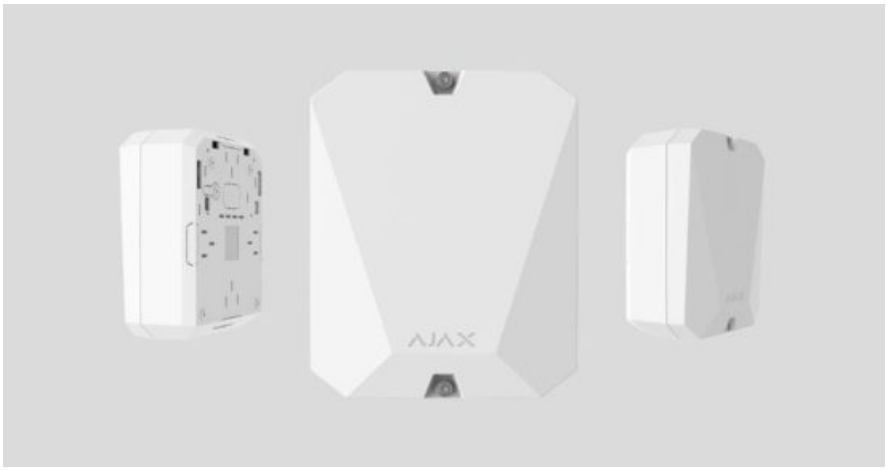
AJAX 20354 MultiTransmitter Module User Manual

MulTransmitter User Manual

Update December 29.2020



MultiTransmitter is an integration module with 18 wired zones for connecting third-party detectors to the Ajax security system. To protect against dismantling, MultiTransmitter is equipped with two tampers. It is powered from the mains 100-240 V AC, and can also run on a 12 V backup battery. It can supply 12 V power to connected detectors. MultiTransmitter operates as part of the Ajax security system by connecting via the Jeweller secure radio communication protocol to the hub. The hub communication range is up to 2,000 meters provided there are no obstacles. If jamming or interference is detected, the “high level of interference at Jeweller frequencies” event is transmitted to the central monitoring station of the security company and system users.

What jamming of a security system is

Not compatible with Oxbridge Plus, uart Bridge, and third-party security central units

The device connects to the hub and is configured through Ajax apps on iOS, Android, macOS, and Windows. All alarms and user events are reported by push notifications, SMS, and calls if enabled. Ajax security system can be connected to the central monitoring station of the security company. The list of authorized partners is available here.

Buy MultiTransmitter integration module

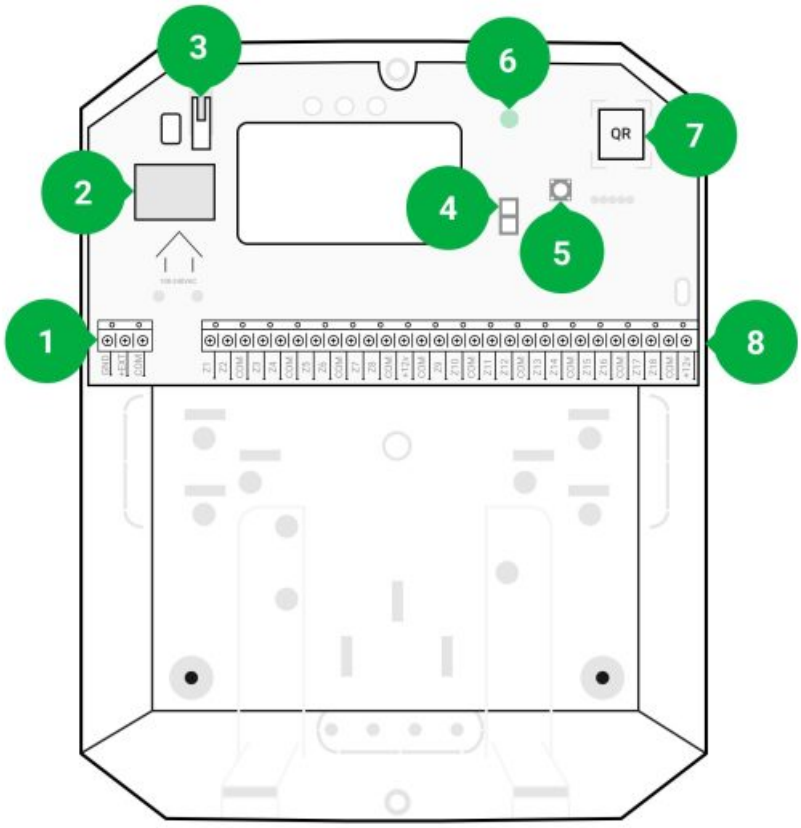
Functional elements Body elements

1. Screws secure the body lid. Unscrew with bundled hexagon key (0 4 mm)
2. Cavity for backup battery

   Battery not included with MultiTransmitter set
3. QR code and ID/serial number of the device
4. Perforated part of the body. It is necessary for tamper triggering in case of dismounting attempts
5. Perforated part of the body for the output of wires of connected detectors and devices

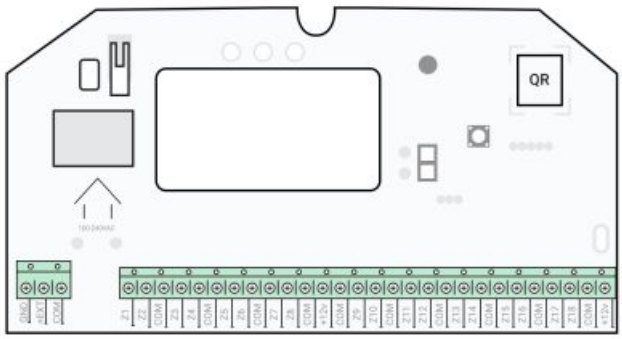
Contents

MultiTransmitter card elements



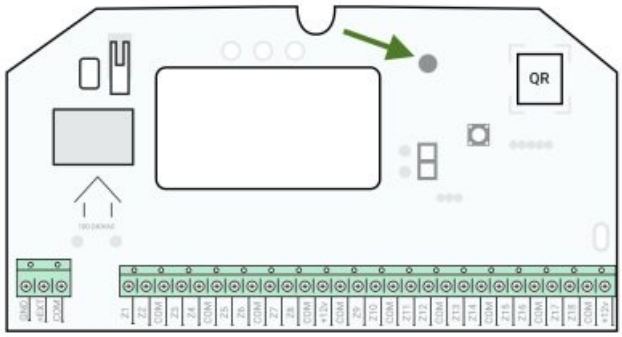
1. Power supply terminals for fire detectors
2. Power supply input 110/230 V
3. Tamper button. Signals if MultiTransmitter body lid is removed
4. Terminals for connecting a 12 V backup battery
5. Power button
6. LED indicator
7. QR code and ID/serial number of the device
8. Terminals for connecting wired detectors (zones)

MultiTransmitter terminals



Left-hand terminals:
GND — MultiTransmitter common ground +EXT —12 V power supply output for fire detectors COM — common input for connecting power supply circuits and signal contacts of wired detectors
Right-hand terminals:
Z1-218 — input for wired detector connection +12 V —12 V power supply output for wired detectors COM — common input for connecting power supply circuits and signal contacts of wired detectors

LED indication



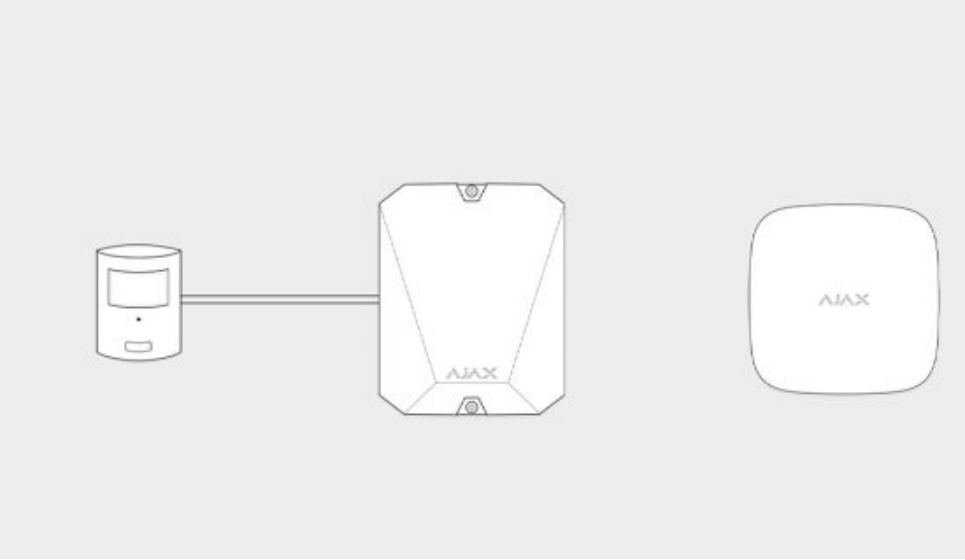
MultiTransmitter LED indicator may light up white, red, or green, depending on the status of the device. Please note that the LED indicator is not visible when the body lid is closed, but the status of the device can be found in the Ajax app.

LED Indication	Event	Note
Lights white	Connection with the hub is establis hed, the external power supply is c onnected	
Light red	There is no connection with Lights r ed the hub, external power supply	For example, the hub is turned off o r MultiTransminer is outside the cov erage area of
Blinks red once per second	MultiTransmitter is not assigned to t he hub	
Lights up for a second once No ext ernal power supply is every 10 seconds	No external power supply is conne cted to MultiTransmitter	Lights up white if there Is a connection with the hub. Lights up red if there is no hub connection
During an alarm, gradually lights up and goes out once every 10 seco nds	No external power supply and discharged external battery of ever y MultiTransmitter	Lights up white if there Is a connection with the hub. Lights up red if there is no hub connection

If Multaransmitter is not assigned to the hub or has lost connection with it, the integration module will not give an indication of the battery status or the presence of an external power supply.

Operating principle

MultiTransmitter is designed for connecting third-party wired detectors and devices to the Ajax security system. The integration module receives information about alarms and triggering of detector tampers via wires connected to the terminals.



indoor and outdoor motion detectors, as well as detectors tracking opening, vibration, breaking, fire, gas, leakage, etc. The type of device is indicated in the zone settings. The text of notifications about alarms and events of the connected device, as well as event codes transmitted to the Central Monitoring Station (CMS) of the security company depend on the selected device type.

A total of 6 types of devices are available:

Type	Icon
Tamper	
Intrusion alarm	
Fire alarm	
Medical alarm	
Gas concentration alarm	

MultiTransmitter has 18 wired zones. The number of connected devices depends on their power consumption. The total maximum current consumption of all connected devices or detectors is 1 A.

Supported connection types:

Designation	Type
NO	Normally open
NC	Normally closed. Without resistors
EOL (NC with resistors)	Normally closed. resistors
EOL (NO With resistors)	Normally open. resistors

The integration module has 3 power supply lines of 12 V: one dedicated line for fire detectors and two — for other devices.
After the fire alarm, fire detectors need a power reset to restore normal operation. Therefore, the fire detectors' power supply should only be connected to a dedicated line. Also, avoid connecting other detectors and devices to power terminals of fire detectors as this may lead to false alarms or incorrect operation of the devices.

Event transmission to the monitoring station
Ajax security system can connect to the CMS and transmit alarms to the module is located or the desired connected device. The Device Number (or DeviceIndex in Ajax PRO Desktop) corresponds to the loop (zone) number.

Connecting to the hub
For the Ajax security system, MultiTransmitter acts as a single device and each connected device or detector occupies a single slot in the limited number of the hub devices — 100 in Hub and Hub 2, 150 in Hub Plus, and 200 in Hub 2 Plus.

Wired detectors can be connected to MultiTransmitter both before and after connecting the module to the hub.

Before starting connection

1. Install the Ajax app. Create an account. Add a hub to the app and create at least one room.
2. Check that the hub is on and has access to the Internet (via Ethernet cable, Wi-Fi, and/or mobile network). You can do this in the Ajax app or by looking at the hub logo on the front panel. The logo should light up white or green if the hub is connected to the network.
3. Ensure that the hub is disarmed and does not start updates by checking its status in the app.

Only users with administrator rights can add MultiTransmitter to the hub.

In order to connect MultiTransmitter

1. Go to the Devices tab 0 in the Ajax app and click Add Device.
   the integration module is turning on.

For the detection and pairing to occur, the integration module should be located within the coverage area of the hub's wireless network (at the same guarded object).
If the connection has failed, disconnect MultiTransmitter for 5 seconds and try again.

If the integration module has already been assigned to another hub, turn off the integration module, and then follow the standard addition procedure.
The connected integration module will appear in the app, in the hub's list of devices. Updating device statuses in the list depend on the ping time defined in Jeweller settings. The default value is 36 seconds.

MultiTransmitter states
Icons
Icons display some of the MultiTransmitter states. You can view them in the Ajax app, in the Devices tab 0

Icon	Value
	Jeweler signal strength — displays the signal strength between the hub and MultiTransmitter
	A fire detector connected to MultiTransmitter has registered an alarm
	MultiTransmitter battery charge level
	MultiTransmitter has a malfunction. The list is available in the integration module states

States can be found in the Ajax app:

1. Go to the Devices tab C.
2. Select MultiTransmitter from the list.

Parameter	Value
Malfunction	Click (1) to open the list of MultiTransmitter malfunctions The field is displayed only if a malfunction is detected.
Jeweler Signal Strength	Signal strength between the hub and MultiTransmitter
Connection	Connection status between the hub and MultiTransmitter
Battery Charge	Battery level of the device. Displayed as a percentage How battery charge is displayed in Ajax apps
Lid	The status of tampers that respond to detachment or violation of the integrity of the body What is a tamper
External Power	The presence of an external power supply 110/230 V
ReX “range extender name”	The ReX range extender connection status. Displayed if MultiTransmitter is working via a ReX radio signal range extender
Fire detector power line	• OK — terminals in normal condition • Shorted — terminals are shorted
Temporary Deactivation	Shows the status of the device’s temporary deactivation function: • No — the device operates normally and transmits all events. • Lid only — the hub administrator has disabled notifications about triggering on the device body. • Entirely — the device is completely excluded from the system operation by the hub administrator. The device does not follow system commands and does not report alarms or other events. • By a number of alarms — the device is automatically disabled by the system when the number of alarms is exceeded (specified in the settings for Devices Auto Deactivation). The feature is configured in the Ajax PRO app. • By timer — the device is automatically disabled by the system when the recovery timer expires (specified in the settings for Devices Auto Deactivation). The feature is configured in the Ajax PRO app.
Firmware	MultiTransmitter firmware version. It is not possible to change the firmware
ID	ID/serial number of MultiTransmitter. Also located on the device box and on the integration module body

Note that after changing the settings, you should click the Back button to save them.

Setting	Value
First field	Integration module name that can be edited. The name of the device is displayed in the text of SMS and notifications in the event feed. The name can contain up to 12 Cyrillic characters or up to 24 Latin symbols
Room	Select the virtual room to which MultiTransmitter is assigned. The room name is displayed in the text of SMS and notifications in the event feed
Alert with a siren, if the power supply for detectors is shorted out	When enabled, sirens connected to the security system signal if a detectors power line is shorted out
Jeweler Signal Strength Test	Switches the integration module to the Jeweller signal strength test mode. The test allows you to check the signal strength between the hub and MultiTransmitter and determine the optimal installation location What is Jeweller Signal Strength Test
Attenuation Test	Switches MultiTransmitter to the signal attenuation test mode **What is a signal attenuation test**
Temporary Deactivation	Learn more about the temporary deactivation of devices **Note** that the system will ignore only the disabled device. Devices connected via MultiTransmitter will continue operating normally The system can also automatically deactivate devices when the set number of alarms is exceeded or when the recovery timer expires. Learn more about auto deactivation of devices
User Guide	Opens MultiTransmitter User Guide
Unpair device	Unpairs MultiTransmitter disconnects it from the hub and deletes its settings

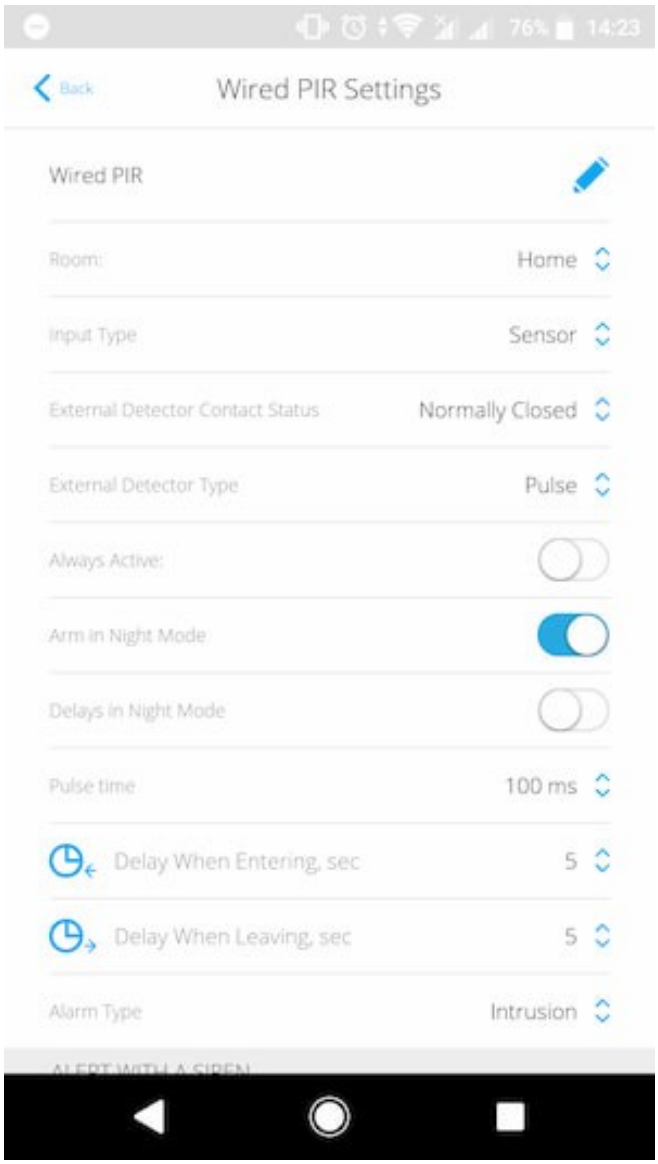
States of connected detectors and devices
You can find the states of connected wired detectors and devices in the Ajax app:

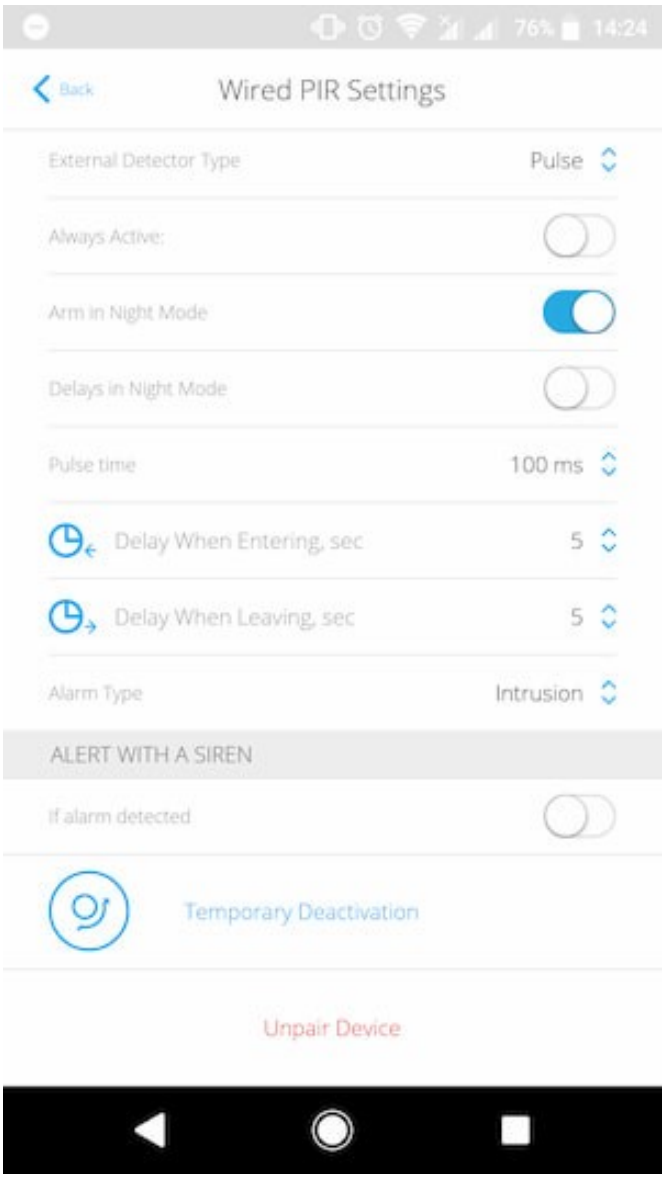
1. Go to the Devices tab 0′.
2. Select MultiTransmitter in the device list.
3. Click on Devices.
4. Select the device from the list.

Parameter	Value
Malfunction	Click to open the malfunctions list of the connected wir ed detector. The field is displayed only if a malfunction is detected
Delay when entering, sec	Delay time when entering in seconds. Delay when ent ering (alarm activation delay) is the time you have to di sarm the security system after entering the premises **What is Delay When Entering**
Delay when leaving, sec	Delay time when leaving in seconds. Delay when leavi ng (alarm activation delay) is the time you have to exit the premises after the security system is armed **What is Delay When Leaving**
Detector status	The status of the connected wired detector: • **OK** — the connected detector is normal • **Alarm** — the connected detector has detected an ala rm • **Shorted** — the terminals to which the detector is con nected are shorted. Status is only available in case of an EOL NC
	no connection – MultiTransmitter has no with the hub
Temporary Deactivation	Shows the status of the device’s temporary deactivatio n function: • **No** — the device operates normally and transmits all events. • **Lid only** — the hub administrator has disabled notifi cations about triggering on the device body. • **Entirely** — the device is completely excluded from th e system operation by the hub administrator. The devic e does not follow system commands and does not rep ort alarms or other events. • **By a number of alarms** — the device is automaticall y disabled by the system when the number of alarms i s exceeded (specified in the settings for Devices Auto Deactivation). The feature is configured in the Ajax PR O app. • **By timer** — the device is automatically disabled by th e system when the recovery timer expires (specified in the settings for Devices Auto Deactivation). The featur e is configured in the Ajax PRO app.
Device #	The number of MultiTransmitter zone to which the dete ctor is connected

Settings of connected wired detectors and devices

Note that after changing the settings, you should click the Back button to save them.


76% 14:23
Back
Wired PIR Settings
Wired PIR
Room:
Home
Input Type
Sensor
External Detector Contact Status
Normally Closed
External Detector Type
Pulse
Always Active:
Arm in Night Mode
Delays in Night Mode
Pulse time
100 ms
Delay When Entering, sec
5
Delay When Leaving, sec
5
Alarm Type
Intrusion



Device Type	Selecting the connected device type: • Tamper • Sensor
External Detector Contact Status	Selecting the normal contact state of the connected detector or device: • NC • NO • EOL (NC with R) • EOL (NO with R)
External detector type	Type of connected detector or device: • Pulse — e. g., a motion detector. After an alarm, a recovery event is not sent if the detector returns to the normal state • Bistable — e. g., an opening detector. After an alarm, a recovery event is also sent when the detector returns to the normal state Set the type that matches the connected detector. The pulsed detector in the bistable mode generates unnecessary recovery events. A bistable detector in pulsed mode, on the

Delay when leaving, sec	Selecting the delay time when leaving. Delay when leaving (alarm activation delay) i s the time you have to exit the premises after the security system is armed. You can set a value from 0 to 120 seconds **What is Delay When Leaving**
Arm in Night mode	If active, the device will switch to the armed mode when using night mode **What is Night Mode**
Delayin Night mode	Delay turned on when using night mode
Pulse time	Pulse time of a detector or device for detecting an alarm: • 20 ms • 100 ms • 1 s An alarm is raised if the pulse from the detector is longer than the specified value in t his setting. It can be used as a bounce filter
	The text of SMS and notifications in the event feed depends on the selected type of alarm
Alert with a siren if the al arm is detected	When enabled, sirens connected to the security system signal about the alarm of th e detector or device
Temporary Deactivation	Allows the user to disconnect the device without removing it from the system. Two options are available: • **Deactivate entirel**y – the device will not execute system commands or participate i n automation scenarios, and the system will ignore device alarms and other notificati ons • **Deactivate lid notifications** – the system will ignore only notifications about the tri ggering of the device tamper button Learn more about the temporary deactivation of devices Note that the system will ignore only the disabled device. Devices connected via Mul tiTransmitter will continue operating normally The system can also automatically dea ctivate devices when the set number of alarms is

1. Select the MultiTransmitter zone to which you would like to connect a detector or device.
2. Route the wires of the detector or device into the integration module body.
3. Connect a wired detector or device to the appropriate MultiTransmitter terminals. The wiring diagram can be found in the User Guide provided by the manufacturer of the wired detector or device.
4. Securely fasten the cable to the terminals.

If the detector or device requires a 12 V power supply for operation, it can be connected to the power terminals of the corresponding MultiTransmitter zone. Separate terminals are provided for fire detectors. Do not connect the external power supply to the detector power terminals, as this may damage the device.

How to add a wired detector or device

1. In the Ajax app, go to the Devices tab 0
2. Select MultiTransmitter in the device list.

Tests are available in the device settings menu (Ajax app. Devices. MultiTransmitter. Settings :

- Jeweler Signal Strength Test
- Attenuation Test

Selecting MultiTransmitter placement

The placement of the integration module determines its distance from the hub and the presence of obstacles between them that impede the passage of the radio signal: walls, inter-floor constructions, or large-sized objects located in the room.

Be sure to check the signal strength at the installation site. If the signal strength is low (a single bar), we cannot guarantee a stable operation of the security system! At the very llll least, relocate the device as repositioning even by 20 cm can significantly improve the signal reception.

If the poor or unstable signal strength is still reported after the relocation of the device, use the **ReX radio signal range extender** of the security system.

1. Secure the body to the surface with bundled screws using at least two fixing points. In order for the integration module tamper to respond to a dismantling attempt, be sure to fix the body at the point with the perforated section.
2. Install the MultiTransmitter card into the body on the racks.
3. If available, connect a backup battery. Don’t connect external power supply!
   We recommend using a 12 V battery with a capacity of 4 or 7 Mt For such batteries, special racks in the body are designed. You can also use similar batteries of a different capacity, of matching size, with the maximum full charge time of no more than 30 hours. The maximum battery size for installation in the body is 150 x 64 x 94 mm.
4. Connect wired detectors and devices to the integration module. Turn on the integration module.
5. Install the lid on the body and secure it with the bundled screws.

is suitable for equipment care. Do not use any substances containing alcohol, acetone, gasoline, and other active solvents to clean the device.

Malfunction notifications

MultiTransmitter can report malfunctions to the central monitoring station of the security company, as well as to users through push notifications and SMS.

Notification	Value	Action
Contact Is shorted out, [device nam e/ in /room name/	MulteTransmMer terminals for conn ecting the wired device are shorted. Notification can only be received If an E01. NC connection is used	Check the connection of the wired device or detector for short circuit After the normal state of the termin als is resumed, you will receive res pective notification
Lost contact. /device name/ In /roo m name/	The connected wired detector is tor n off. Notification can be obtained If an E OL NO connection Is used	Check the connection of the wired device or detector to the integration module
The battery is charging too long &splayed in integration module stat uses	Muliaransmittet ballery charges tot over 40 hoots	The battery is most likely clenched I nstall another backup battery

Fire alarms reset

In the case of alarms of the fire detectors connected to MultiTransmitter, the window prompting of the need to reset the alarms is displayed in the Ajax app. This will make the detectors return to their normal state and continue to respond to a fire.

⚠If the detectors are not reset after the fire alarm, they will not respond to the next fire, as they will remain in alarm mode.

There are two ways to reset fire detectors:
1. By clicking the button in the notification in the app.

Detector power supply	supply outputs
Protection against dismantling	Tamper
Radio signal frequency band	868.0-868.6 MHz or 868.7-869.2 MHz, depending on t he sales region
Compatibility	Operates only with all Ajax hubs, and range extenders
Maximum RF output power	Up to 7.29 mW (25 mW limit)
Radio signal range	Up to 2,000 m (any obstacles absent)
Operating temperature range	From-10°C to +40°C
Operating humidity	Up to 75%
Dimensions	196 x 238 x 100 mm
Weight	805 g

Complete Set
1. MultiTransmitter
Technical support: **support@ajax.systems**

Documents / Resources


MultiTransmitter User Manual

Updated December 19, 2022

MultiTransmitter is an integration module with 19 wired zones for connecting third-party detectors to the Ajax security system. To prevent against dismantling, MultiTransmitter is equipped with two tampers. It is powered from the mains 160–240 V AC, and can also run on a 12 V backup battery. It can supply 12 V power to connected detectors.

MultiTransmitter operates as part of the Ajax security system by connecting via the **Jeweller** secure radio communication protocol to the hub. The hub communication range is up to 2,000 meters (provided there are no obstacles). If jamming or interference is detected, the **"High level of interference at Jeweller frequency"** event is sent to the security central monitoring station of the security company and system users.

What jamming of a security system is

Not compatible with ocBridge Plus, uartBridge, and third-party security central units

AJAX 20354 MultiTransmitter Module [pdf] User Manual
20354, MultiTransmitter Module