ID and record on tablet and distribute to Cennox Support to enter into system
- + If unit is not installing after 15 minutes, call Cennox Install Hotline (+32 2 702 18 20) have Cennox Support check if home location is set by proximity and the install box on web is in correct location.
- + While the Device is installing on web the tech can install the power and antenna cables following the ATM guidelines below.

Note: Directions for showing placement of Tracker and accessories in specific ATM's are available.

Install Equipment into ATM

Note: Tracker must be installed in the reinforced safe cavity where the cash dispenser is located.

- + Look for an area where the Tracker will fit on wall and not be rubbed or hit by any moving parts when the ATM vendor is servicing the ATM. Ask the ATM vendor if anything can or will be added to machine where you are placing the ATM Tracker™.
- + Thoroughly clean surfaces where mounting the ATM Tracker with alcohol and let dry.
- + The ATM Tracker™ should be placed in an area that is free of moving parts and known service areas

ANTENNA

- + Antenna should be placed flat on top of the safe inside the printer cavity area where it cannot be hit by moving ATM drawers/printer and where it will stay with safe if top section is disconnected other considerations is to be placed as to be able to receive Cell/GNSS signals easily (Ex. behind plastic components or vents)
- + Antenna will be attached using double-sided tape on flat metal surface of safe and will actually use the metal surface of the ATM as an additional antenna field.
- + Route both CELL & GNSS cables to where you are going to be mounting the Tracker.
- + Note: Secure all cable runs to prevent cables from being snagged on sliding parts or assemblies by tying cables to cable tie blocks that are installed on flat alcohol cleaned ATM surfaces. Use as many cable ties as needed (at least every 6-8 inches) to secure the cables. Cables should not be loose or placed where they can interfere with other ATM parts. If possible, do not tie-in with other vendor cables.

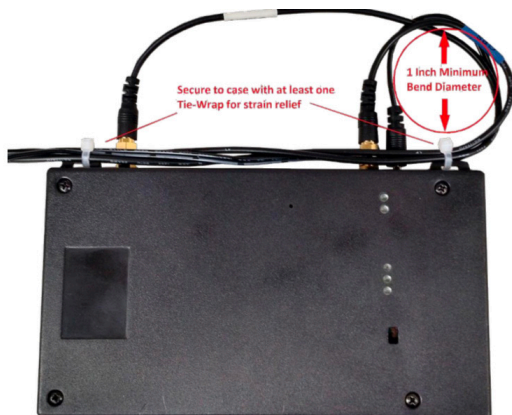


Figure 4- Service Loops on Cables to ATM Tracker

TRACKER

- + Clean all wall surfaces where the Tracker will be mounted with alcohol and let dry prior to installing.
- + Plug in previously installed antenna to the ATM Tracker™. (Note different type antenna connectors and 3XG Antenna is not compatible with 4XG ATM Trackers™).
- + Plug in electrical power transformer to the ATM Tracker™ (3XG and 4XG power transformers are compatible).
- + Put service loops on antenna cables and power cables and secure using tie straps as shown.
- + Note: Magnets on back of the ATM Tracker™ are strong keep fingers out from between Tracker and safe wall.
- + Mount ATM Tracker™ on clean wall using supplied Velcro strips. Orient the Tracker so the battery compartment button is easily accessible (used for servicing battery).
- + Velcro strips should already be on the back of the ATM Tracker™.
- + Once power is connected and ATM power is present, the green charging LED will show if external power is applied. The red charging LED will come on if the battery is not fully charged and will stay off if the battery is fully charged.
- + Do not let vendor secure ATM yet.

RESET ATM TRACKER™

- + Ensure unit is secured to safe wall with external power and antenna attached.
- + **Close but do not lock safe.**
- + Either reset ATM via Field Service Wizard or call CENNOX Install Hotline (+32 2 702 18 20).
- + **If ATM does not have power connected, notify CENNOX support when resetting the tracker.**
- + Verify settings on the website including external power connected, external power voltage, install complete, and turn on Beacon (defaulted ON). If inputs and outputs are connected, verify state and status of each on web.
- + Once all settings are confirmed, reset ATM button on website. This will reset accelerometers in Tracker to its new installed position.
- + Confirm reset has registered on server (which could take up to two minutes).

NEP MODE (NO EXTERNAL POWER)

CRITERIA FOR NEP MODE:

- + After ATM Tracker™ is reset if external power is lost or not present, a one-hour timer is started. If external power is not sensed for one-hour time period and the power is <3.9v then the Tracker will automatically go into NEP mode.
- + Application of External power for >1 minute or if device activates will reset 1-hour timer and come out of NEP Mode.
- + CENNOX Support can see on web if a Device is in NEP mode but CennoxSupport cannot communicate with a Device that is in NEP mode.

ATM battery service calls

PARTS REQUIRED

- + 4XGATM Battery.

VERIFICATION

- + Vendor meet must be scheduled prior to servicing ATM so that ATM vendor will be on-site to open the ATM.

REPLACING BATTERY (SEE PICTURES BELOW)

- + Using Field Service Wizard, place location into Install Mode.
- + Have vendor open safe.
- + Unplug power from ATM Tracker™.
- + Open battery compartment door using fingers or small screwdriver to lift up on battery compartment door button and lift out until door comes off.
- + Remove old battery.

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- + Wait until all lights stop flashing (unit is reporting status to web).
- + Install new battery
- + Make sure door lock button on Battery compartment door is up when replacing the compartment door.
- + Reattach the battery compartment door and push button in to lock.
- + **Note:** If door does not lock entire unit must be replaced
- + Plug power back into Tracker.
- + Tilt Tracker to activate and let report to web.
- + If needed check LEDs (referring to this manual for details on LEDs).
- + Device should report within a few minutes.
- + Text messages/emails should go to your phone:
 - Should get Device Active Alert
 - Should get Service Complete Alert
 - Should get Still Reporting After 5 Minutes Alert (**only** if on longer than 5 minutes)
- + Verify with vendor that the ATM ID has not changed. If it has, record and report the change on Field Service Wizard.
- + Reset ATM and take out of Install Mode using Field Service Wizard.
- + In the unlikely even the Tracker doesn't show any LED activity or report on the web, it means there is a problem and the ATM Tracker™ should be replaced.

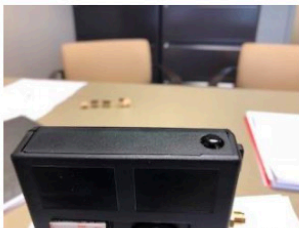


Figure 8 – Lifted Battery Door Button



Figure 9 – Lifted Battery Door



Figure 10 - Battery



Figure 11 – Lifted Battery

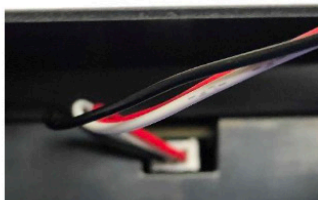
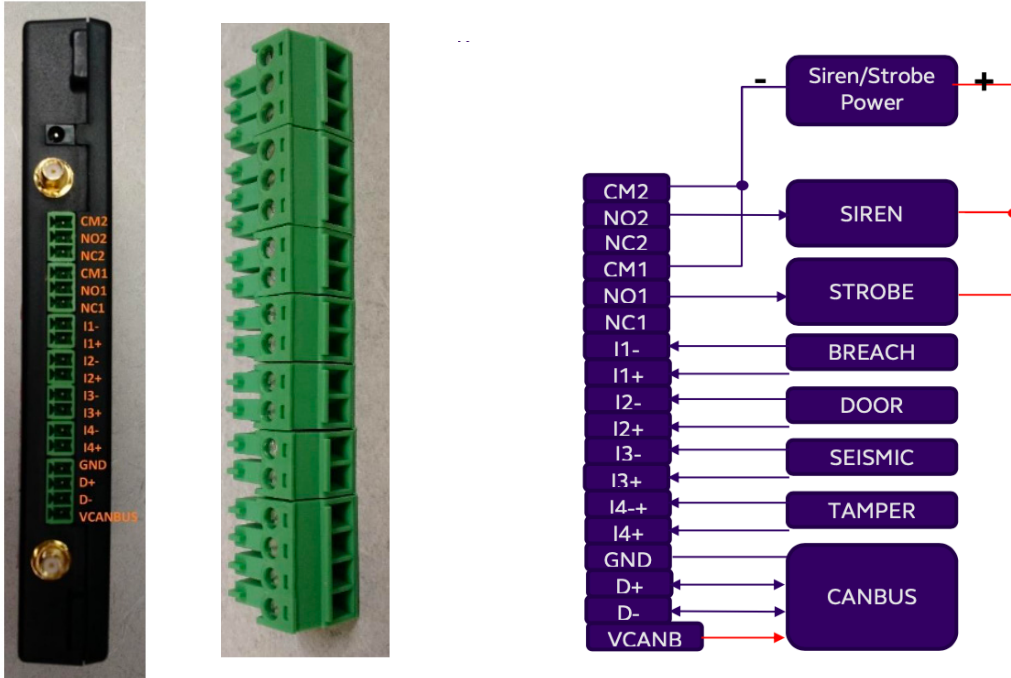


Figure 12 – Battery Plug Orientation

SIREN/ STROBE INSTALLATION



SIREN/ STROBE INSTALLATION NOTES

- + Connect I1+ to I1- via normally closed switch such as breach panel or taperwire
- + Connect I2+ to I2- via normally closed switch such as door panel.
- + Connect I3+ to I3- via normally closed switch such as seismic panel.
- + Connect I4+ to I4- via normally closed switch such as tamper panel.
- + Device is triggered when the panel signal is interrupted.
- + Dry contact relays provide NO1, NC1, and CM1.
- + Dry contact relays provide NO2, NC2, and CM2.
- + Dry contact relays rating:
 - Resistive 30VDC / 1A
 - Resistive 125VDC/.24A
 - Resistive 250VAC/.25A
- + Other configurations are available, contact factory for details. Canbus is reserved for future use, firmware upgrade required.

SIREN/ STROBE INSTALLATION NOTES

- + Placing 4XG ATM into Install Mode will prevent normal triggered reporting.
- + Strobe and siren relays will continue to function whether the Device/location is in Install Mode. Remove ATM from Install Mode after installation testing.

EQUIPMENT REQUIRED

Part Number	Description	Qty	Notes
40211101	4XG ATM 216 US TILT	1	US System
40211102	4XG ATM 216 US TILT/MOT	1	US System
40211103	4XG ATM 216 US TILT NO PSU	1	US System, no Power Supply (uses same Power Supply as 3XG – can be ordered for upgrade)
40211104	4XG ATM 216 US TILT/MOT NO PSU	1	US System, no Power Supply (uses same Power Supply as 3XG – can be ordered for upgrade)
40211105	4XG ATM 216 US TILT NO PSU/ANT	1	US System, no Power Supply or Antenna
40211106	4XG ATM 216 US TILT/MOT NO PSU/ANT	1	US System, no Power Supply or Antenna
40211107	4XG ATM 216 CAN TILT	1	CANADA System
40211108	4XG ATM 216 CAN TILT/MOT	1	CANADA System
40211109	4XG ATM 216 CAN TILT NO PSU	1	CANADA System, no Power Supply (uses same Power Supply as 3XG – can be ordered for upgrade)
40211110	4XG ATM 216 CAN TILT/MOT NO PSU	1	CANADA System, no Power Supply (uses same Power Supply as 3XG – can be ordered for upgrade)
40211111	4XG ATM 216 CAN TILT NO PSU/ANT	1	CANADA System, no Power Supply or Antenna
40211112	4XG ATM 216 CAN TILT/MOT NO PSU/ANT	1	CANADA System, no Power Supply or Antenna
52010557	BATTERY LI-ION 2600 MAH CHARGED	1	Included in kit, order for replacement or spare
99900655	4XG ATM EXTERNAL ANTENNA (LTE/GNSS)	1	Included in kit, order for replacement or spare
52011165	CONNECTOR PHOENIX 2 CONTACT ATM	4	Not part of system kit
52011166	CONNECTOR PHOENIX 3 CONTACT ATM	2	No part of system kit
51069690	SWITCH DOOR W/CABLE	1	Optional
51076008	CABLE POWER ADAPTER 1FT ATM	1	Included in kit, order for replacement or spare
51080320	CABLE 1-TO-2 POWER CORD SPLITTER 1.5FT	1	Included in kit, order for replacement or spare
51074177	ALCOHOL WIPE (CHEMPAD)	1	Included in kit, order for replacement or spare
32010011	SIREN STROBE ATM	1	Optional
30010016	BREACH PANEL WITH WIRES	1	Optional
51003521	CABLE TIE PADS	3	Included in kit, order for replacement or spare
52010616	VELCRO 3M DUAL LOCK 1" X 3"	1	Included in kit, order for replacement or spare
99900290	TAPE ATM ANTENNA 2IN ROUND	1	Included in kit, order for replacement or spare