Installation Instructions Praetorian Guard IP Intercom

PROFESSIONAL INSTALL ONLY



Manual Version 1

The manufacturer cannot legally offer technical support to non-qualified gate or door installers. End users should employ the services of a professional install company to commission or support this product!

Tip: Site Survey BEFORE you begin. See page 3/4





Do not power from the gate controller. Only use the provided UL power supply, otherwise damage may occur and warranty may be void.



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Site Survey (LAN)



Upload Speed

I have at least 1.5 Mb <u>UPLOAD</u> speed. If not STOP! This system may operate intermittently remotely or have delayed PUSH notifications.



The Praetorian Guard is designed to transmit the video and audio stream using on average 400 KBit/sec (peaking to 1Mbps). This loosely translates to requiring a minimum of **1.5mbps UPLOAD speed** on the network that the intercom is connected to. The higher the upload speed the better quality of image up to an approx. max of 4mbps upload speed.

If you do not have sufficient upload speed then please look at upgrading your internet package, if possible.

Site Survey (Local Wi-Fi)



Total distance of Wi-Fi range will depend heavily on the property network setup. Max distance is 60m based on using a basic home router passing through 1 exterior wall. For the most reliable connection utilize the LAN or 4G Router options.

Wi-Fi Signal Explained

Poor = System may not show ONLINE. Signal may drop out regularly or cause delays on the video loading or stop notifications receiving from being sent.

Fair = System will operate as expected in most instances. Signal may drop out from time to time or cause delays on the video loading or stop notifications receiving from being sent.

Good / Excellent = System will operate as expected in all instances. Signal should never drop or cause delays on the video loading.

Product Overview



Now let's have a look inside...



Surge Module Overview



Main WI-FI Module in Detail



Keypad Module in Detail



PROX Module in Detail



Technical Specifications

GENERAL	
Front Panel	Portrait Orientation AB/ABK = 3mm Acrylic on Architectural Design Marine Grade Stainless Steel BS316 Front Plate
	AS/ASK = 3mm Marine Grade Stainless Steel BS316 on Architectural Design Marine Grade Stainless Steel BS316 Front Plate
	FS/FSK = Flush Design Marine Grade Stainless Steel BS316 Front Plate
	IMP/IMPK = 3mm Acrylic on Imperial Design Marine Grade Stainless Steel BS316 Front Plate
	Modular = Powder Coated Marine Grade Stainless Steel BS316 Front Plates with 3mm Acrylic on Design Marine Grade Stainless Steel BS316 Modular Plates
	Landscape Orientation PED = Pedestal Surface Mount
Hood Cover (MOD, IMP(K), PED versions)	Powder coated Aluminium
Mounting Housing (Backbox)	Marine Grade Stainless Steel BS316
Mounting Type	Surface-Mounted with backlighting,
	Flush-mounted version sold separately
Call Button	Stainless-steel button with illuminated LED Ring
Weatherproof	IP55
Approvals	CE, FCC
Dimensions	See Overview of Call Points
Operating Temp.	-25 to +55°C / -13 to 131°F
Contents of Box	1x Intercom (incl Front panel & backbox) 1x 24V 2A PSU (mains adaptor) to bare cables. (110 - 240V AC to 24V DC)
	1x AES 2-Headed Screwdriver
	1x Installation manual
	1x 2.40m2 Amerina W/2m Cable
	1x Test Checklist
	1x Ethernet Adapter
	3x Prox Tags (only with PROX versions)
Power Supply	24V DC

Power Consumption	IP PCB w/Keypad & Prox Standby = 80mA Operating = 300mA
Solar Power	45Watt Solar Panel (minimum) 2x 12V 15AH Batteries connected in series to provide 24V output
Connectors	LAN (RJ45) 2 x Bistable latching relay, max. 1-28V DC/AC, 1A, e.g. for magnetic door lock External input for push to exit button 24V DC input (+, -)
System Requirements	Mobile device: Newest iOS on iPhone/iPad, newest Android on Smartphone/Tablet Internet: High-Speed Landline Broadband Internet connection, DSL, cable or fibre optic, no socks or proxy server. Min. suggested upload speed of 1.5mbps, Network: Ethernet Network, with DHCP / WIFI 2.4GHz/5.8GHz (with applicable antenna)
Recommended Installation Height	Camera lens should be at a min. height of 145 cm (57 in). Before the installation please determine your optimal installation height.
Warranty	See www.aesglobalonline.com/warranty
KEYPAD MODULE	
Power Supply	24V DC
Steel Keypad Module	12 Square Metal Keys Blue illumination Keypad Codes configurable via App, Slave connection to allow up to an additional 8 slave devices
Silicon Keypad Module	12 Round Silicon Keys Blue illumination Keypad Codes configurable via App, Slave connection to allow up to an additional 8 slave devices
VIDEO	
Camera	HD 720p, dynamic (VGA – HD)
Lens	120° (D), 109° (H), 65° (V) IR-capable
Display Resolution	Switchable in the app by the Admin user. HD resolution: 1280*720 SD resolution: 640*480
Video Codec	H264

Night-Vision	Yes, light sensor, automatic IR-cut filter, 5 Infrared LEDs
Storage	On-Board Micro SD Card (16GB included) Max read capacity 32GB
	Estimated capacity based on 16GB:
	5,592 Video Clips (3MB) {AVI.}
	33,500 images (0.5MB) {JPG}
	Supports Hot Swapping.
	Auto overwrites oldest data at 70% capacity
	FAT32 Formatting
MOTION SENSOR	
Туре	Active
Detection Type	Digital (Pixel-based)
	changes of pixilation. This is processed by the CPU identifying any major/minor changes in pixels that is defined by a predetermined
	algorithm.
Range	>5m, depends on environment, distance is fixed
Configuration	Via App, e.g.
	• Sensitivity (1-5)
	Enable/disable push notification Enable/disable detection & recordings
Audio Components	Speaker and microphone, noise reduction and
	echo cancellation (ANR, AEC)
Audio Streaming	Two-way, full duplex & half-duplex
	(switchable in-app)
Audio Codec	PCM/ARAW
NETWORK	
WiFi	IEEE 802.11a/b/g/n/ac
WIFI Security	
Frequency Range	2.4GHZ-2.4385GHZ; 5.15GHZ-5.845GHZ
Supported Protocols	HTTP HTTPS SSI /TIS Bonjour DNS RTSP RTP TCP LIDP RTCP
	ICMP, DHCP, ARP
THIRD-PARTY INTEGRATIONS	
Partners	N/A - Coming Soon
ΑΡΙ	N/A - Coming Soon

Configure Before Install

Step 1



Do not install the intercom. Power it up beside the router so that you can perform the configuration with the homeowners' phone beside the intercom and router.

Note: If you skip this step and proceed directly to installation, technical support may request you go back and perform this step before diagnosing further.

Step 2 - Download and install the app on the end-user's phone.

Search for **Praetorian Guard** and find the icon, or scan the QR code if the phone has a QR scan app.

Tip: Be sure to accept ALL permissions during install, otherwise you will experience problems later!



Please ensure you check the app for updates at least once a month.

Step 3 - Open the intercom and connect antenna.



"Portrait" oriented models will have security screws at the top. Loosen only these with the security screwdriver provided.

Pedestal style "Landscape" orientated units will have a locking key.





Connect to network using WiFi

Step 1



Press and HOLD the code button for more than 3 seconds. A tone will be heard.

The intercom will now begin to transmit its own Wi-Fi network using the intercom ID reference. (E.g., AES-XXXXX-XXXX)

Tip: This will clear any currently stored WiFi connections from the system. You will need to reconnect to the WiFi network to allow the system to function again after pressing this button.

Step 2a - Find The WiFi Hotspot ID



With the user's phone, search for available Wi-Fi networks and connect to the 'Intercom ID' network.



TIP: Your phone needs to be within range of the intercom to detect this network.

Step 2b - Enter password to connect via WiFi



Enter the default pass code **123456789** and the users' phone should now be connected directly to the intercom.

Android: Press **CONNECT** Apple: Press **DONE**

Note: Your device may state there is no internet connection. This is normal. Accept any prompts to stay connected for the next steps.

Step 3a, 3b, 3c - Find Intercom ID via the network connection



Settings > Add > Search

After pressing SEARCH, the APP will now search for the intercom and should detect it.

Step 3d, 3e



Step 4



Should be showing ONLINE status.

Press the Video icon to view live video.

Note: at close proximity, you will experience acoustic feedback. This is normal.

If you can view live video, and hear acoustics, then this proves that the intercom hardware is working as it should.

Note: The intercom and phone are directly connected in a pointto-point link. It will still need connected to the network to be fully operational remotely.

Step 5a, b, c

Although we know the intercom is fully operational, we now need to connect it to the local Wi-Fi network.



The intercom is now searching the area for Wi-Fi networks and will display all compatible networks on the App screen.

Step 5d, e



Enter the WIFI PASSCODE for the network which you are connecting to.



WARNING: Take care not to enter a typing mistake. The intercom will accept any Wi-Fi password and will not know if it is correct or not! Note that the intercom will show as 'OFFLINE' if an incorrect Wi-Fi Password has been entered as it will not be able to connect to the network at all.



Wi-Fi Signal strength must be at least 'Fair', or you will have problems!

Step 6



The intercom will now re-boot and attempt to connect to the Wi-Fi network with the password you have entered.

Wait 60 seconds then re-launch the APP.





1. Intercom is showing online status, but the video feed shows "fetching".

A. This can be caused by poor power cable extended to the intercom, weak Wi-Fi, or too many devices connected to the Wi-Fi network and the router is incapable of managing the workload.

2. Intercom is not showing online status.

A. This can be caused by incorrect Wi-Fi password created, or Wi-Fi dropping out due to weak signal.

3. I can see video but there is no audio on the phone or there is no audio at the intercom.

A: Possibly permissions for the app were not accepted during app install. Check microphone permissions for the app in the phone settings.

4. The status is showing online, then connecting, then online again.

A: This is normal when a phone roams between two Wi-Fi connections, or between Wi-Fi and data.

Connect to network using LAN Cable

This intercom can also be connected to a LAN cable directly from the router or from a repeater or point-to-point Wi-Fi bridge device.

Note: Ethernet LAN signals can travel 100m/300ft on CAT5/6 cable. Longer distances will require a powered switch or repeater every 100m/300ft.

Step 1



Step 2a, 2b, 2c - Find Intercom ID via the network connection.



Settings > Add > Search

After pressing SEARCH, the APP will now search for the intercom and should detect it.

Step 2d, 2e - Select the Intercom ID & input the login credentials.



Step 3 - The intercom is now added to your device and should show Online.



If you can see live video and hear audio, the intercom has successfully connected to the network. If for some reason this does not work, check the LED indicators on the RJ45 socket on the PCB to ensure it is connected correctly to the network.

Diagnostic Tips 🧷

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Time Sync & Testing

Step 1 - Ensure the intercom is now added to your device and should show Online.



Step 2 - Clock Sync



Step 3 - Confirm intercom timestamp is correct.



Step 4 - Close the app

PUSH notifications may not show while inside the app so to test that the PUSH notifications are working correctly you need to close the app.



Step 5 - Press the call button.



The intercom will send a PUSH notification message via Google[™] PUSH notification service through the internet to the phone.

The notification will need to be accepted and then the APP will launch to reveal the visitor and give the user an opportunity to either accept or reject the call.

The process to answer a call will depend on what device is being used. Please see next pages for the different process between Android and Apple.

Answering on Android



Swipe down to reveal the android notifications and press the Praetorian notification.



This will launch the app and reveal the answer screen. Press the icon shown to answer the call if you wish to speak to the visitor.



Press the appropriate lock icon (depending on which relay your installer has connected to the gate or door).

Answering on iOS (Apple)



Note: Various versions of iOS and Android OS will have different notification acceptance techniques. Please refer to online support for your device if needed.



Installation (Wi-Fi)



Installation (LAN Cable)



Power

This intercom comes with a 24v dc power supply. The intercom requires up to 2 amps peak demand at times, therefore power cable is of extreme importance.

It is preferred the 24v dc PSU is installed within close proximity of the intercom. However, on occasion this may be difficult to achieve.

Please adhere to the cable thickness guide below or the device may be damaged and rendered out of warranty by the manufacturer.



Up to 2 meters (6 feet) use minimum 0.5mm / 18 gauge cable. Up to 4 meters (12 feet) use minimum 1mm / 16 gauge cable. Up to 8 meters (25 feet) use minimum 1.5mm / 14 gauge cable. Never use fine gauge cable such as alarm cable or CAT5 to power this device. Doing so will void the manufacturer's warranty!

Solar Power





Exit Button (PTE)

When the exit button is pressed it will trigger relay 1 for the pre-programmed time in the app. (Default is 1 second)



Adding Additional APP Users

Additional users MUST be added with individual usernames. Do NOT use the same username.

Step 1

On the <u>Admin user phone</u>, create a new username and password for any additional phones which you wish to add, as follows.



Step 2

On a <u>new phone</u> or tablet, perform the following steps to log on to the intercom with the details which have been created by the ADMIN phone above...



Note: Maximum 8 separate users and devices. Each device connected must be logged in with their own user account for correct operation. Only ADMIN can change critical system settings of the intercom.



Main Features

18:2	8 🖬 🖬	0		<u>ې</u>	all 33% 🔳
ţ					
2021		1:23:48	Co -		
2021	-02-01 18		C	Gardener	
2021	-02-01 18	1:23:01	G#	Daughter	
	-02-01 08	1:15:00	Î		
	-01-29 17		B		
	-01-29 17	':49:43	1	mum	
	-01-29 17		#\$	mum	
2021	-01-29 12	2:05:27	C	mum	
2021	-01-29 08	:15:00	*		
	-01-28 15	5:30:03	B		
	-01-28 15		B		
2021	-01-28 12	:23:19	3000	mum	
			0	<	

Activity Log closer look!

The log shows the most recent events which have occurred on the intercom. Some examples are shown. Some of the events capture images, or video from calls and can be played back by pressing the icons to the right.



Note: SD card must be inserted into the slot on the PCB for this feature to operate correctly.

The log will show the last 100 events. Older events can still be retrieved via a microSD reader.

Keypad Codes



Other Features



Advanced Features



Sound, Volumes and Speech

This intercom is capable of full duplex speech, which means two people can have a conversation and appear to speak at the same time. Since various manufacturers of android phones, iPhones and tablets all differ in acoustic performance, and different users may require varying levels of volume on their own handset, it may be possible to setup some devices in full duplex mode, but others may need to be set in half duplex mode (phone user will press to talk). This may also be required if a phone is in a particularly noisy environment, or the intercom is located near a busy main road with high levels of traffic noise.

Relay 2 Suggest 80% MAX volume

Intercom Volume

Intercom & Device Sound Options



Note: If the phone volume is too high an echo may be heard by the visitor at the intercom.

Using Keypad Codes



Enter pre-programmed 4-6 digit code., followed by the * kev to confirm

Tip: Press * to confirm keypad code

Troubleshooting

It is worth remembering that when you install this intercom, you are literally only supplying 25% of the overall system. The other 75% already exists with the customer. Namely the router, the Wi-Fi network, and the phones or devices.

Anything can go wrong with any part of that entire system. Therefore, it is a useful exercise to attempt to prove to the customer that the intercom hardware is working and operational before attempting to diagnose the root cause, especially when connected wirelessly to a network.

If the intercom is connected via Wi-Fi to the network, it is very useful to press and hold the code button on the board, then connect the phone DIRECTLY to the BELL Wi-Fi network (must be within Wi-Fi range of intercom). Open the app and show the customer that when the phone is connected directly to the intercom, there is video and two-way speech. The job is then to find out what part of the installation or overall system is causing the problem since the intercom hardware has been proven as operational.

We can say without doubt that when we do get hardware failures, the above process will not work, and you will not get video and voice to the phone in a direct connection like this.

Below are the most common causes of problems with installs, starting with the most common first.

Symptoms caused	Problem/error	Solution
App showing offline status, video image shows "fetching, long lag on calls, intermittently showing online/offline, delayed push notifications.	Wi-Fi too weak at gate	Increase the height of the antenna if possible, install a Wi-Fi booster either inside the house near the front of the property, or a loft or eaves mounted external Wi-Fi booster, or install a CAT5 cable from the intercom to the router.
Delayed push notifications, video lag, voice problems, freezing, relays not opening the gate.	Wrong power cable (too thin) installed from 24v adaptor to the intercom, or power adaptor too far from intercom.	Change the power cable to specifications shown within this manual.
Lagging video or audio, delayed notifications, status showing intermittently online/offline, no or randomly operation of push notifications.	Too many devices on home network	Turn off as many other devices as possible, reboot the router and then try again. If the unit works, it proves to the customer that their router needs to be upgraded to handle the demand.
Intercom works well sometimes and not well other times. The Wi-Fi signal strength on the app Wi-Fi screen can sometimes be strong and other times is weak.	Several Wi-Fi networks using the same SSID	The intercom is jumping between networks depending on traffic and other devices connected to the same node. It is advisable to change the SSID name of the Wi-Fi network closest to the intercom to something individual.
Offline status. Will not connect to the network	Incorrect Wi-Fi password entered during setup	Try process again. Check the same Wi-Fi password works on your phone (forget the network and re-connect using the same password).
Can randomly display status "id already in use"	Additional user added incorrectly.	When an additional user was being added, the process was done incorrectly. Additional users MUST be added by the admin device first, with

		separate usernames created for each. The new usernames and passwords must be used by the new devices as shown in this manual to logon to the intercom.
App shows online when phone is in the same network but offline when phone on 3G/4G or on a remote Wi-Fi network, App works fine remotely to view gates but push notifications are not working at all.	Commercial firewall	This will be a job for the IT provider for the business. A port will need opened to allow P2P and PUSH notification traffic to pass through the firewall. Recommended unassigned ports which your network administrator can open are 6806, 6809 and 9123, 9124.
App shows online status locally and when phone is remote, but push notifications may be delayed, or video lag, or showing "fetching" on video screen.	Insufficient upload speed	This will need discussed with the ISP / broadband provider.
Intercom is online and working even through the application, but I am receiving no notifications even for calls! I have checked my Wi-Fi/Ethernet and the intercom meets minimum requirements	Incorrect time.	Cycle to the settings menu and navigate to the clock settings and press "sync phone time" to sync the current time from the cellphone. This should only ever need done once as the time is pulled from the server.
I think my intercom is not functioning correctly.	Potential conflict of interest/firmware/software bug.	This is not something that happens frequently and can only happen if a new firmware was pushed to the unit. Seldom instances can however occur resulting in a soft reboot needing done. Cycle to the settings menu and navigate to the power icon, pressing this will initiate a soft reboot. This soft reboot will remove any open communications or potential non- functioning features to be re-enabled.

App Updates

We will continually monitor the apps performance and will release updates to enhance the users experience and/or fix any issues that arise overtime. These updates will be

available via the iOS app store or the Android Play store.

Firmware Updates

Firmware updates will be released to fix any bugs or to add additional features where possible throughout the products lifetime.

The most recent firmware version your system is using can be found by using the app

The most recent firmware version will be available via the manufacturer website along with details of any changes made. The updates will be sent to all devices when it is released and if your system is ONLINE at the time it will update with no interaction from the user.

If you find your intercom is on an older firmware and may have missed the automatic rollout you can contact the manufacturer technical support via phone or live chat who can perform the update manually via a remote desktop application.

Regulatory Compliance

FCC Id: 2ALPX-WIFI-IBK Grantee: Advanced Electronic Solutions Global Ltd This device complies with Part 15 of 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. Output power listed is conducted. This device must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance. This device has 20MHz and 40 MHz bandwidth modes.

EU-RED Declaration of Conformity

Manufacturer: Advanced Electronic Solutions Global Ltd

Address: Unit 4C, Kilcronagh Business Park, Cookstown, Co Tyrone, BT809HJ, United Kingdom

We/I declare, that the following equipment (Video intercom), part numbers: Wifi-iBK, wifi-B, wifi-ABK, wifi-AB, wifi-BD, wifi-BEK, wifi-BEik, wifi-Bei, wifi-BFT-KPAD

Complies with the following essential requirements: EN 301 489-1 V2.2.0 (2017-03) (Electro-Magnetic compliance) EN 301-489-17 V3.2.0 (2017-03) (Electro-Magnetic compliance) EN 62479:2010 (Maximum output power) EN60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013 (Electrical Safety)

This product is not a complete product until fully installed. It is therefore considered a component part of an overall system. The installer is responsible to check that the end installation complies with local regulatory requirements. This equipment forms part of a "fixed installation"

The manufacturer cannot legally offer technical support to non-qualified gate or door installers. End users should employ the services of a professional install company to commission or support this product!

