



## USER MANUAL

Advance 3 Pronged Power-line Wireless Intercom

FM246-Generation II Four Channels

FM413-Generation II Three Channels

Rev. 1.01 - 2013



FM246 -Generation II



FM413 -Generation II



This photo shows FM246-Generation II in Blackcolor.

<http://www.intercomcentral.com>  
California, U.S.A.

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## NOTES

User's Manual in Spanish is available on-line at  
[http://intercomcentral.com/docs/manual de usuario.pdf](http://intercomcentral.com/docs/manual%20de%20usuario.pdf)

Manual del usuario en español está disponible en línea en  
[http://intercomcentral.com/docs/manual de usuario.pdf](http://intercomcentral.com/docs/manual%20de%20usuario.pdf)

## Knowledge Base

- \* The term "wireless" is a branding employed by those BIG retailers from over 20 years ago. The official product name is Power-line Intercom System.
- \* If you cannot insert the 3 pronged plug to your outlet that means the wiring at your house is not meeting the System Requirement. Do not attempt to alter the power cord or the plug. Use the 3 prong to 2 prong adapter and set up the system like a Traditional 2 pronged system (see Solution 1: Electrical Wirings on page 9)
- \* There are no fixed rules on how to utilize the channels. It can be used as all paging, monitoring or unit to unit per designated channel communicating. Combinations can be 2 sets of 3 channel twin sets & makes it six units, or one twin units 4 channel sets. Some users would believe the number of channels = to the number of units. This is not exactly true.
- \* Power-line Intercom Systems communicate via the power-lines of the house; therefore, it has further distance than a Radio wave Frequency intercom, which is free from building material obstruction like concrete.
- \* Power-line Intercom Systems use the AC power line as the medium. It is subject to any interference already existed in the power-lines, such as your AC AM Radio. There is NO defectiveness with the system.
- \* Static & noise interferences were fed into the power-lines by bad appliances with characteristics of hums, buzz, sizzle or roar punctuated by pops & crackles. About 8 to 10% of the households are affected by these Interferences. Power-line intercoms rely on power-lines for communication. Interference affects 1 maybe 2 channels on the whole spectrum of the bandwidth. To meet the challenges, multi-channel intercoms were created as a solution for users to pick a clean channel for the monitoring purpose.
- \* Dual Phase AC wiring is defined as one 220 volts service drop from the utility company coming in to the building. The 220 volts are divided into two phases of 110 volts each with half the building wired on one phase and half on the other to even out the load. In an optimal scenario, the upper outlet is phase one & the lower outlet is phase two. Dual Phase wiring affects all buildings in North America.
- \* Power meter: In general utilities supply & billing, one household should have only one power-meter. Multiple power meter situations is common in some commercial units, when the tenant rents 2 units & joins them as one. In a residential situation, multiple power meters are possible with duplex, shops & multi-units rental businesses. All power-line Intercoms transmit & receive within one power meter. This is a major security feature.

## Safety Instructions

**Warning: To prevent fire or shock hazard. Do not expose this unit to rain or moisture.**

	<b>CAUTION</b> <b>RISK OF ELECTRIC SHOCK</b> <b>DO NOT OPEN</b>	
<p><b>The lightning flash with an arrowhead within a triangle alerts you to uninsulated dangerous voltage within the product's enclosure that could cause an electric shock</b></p>	<p><b>TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.</b></p>	<p><b>The exclamation point within a triangle alerts you to presence of important operating, maintenance and servicing instructions in this user's manual.</b></p>

### Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Read all warnings.
4. Follow all instructions
5. Do not use this device near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other
9. Do not tamper with the polarized & Grounding plug. Each blade of the plug has a special purpose for seamless communication & safety. A grounding type plug has two blades and a third grounding prong.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the product. When moving the cart/product combination to avoid injury from tip-over (When applicable).
13. Unplug this product during lightning storms or when unused for a long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the product has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the product, the product has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This product shall not be exposed to dripping or splashing water and that no object filled with liquids such as vases shall be placed on the product. Liquid damage is not covered by warranty.
16. Mains plug is used as disconnect device and it should remain readily operable during intended use. In order to disconnect the apparatus from the mains completely, the mains plug should be disconnected from the mains socket outlet completely.
17. Caution marking is located at the bottom of device.
18. The marking information is located at the bottom of device.



## READ THIS BEFORE OPERATING YOUR UNIT

### FOR YOUR SAFETY

- Units shipped to North America are designed for operation on 120 VAC only.
- Safety precaution with use of a polarized AC plug.
- To prevent electric shock, match the wide blade of the plug to the wide slot ONLY, fully insert.
- To ensure safe operation, the three-pin plug supplied must be inserted only into a standard three-pin outlet which is effectively grounded throughout the building's wiring. Extension cords used with the equipment must be three-core, three prongs and be correctly wired. If the plug should fail to fit into the socket/outlet, contact a licensed electrician to replace the old and obsolete outlet. Do Not TAMPER with the plug.
- Improper extension cords are a major cause of fatalities. The fact that the equipment operates satisfactorily does not imply that the power source is grounded and that the installation is completely safe.
- For your safety, if in any doubt about the effective grounding of the power source, consult a qualified electrician.
- The power supply cord should be routed so that they are not likely to be walked on or pinched by items placed upon or against it.
- Never take hold of the plug or cord if your hand is wet, always grasp the plug body when connecting or disconnecting it.
- To reduce the risk of fire and electric shock, do not expose this product to water, rain, splashing, dripping or moisture.
- Do not use this product near water - for example bathtub, sink etc.
- When the unit is not used for a period, turn the power off and unplug it from the outlet.
- Do not attempt to modify this product in any way without written authorization from Intercom Central. Unauthorized modification could void the user's authority to operate this product

## Solution:

### Locating the Source of Interference

The only way to eliminate the noise is to locate the source. The system is NOT Defective

Scenarios	Cause	Action
Interference & noise occurred intermittently	A device was being turn on at that moment. One of such candidate would be a microwave oven.  * Not all microwaves are bad.	1. Find out what device was being used at the time when the interference occurred. 2. Replicate the scenarios. Avoid using that device where the intercom is engaged. 3. use a different Channel  The system is NOT defective
Interference & noise happened at a certain period of time. For example evening & night time or vice versa	A CFL ( fluorescent bulb ) using a non-compatible timer was turned on because of a preset schedule  Other device being turn-on at a specific schedule	1. Replaced the CFL non-compatible timer with a compatible model. 2. Replace the CFL light with a traditional incandescent bulb 3. Mark the time when the statics starts & check the devices in the building to see what was being scheduled to turn on at that time 4. Use a different channel  The system is NOT defective

Other Alternatives: Use the system in a different location

### **Solution 2: Power Meter**

This is common in business offices when one or more units were combined as one business. For the ease of management, the property owner usually employed the "one meter per unit" policy. For the tenants, they will end up with more than one meter.

The solution to this problem is to run an electrical wire from one meter to the other meter, or use the system in a different location

### **Solution 3: Bad Unit**

Troubleshooting - refer to the 4 steps in "Troubleshooting a Bad unit" on page 9.

DOA (dead on arrival): Contact us by email via your e-store (Amazon, eBay, buy.com etc) for free replacement.

Warranty claim: Contact us by email via your e-store (Amazon, eBay, buy.com etc) for free replacement.

## **Interference and Noise**

### **(Recap of the disclosure from the "Knowledge Base" section of the on-line sales page)**

The Power-line intercom system communicates by using the power-line in the building. It is **subject** to any interference already existed in the power-line, just like your **AC AM radio**.

Static, noises and interferences will feed into power-lines by bad appliances with characteristics of hums, buzz, sizzle or roar punctuated by pops & crackles. About 8 to 10% of the households are affected by Interference. Interference usually affects 1 or maybe 2 channels on the whole spectrum of the bandwidth. To meet the challenges, multi-channel intercom was created as a solution for users to pick a clean channel for communication. The most common appliances that create interference are microwave ovens, hair dryers, motors and non compatible electrical component combinations, like CFL non-compliance timers.

The only way to eliminate the noise is to locate the source. The system is NOT Defective.

## **Features:**

- ❖ Our Advance 3 Pronged G2 intercoms are specially designed with 3 pronged power cables (live, neutral & ground) to bridge the dual phases of the electrical wirings for household & small business.
- ❖ Provide the wiring in the premise is properly grounded at the third leg of the socket & you have only ONE Power meter, the system will work off the existing electrical wire of the building. There is NO radio wave in operating the system. Therefore you are no longer limited by building materials like "thick Walls". There is no need for socket matching (same line) like the TRADITIONAL 2 pronged system does.
- ❖ You can use all the wiring at the house vs. just half of the house with the traditional 2 wire intercoms. Just simple plug and use.
- ❖ Illuminate characters function switch enable dark and dim environment usage.
- ❖ Illuminate characters function switch enhance vision impaired customers.
- ❖ Red LED function buttons, White LED power button & Blue LED channel buttons.
- ❖ Direct access channel selector instead of the traditional analogue slide /scroll switch.
- ❖ Digital Control function Panel. No intermittence contact problem
- ❖ Constant on monitor mode. Eliminate the voice activation problem of missing out the first part of the conversation.
- ❖ Multi-channels for designated station setting or for monitoring purpose.
- ❖ Security- All conversation travel from outlets to outlets within the same power meter of the building. No bugging and no eavesdropping.

### **Included In the Box:**

Intercoms  
User Manual  
Quick setup Guide  
Troubleshooting Guide

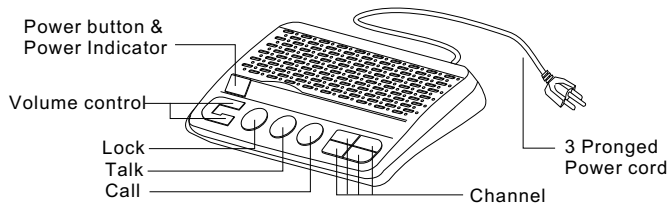
### **Warranty:**

All Intercom Central system carries a 12 month warranty.

### **Contacting Intercom Central:**

Please utilize the internal email system of the on-line store where the system is purchased. Please always include the Order ID issued by that store for proper reference.

## Getting to know the Intercom



### Function Key Descriptions:

All Function Keys are illuminated by RED lights from underneath the button. Illuminations are dim when de-activated and highlighted when activated.

#### Power Button and Power Indicator:

When the intercom is powered on, the power indicator is illuminated in WHITE.

#### Channel Keys

All Channel Keys are illuminated by BLUE lights from underneath the button. Illuminations are dim when de-activated and highlighted when activated.

## Troubleshooting a Bad Unit

For any communication problem ranging from "right out of the box" or having using the system for a while and changing locations, most of the problem are caused by electrical wiring problem in the house. However occasionally, a bad unit could also be the culprit. To isolate the problem, please follow the following steps.

1. Plug all units into one SINGLE POWER STRIP. Set all units to the same channel, e.g. channel 3. Adjust the volume for all units at mid-level to avoid feedback. Try communicating all units with each other
2. If anyone one of units that is not communicating while on the SINGLE POWER STRIP, that unit IS defective. That unit must be replaced.
3. If all units are communicating. The system is NOT DEFECTIVE.
4. You can RESOLVE the above issue by following the Installation Steps in Solutions #1 below. If you have performed the Installation Steps and the system is communicating while on a power strip, but not at the outlets throughout the house, please also check if you would have more than one power meter. If you do, you can resolve the problem with Solution #2.

\*\* The test must be performed on a Single Power strip.

\*\*\* Never perform the test on any in-wall electrical outlets. Your test will be affected by the dual phase wiring & therefore inconclusive.

\*\* The Power strip is ONLY for TESTING purpose. NOT meant for operations.

### Solutions:

#### Solution 1: Electrical Wiring

Although the electrical wiring failed to meet the system requirements, you can resolve the issue by setting up the system like a Traditional 2 wire Intercoms by following these simple steps.

- 1) Set all units to the SAME channel. For example, channel 2
- 2) Plug the 1st unit to one of the outlets.
- 3) Adjust the unit to mid-volume. Feed a radio to the intercom as a sound source.
- 4) Leave the 1st unit at its location. Never relocate the 1st unit.
- 5) Press the "lock" button on the 1st unit. This will activate the unit to constant on.
- 6) Take the 2nd unit to another location. Make sure it is also on channel 2. Adjust the unit to mid volume. If you can hear the radio from the 1st unit, you have found the right outlet.
- 7) If you cannot hear the radio from the 1st unit, try plugging the 2nd unit to other outlets from within the same location, e.g. the upper or lower socket.
- 8) Repeat the same procedures for all the remaining units.

## Don't s

**Do not** operate the system in a **shared power meter** environment. Should there are more than one household sharing the power meter, every households will have the same access to the conversation. There will be neither privacy nor security if the system is operated in a shared power meter environment.

No **surge protector**. It will **degrade** the system's performance significantly.

Do not operate the system in an outdoor environment. This system is **NOT designed for outdoor operation**.

**Do not use 2 prongs extension cord**. It will lose connections to the other half of the house.

**Do not tamper with this 3 prong plug**. Each blade of the plug has a special purpose for seamless communication. If your socket is not fit with the plug, you are not meeting the system requirement (see System Requirement on the sales page). You should

- 1) Set up the system as a Traditional 2 prong system (refer to solution #1 on page 9)
- 2) Contact a qualify electrician to upgrade the electric wire system in the building.

### When Thing Gone Wrong - Troubleshooting & Solutions:

There are only **THREE** causes for communication problems.

- 1) **Electrical Wirings**. \*\* Power-line Intercoms rely on electrical wirings to communicate with each other.

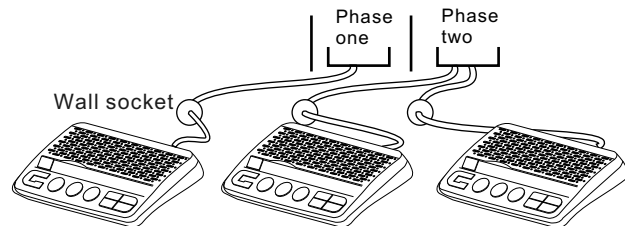
- Some houses were built before ground pronged is required.
- These old wirings were upgraded; but not throughout the whole building.
- The ground prong in the socket is not grounded (connected)

All these can easily be identified (**troubleshoot**) by using this 3-wire tester. You can get it from Amazon, Home Depot & OSH for a few dollars. Please keep the tester should any of your home appliances fail in the future. (To **resolve** wiring problems please refer to Solution #1)



- 2) **Power Meter**: There is more than one meter in the service area. (Solution #2).
- 3) **Bad Units**: one of the units is bad.

## Power Line/Electic Wire



## Installation and Setup

Provided that the system requirements are met, setup and installation are just simple plug and play. Simply plug the intercoms into any electrical outlets and enjoy communications throughout the whole premises.

This power line communication device uses the electrical wiring from inside the building. It **DOES NOT** require radio waves as the communication is no longer limited to building materials, walls, etc. The system communicates wherever the electrical wire goes.

## System Requirement:

- ALL electrical sockets are 3 pronged with the third prong properly GROUNDED. 110V and 240 volts the SAME
- Using the system from within **ONE SINGLE** power meter.
- No Power meters sharing.

## What would happen if my wirings are not GROUNDED???

### Can I still use this system???

Yes, you can. You do need to set up the Advance 3 Prong as a Traditional 2 pronged system. Please refer to the **Troubleshooting and Solution section on page 9**. Without the ground wire, the dual phases of the electric wires can no longer be bridged. You can only use one of the two phases in your electrical wire.

## Using the Function Keys:

### Volume:

Press the + to increase the volume and a beep corresponding to the audio level will sound every time when the + is pressed.

Press the - to decrease the volume and a beep corresponding to the audio level will sound every time when the - is pressed.

The beeps will stop after the level reaches the max & the min.

### LOCK:

Press the **LOCK** button to engage into **monitor mode**. In the monitor mode the system is constantly on.

We have replaced "voice activation" with constant on. There is no need to raise your voice to activate the mode anymore. Constant-on eliminates such problems like "missing the first part of the conversation" which is a common defect among "voice activation" design. It also eliminates the problem of not triggering the "voice activation" if the sound is not loud enough. Only one party is able to engage in the monitor mode at any given time. To talk to the party being monitored, the LOCK button at the monitored unit must be disengaged. Depress the LOCK button or pressing any function button will de-activate the LOCK mode.

### TALK:

Press the **TALK** button to initiate a conversation. Depress the button to wait for the reply.

### CALL:

Press the **CALL** button to "ring" your intended party. A ring tone is generated to the intended party that you are calling. Depress the button to terminate the ringing.

### Standby:

Idling all function buttons (LOCK, TALK, and CALL) will put the system into a standby mode such as waiting for incoming communication

## Using The Channel Keys & Channel Setup

### Pan-paging Communication:

Set all units to the same channel for Pan-Paging Communication Mode.

Functionality:

Any time when the LOCK, TALK & CALL function is pressed, the conversation will be sent to all units on the same channel.

Recommended Usage:

- 1) Use in a PA system setup
- 2) Baby monitor throughout the whole system

### Dedicated Communication:

Set each unit to different channels for designated communication

Functionality:

Any time when the LOCK, TALK & CALL button is pressed, the conversation will only be sent to the unit that is on that designated channel.

Recommended Usage:

For different parts of the household or different departments in the business

### Mixed Mode Communication:

Set some units on the same channel, while the remaining units on different Channels.

Functionality:

Any time when the LOCK, TALK & CALL button is pressed, the conversation will be sent to designated unit on the same channel. When the conversation is ended, you can go back to monitoring channel.

Recommended Usage:

Set one unit in monitor mode on one channel. Set all remaining units to other designated channels. From any of the remaining units, you can switch the channel back and forth & use the system as monitors and designated communicators.