



AC-RAD-LIFT-IP

User`s manual

ver. 1.3

**System for transmission of video and audio from IP
cameras in the elevators**

Thank you for choosing the AC-RAD-LIFT-IP. We trust that its unique features will come in very handy.

Please, read this instruction manual to ensure safe operation and maximise efficiency of the device.

Safety and maintenance tips

In order to safely use our device, you should read and observe the tips contained in this instruction manual.

The AC-RAD-LIFT-IP. module is maintenance-free. We recommend installing it on a stable structure and connecting its power cables in a manner which would prevent them from being accidentally damaged by the operator or any bystanders.

Safety tips

This device has been designed and manufactured with the utmost care for the safety of its installers and users. For safety reasons, observe all the guidelines in this manual and peripheral devices' manuals, such as the PC or IP camera. Before installing the device, carefully read the entire instruction manual.

Ensure safe working conditions. The user's own modifications of the device will prevent its legal use and render the warranty null and void. The device has passed through the mandatory compliance assessment and it meets basic requirements in the European New Approach Directives. The product is CE-marked.

The device is designed to work within the European Union and beyond. Always adhere to the rules and regulations applicable in each country. The device has the ability to work with the power and frequency that is not allowed in specific country.

Please be sure to follow the current norms and safety standards in lift shafts and elevators themselves. The user and the installer is obliged to always check the current standards and conditions in the plant. In the case of non-compliance with the current standards of safety requirements, please do not install the devices.

The materials contained in this document contain information that is the property of ACIE and is intended exclusively for use by the purchasers of the equipment described in this manual.

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This device meets requirements of the European directive on radio equipment, telecommunications terminals as well as on their mutual identification and compatibility (Directive 1999/5/CE of the European Parliament and the Council of Europe, March 1999, on radio equipment and telecommunication terminal equipment and the mutual recognition of their conformity).

The AC-RAD-LIFT-IP.module is compliant with provisions related to the safety in using electrical devices. Observe the following guidelines:

- the power outlet must be earthed in compliance with applicable provisions,
- before transferring the device or performing any other technical operations, disconnect the power supply,
- do not use any damaged or worn power supply cables, as they pose a threat to the user's safety,
- installation works must be performed by sufficiently qualified technicians, do not use the device in locations where flammable substances are kept,
- secure the device so that children or unauthorised persons should not gain access to it,
- make certain that the device has been reliably fixed,
- the device is off only after disconnecting its power supply cables and the cables between it and other devices,
- if the device is transferred to a room where the temperature is higher than where it has previously been kept, water vapour may condensate inside its casing, which will prevent its proper use (Wait until the condensed water evaporates).

Interference

- The transmission distance may vary, depending on the frequency, environment, radio waves, buildings, weather conditions, etc.
- When the transmitter is near such equipment as the TV set, R-LAN wireless network, another transmitter, or when it is placed between other radio devices, then the video stream may be interrupted or the devices might even lose the connection. If this occurs, increase the distance between the interrupted devices and the transmitter.
- The signal reception may vary, depending on the transmitter's working height and angle. If the signal reception is not stable, optimise the antenna settings.
- Meteorological radars operating within the frequency ranges of 5,250-5,350 MHz and 5,650-5,850 MHz have the highest priority. These radars can interrupt the device operation or even prevent it entirely.

The antennas used for the transmission from this transmitter must be installed according to the instruction manual and they must be placed at least 30 cm from all persons. The transmitter is not compatible with another antenna nor transmitter.

AC-RAD-LIFT-IP.

System for transmission of video and audio from IP cameras in the elevators.

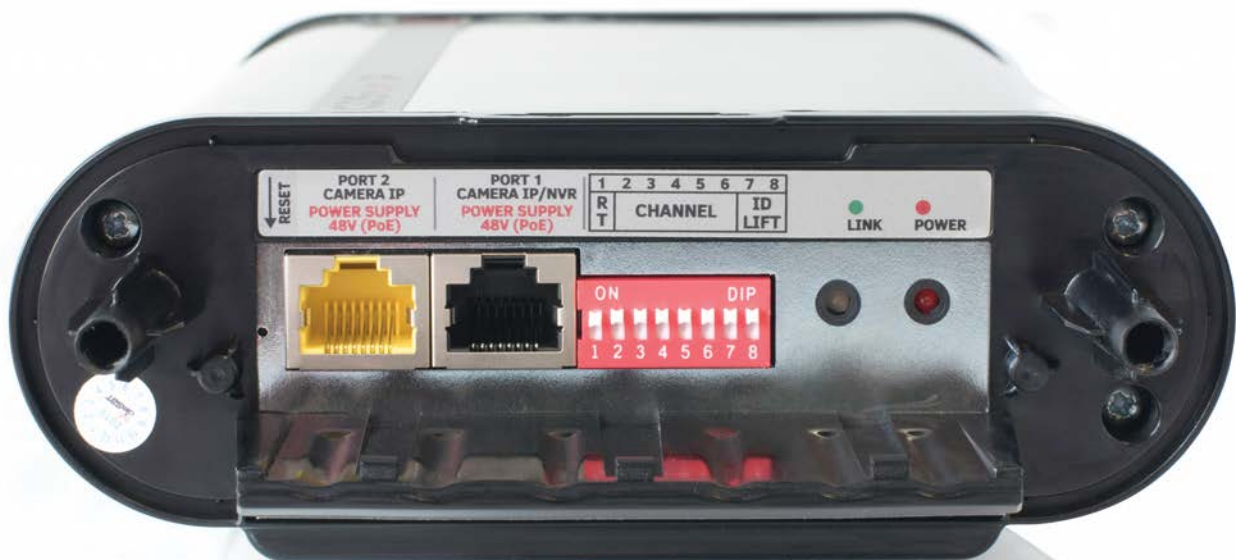
Key features of the module AC-RAD-LIFT-IP.:

- easy configuration on the switches, without the need to connect a computer
- AC-RAD-LIFT-IP. can work both as a receiver and transmitter
- It ensures continuous and stable transmission capacity
- works in transparent mode - it transmits all data transparently, regardless of IP cameras and recorders.
- It works on both the Point-to-Point and Point-to-Multipoint receiving the signal from 4 transmitters on two elevators.
- output power of 23dBm at 5GHz band operation
- built-in dual antenna MIMO 2 x 5 GHz 14 dBi (range 500m LoS)
- outer casing IP55
- operating temperature from -20 ° C to +55 ° C

Contents of the package

- AC-RAD-LIFT-IP. x 1 pc.
- PoE power supply 48V 0.5A with cable European 230V x 1pc.
- Mounting U-bolts x 1 pc.
- Users Manual and Declaration of conformity

DESCRIPTION OF CONNECTORS AND LED INDICATORS



DESCRIPTION OF CONNECTORS AND LED INDICATORS

RESET - reset button for the radio module to the default settings

PORT 2 - LAN port for connecting a second IP camera

PORT 1 - LAN port for connection to the DVR or connect the power adapter PoE48V. This port can also be used to connect a second IP camera through the LAN in the power supply.

SETTINGS – switches used to configure the device

LINK – LED indicator of the connection:

red - the signal is too strong (overdrive), or device is starting;

orange - a link with a high signal level (very good signal);

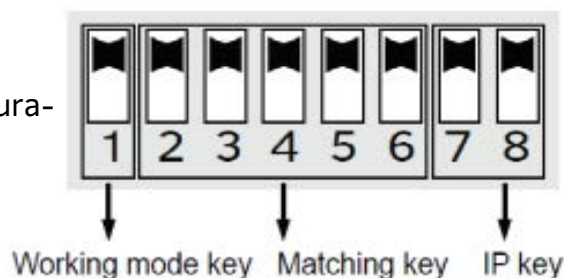
green - a valid link with the correct signal level;

off - the device is out of range or is incorrectly configured. More information about the level of radio signals can be obtained by logging on to the users' panel website.

POWER – **red** LED for power status



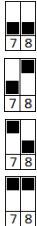
Preparation for operation

It is recommended that the first start-up and configuration of the system is made on the desk at small distances. This can save a lot of valuable time with the configuration of many different cameras on the object.

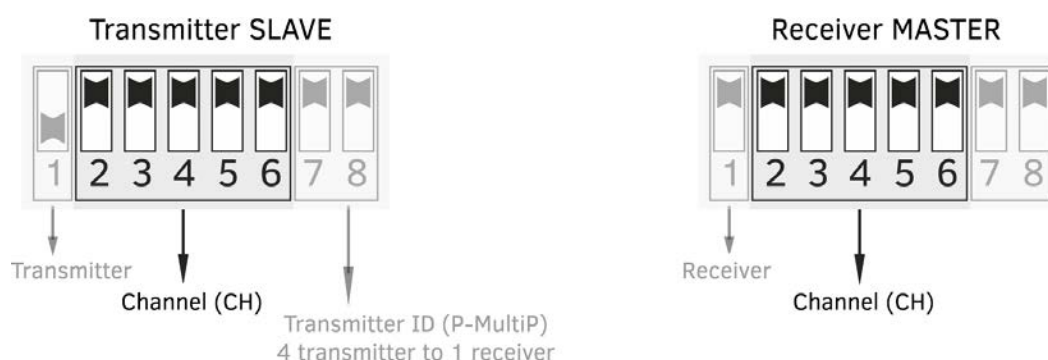


Function		SETTINGS	
Operating mode:	<div> <div>1</div> <div>1</div> </div>	Receiver Transmitter	
Operating channel and IP address of the device:	<div> <div>2 3 4 5 6</div> <div>2 3 4 5 6</div> <div>2 3 4 5 6</div> <div>2 3 4 5 6</div> </div>	CH 36 (CE FCC)	5.180 Ghz (192.168.112.x)
	<div> <div>2 3 4 5 6</div> <div>2 3 4 5 6</div> </div>	CH 40 (CE FCC)	5.200 Ghz (192.168.113.x)
	<div> <div>2 3 4 5 6</div> <div>2 3 4 5 6</div> </div>	CH 44 (CE FCC)	5.220 Ghz (192.168.114.x)
	<div> <div>2 3 4 5 6</div> </div>	CH 48 (CE FCC)	5.240 Ghz (192.168.115.x)
	<div> <div>2 3 4 5 6</div> <div>2 3 4 5 6</div> </div>	CH 149 (FCC)	5.745 Ghz (192.168.116.x)
	<div> <div>2 3 4 5 6</div> </div>	CH 153 (FCC)	5.765 Ghz (192.168.117.x)
	<div> <div>2 3 4 5 6</div> </div>	CH 157 (FCC)	5.785 Ghz (192.168.118.x)

In parentheses you can see the IP address of the device that depends on the settings. The receiver always has the address of the ID 192.168.x.1. These addresses are reserved for radio equipment.

Function		SETTINGS	
		CH 161 (FCC)	5.805 Ghz (192.168.119.x)
		CH 165 (FCC)	5.825 Ghz (192.168.120.x)
Transmitter ID number:		Transmitter no 1 (192.168.x.2) Transmitter no 2 (192.168.x.3) Transmitter no 3 (192.168.x.4) Transmitter no 4 (192.168.x.5)	

MASTER receiver and all SLAVE transmitters must be set to the same operating channel to establish connection. And then, each of the next set working nearby must be set to a different operating channel.



Multipoint Configuration

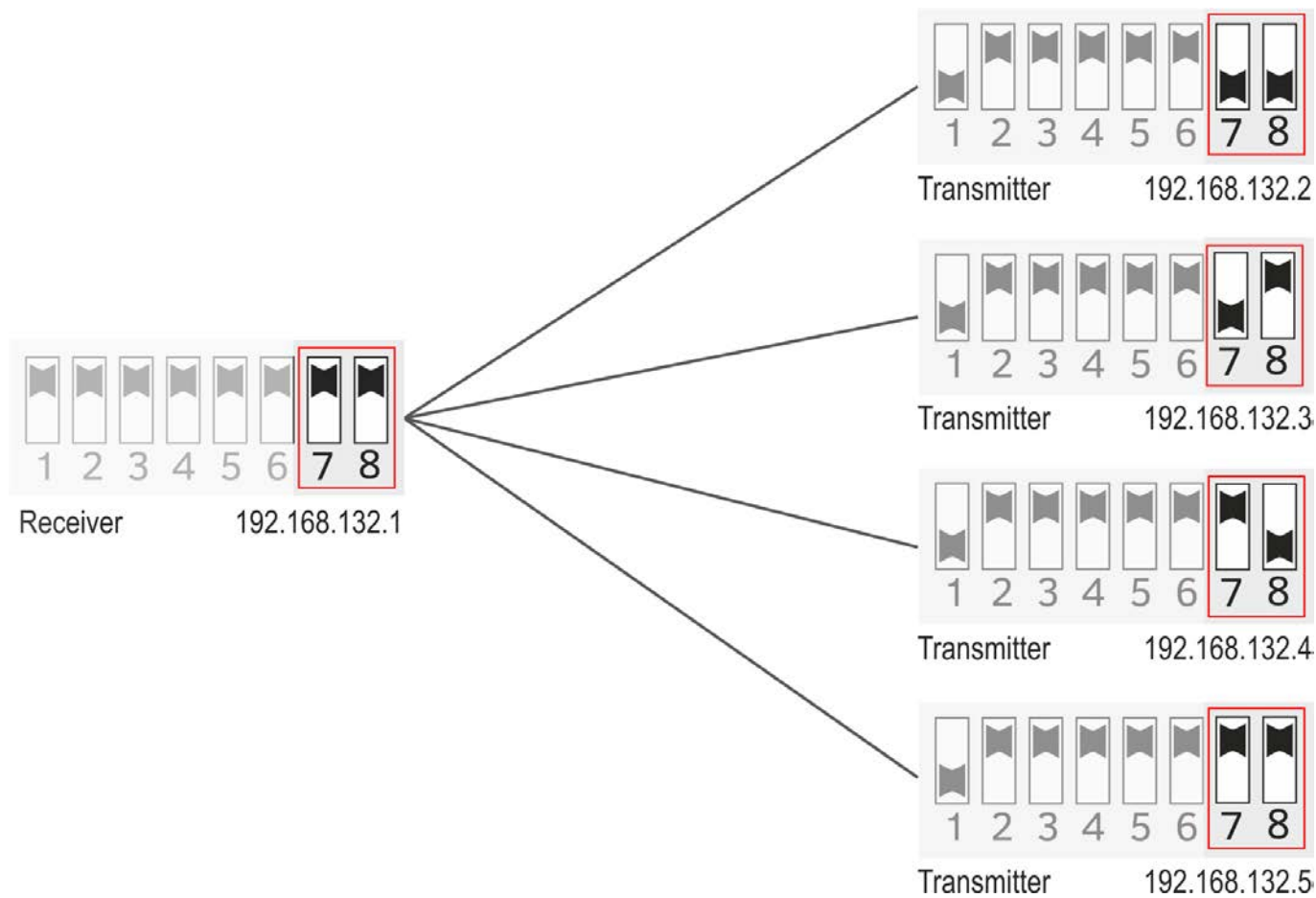
AC-RAD-LIFT-IP. can be connected in a point-to-multipoint configuration. You can connect the device from several elevators to one receiver. For such an application you should provide optical visibility between each transmitter and the receiver!

These settings are configured by switches 7 and 8 in each transmitter according to the following formula:

After 90 seconds since power on, unit will establish interconnection of sending data transparently between all ports of devices.

In the case of connection problems check:

- Directivity of antennas and if there are no obstacles between them
- Change the channel number to another one.
- Check the power supply capacity or replace another.



Assembly

Place mounting brackets designed for mounting on a steel beam or rail in the appropriate holes in the rear of the device and tighten securely. Attach the device to the construction with the antenna pointed directly at the point of receiving.

We use the U-Bolt handle which is included.

WARNING

The antenna of the transmitter must "see" optically with an antenna at receiving part of the set in the same polarity. Do not install the equipment rotated 90 degrees relative to each other as this will result in incompatibility of polarized antennas.

Do not install the devices at distances of less than 0.5 m from each other. It is recommended to use a minimum distance of 1 m.

Install receiver and antenna directed exactly to the transmitting point. Set the desired operating channel according to the table. Channel numbers and polarity of antennas should be the same in both cooperating transceivers. Connect the power cables together with power.

The device must be powered from the supplied AC adapter PoE48V.

For installation you can use our accessories:

- A) MTS-1D – Wall/roof mounting
- B) MT-2D - Mounting to the pipe

A) MTS-1D



B) MT-2D



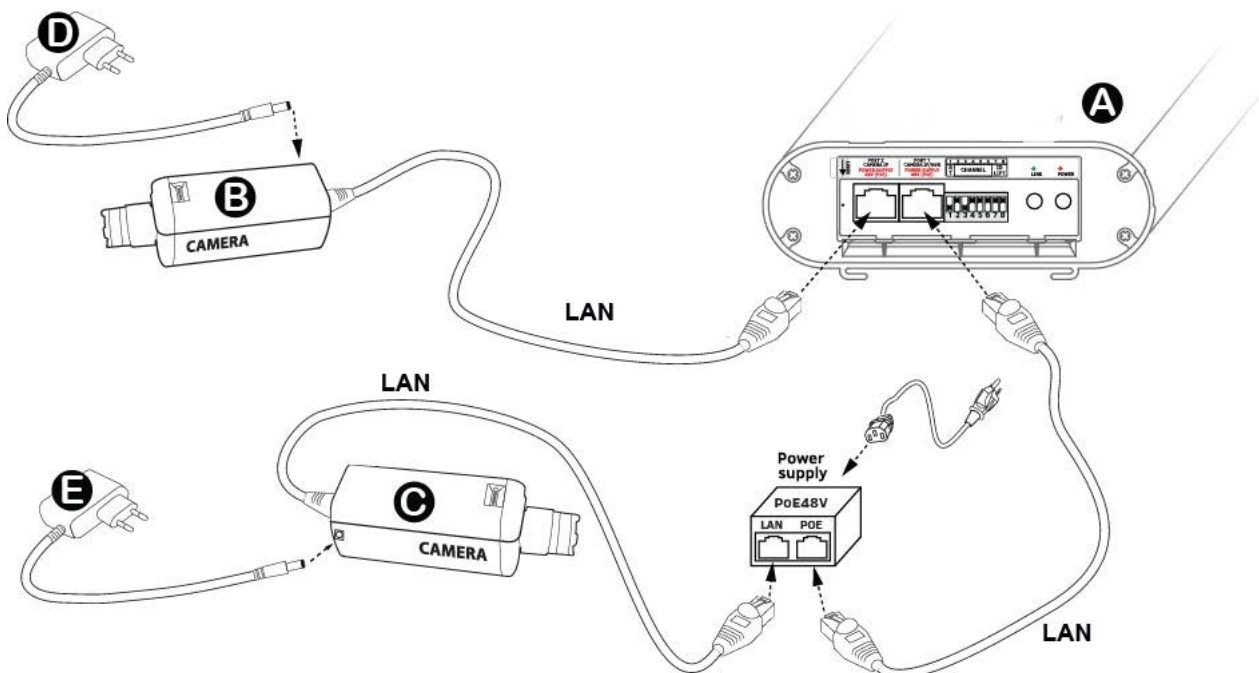
Connection and start-up

It is recommended that the first start-up and configuration of the system is made on the desk at small distances. This can save a lot of valuable time with the configuration of many different cameras.

Transmitter (IP camera side):

- Set dipswitch 1 to OFF mode (transmitter), set the operating channel according to the table, set the number of transmitter (if there is more than one transmitter).
- connect IP camera with a network cable with RJ45 PORT-2
- connect included power supply PoE48V to PORT-1
- connect the second camera by the network cable to the RJ45 LAN input in the power supply of the transmitter.

Connection and power IP camera directly from the transmitter



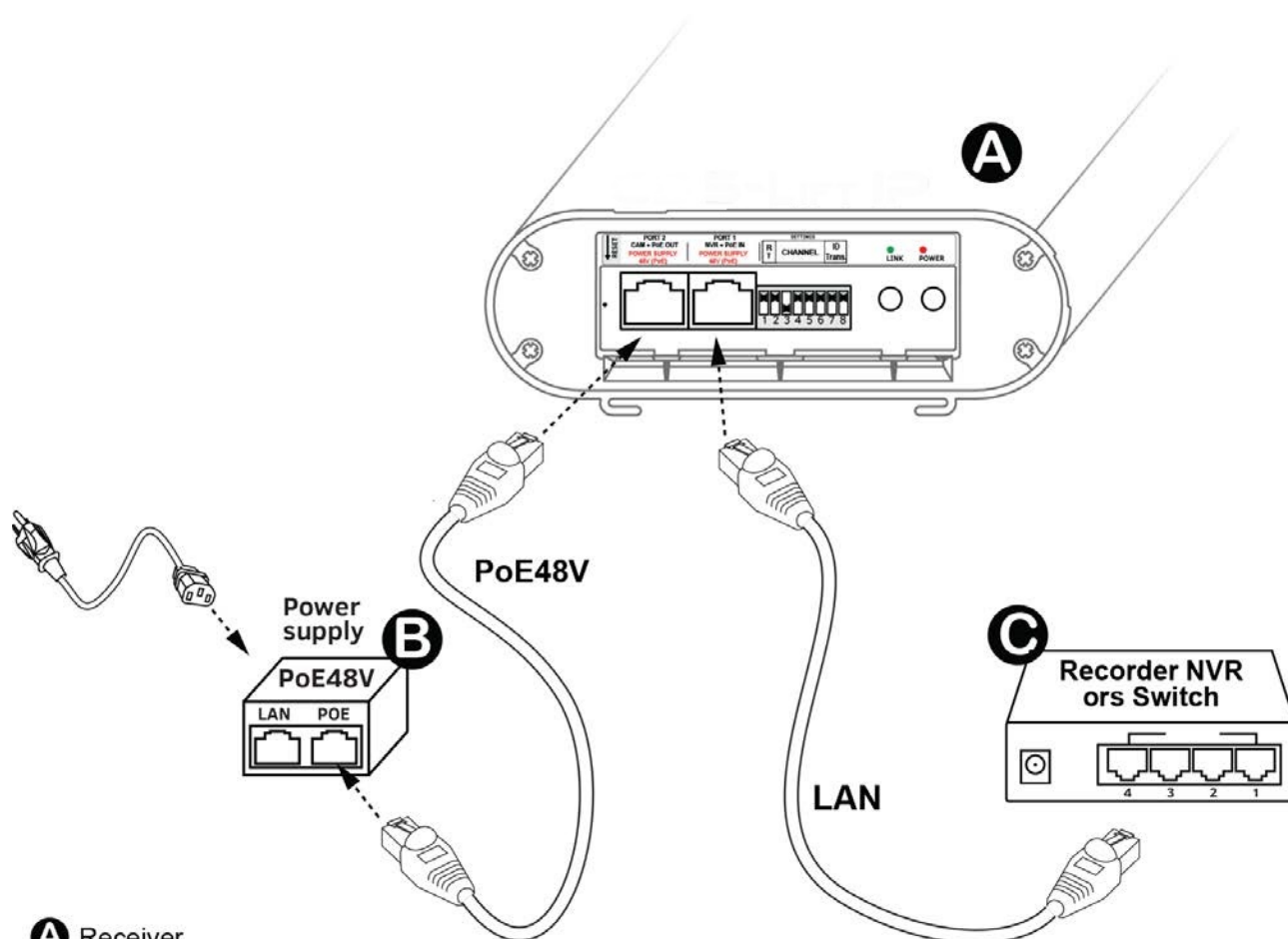
- A** The transmitter powered by the PoE (48V), which also supplies the camera (B)
- B** The camera is powered directly from the transmitter
- C** The second IP camera powered with its own power supply
- D** The power supply to the second camera

The receiver (NVR side)

The receiver can be powered from a PoE injector or NVR PoE switch or PoE network.

- Set dipswitch No. 1 to ON mode (receiver), set the operating channel by a table identical to the transmitter, set DIP7 and DIP8 ON (up)
- Connect NVR by the network cable to the PORT 1 or LAN port PoE in power supply.
- Connect power source for example included PoE48V to PORT 2. To this port you can also connect NVR with PoE or PoE network switch.

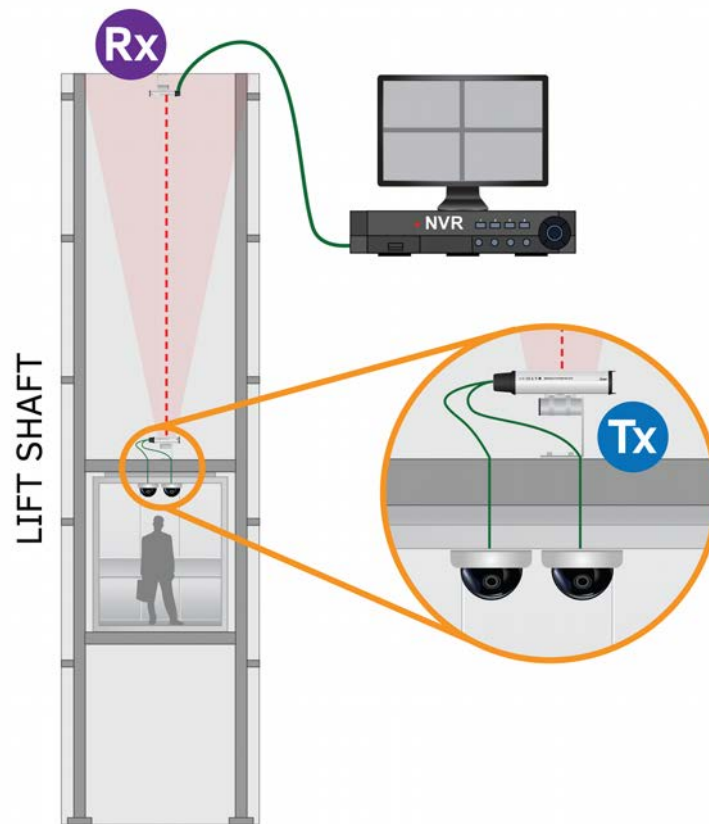
Receiver powered by power supply with PoE



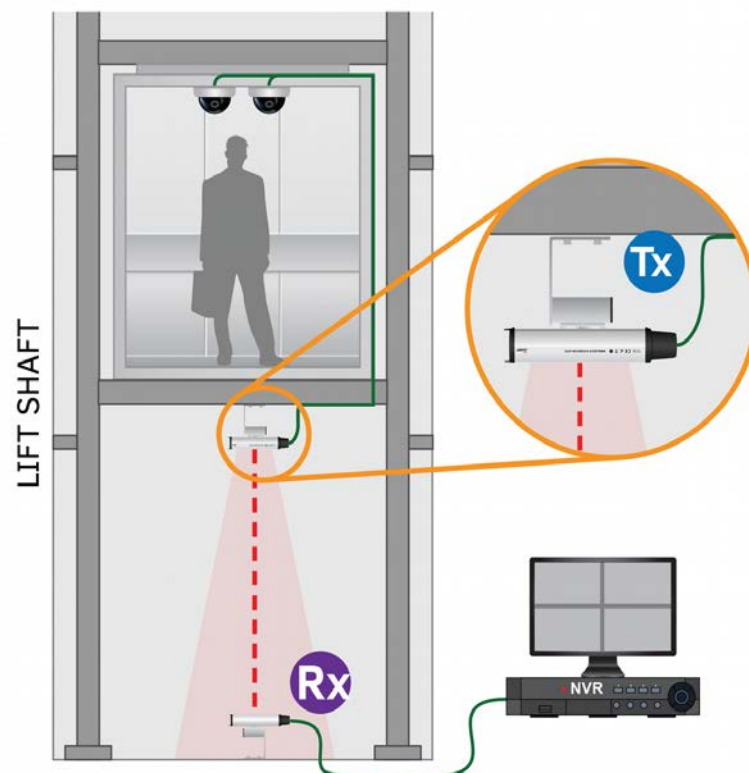
- A** Receiver
- B** Receiver power supply (48V PoE)
- C** NVR or IP switch without PoE

Application examples

Example 1: The transmitter mounted on the roof of the elevator.



Example 2: A transmitter mounted under the floor of the elevator.



Example 3: One receiver for two elevators.

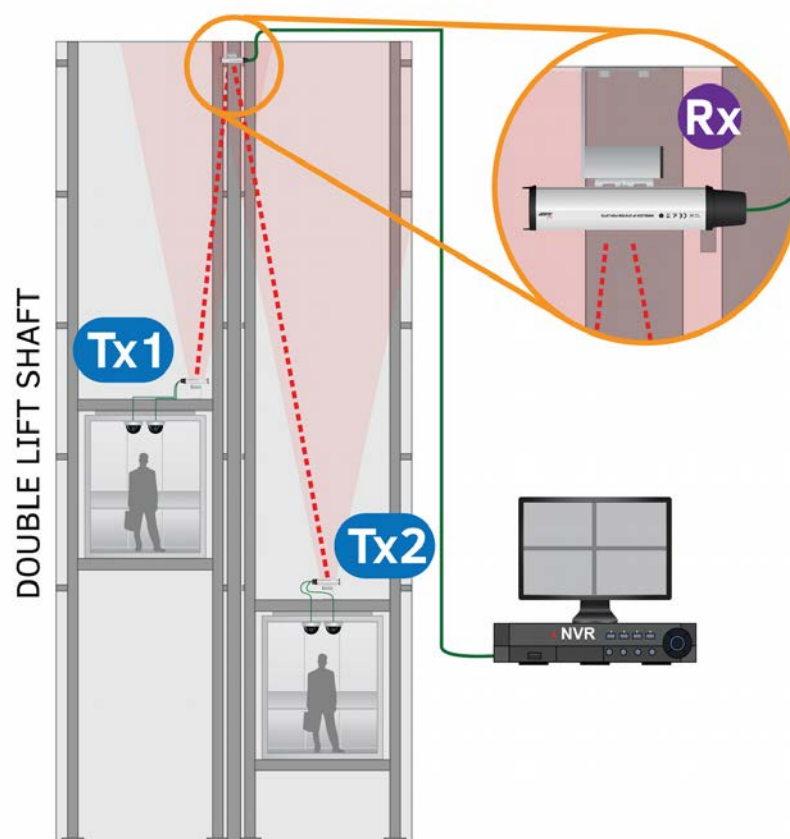


Table of available operating frequencies

CHANNEL	2-6 Dial	Frequency	IP Address	Przeznaczenie
36 CH		5.18G	192.168.112.X	CE FCC
40 CH		5.2G	192.168.113.X	CE FCC
44 CH		5.22G	192.168.114.X	CE FCC
48 CH		5.24G	192.168.115.X	CE FCC
149 CH		5.745G	192.168.116.X	FCC
153 CH		5.765G	192.168.117.X	FCC
157 CH		5.785G	192.168.118.X	FCC
161 CH		5.805G	192.168.119.X	FCC
165 CH		5.825G	192.168.120.X	FCC

Use of specific channels according to their purpose:

- CE - Europe
- FCC - US

Using other frequencies depends on the legal regulations of the country where you are. If you are not sure about regulations in your country, consult your supplier.

Table of frequencies outside the EU and the US and paid

CHANNEL	2-6 Dial	Frequency	IP Address	Przeznaczenie
		4.96G	192.168.101.X	INNE
		4.98G	192.168.102.X	INNE
		5.0G	192.168.103.X	INNE
		5.02G	192.168.104.X	INNE
8 CH		5.04G	192.168.105.X	INNE
12 CH		5.06G	192.168.106.X	INNE
16 CH		5.08G	192.168.107.X	INNE
20 CH		5.10G	192.168.108.X	INNE
24 CH		5.12G	192.168.109.X	INNE
28 CH		5.14G	192.168.110.X	INNE
32 CH		5.16G	192.168.111.X	INNE
169 CH		5.845G	192.168.121.X	INNE
173 CH		5.865G	192.168.122.X	INNE
177 CH		5.885G	192.168.123.X	INNE
181 CH		5.905G	192.168.124.X	INNE
185 CH		5.925G	192.168.125.X	INNE
189 CH		5.945G	192.168.126.X	INNE
193 CH		5.965G	192.168.127.X	INNE
197 CH		5.985G	192.168.128.X	INNE
201 CH		6.005G	192.168.129.X	INNE
205 CH		6.025G	192.168.130.X	INNE
213 CH		6.045G	192.168.131.X	INNE
217 CH		6.065G	192.168.132.X	INNE

WARNING

The device can operate at a frequency range and power that can be charged or completely prohibited in your area or your country.

