



MOBILE LG MONITORING VIEW USER MANUAL



Model PLGMVW100
Android Version

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Please read carefully and store in a safe place for future reference.
Content familiarity required for proper installation and operation.

The instructions included in this manual must be followed to prevent product malfunction, property damage, injury, or death to the user or other people. Incorrect operation due to ignoring any instructions will cause harm or damage. A summary of safety precautions begins on page 4.

For more technical materials such as submittals, engineering databooks, and catalogs, visit www.lghvac.com.

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SAFETY INSTRUCTIONS

The instructions below must be followed to prevent product malfunction, property damage, injury or death to the user or other people. Incorrect operation due to ignoring any instructions will cause harm or damage. The level of seriousness is classified by the symbols below.

TABLE OF SYMBOLS

 DANGER	<i>This symbol indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.</i>
 WARNING	<i>This symbol indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</i>
 CAUTION	<i>This symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.</i>
Note:	<i>This symbol indicates situations that may result in equipment or property damage accidents only.</i>
	<i>This symbol indicates an action that should not be performed.</i>

DANGER

Input power to the outdoor unit remains connected and on during procedures in this manual. Do not touch any exposed outdoor unit wiring, terminals, or other electrical components with tools or exposed skin. Only qualified technicians should install, use or remove this unit.

Improper installation or use may result in fire, explosion, electric shock, physical injury and/or death.


Don't use or store flammable gas or combustibles near an outdoor or indoor unit.

There is risk of fire, explosion, and physical injury or death.

WARNING

The information in this manual is intended for use by a trained technician familiar with the U.S. National Electric Code (NEC) who is equipped with the proper tools and test instruments.

Failure to carefully read and follow all instructions in this manual may result in equipment malfunction, property damage, personal injury and/or death.

 **Do not install the Mobile LGMV unit if it will be exposed to rain or other precipitation. Do not install the unit in a location exposed to open flame or extreme heat. Do not touch the unit with wet hands.**

There is risk of fire, electric shock, physical injury and/or death.

For replacement of an installed outdoor or indoor unit, always contact an LG trained service provider.

There is risk of fire, electric shock, explosion, and physical injury or death.

 **Do not run the compressor with the service valves closed.**

There is risk of explosion, physical injury, or death.

Replace all control box and panel covers.

If cover panels are not installed securely, dust, water and animals may enter the unit, causing fire, electric shock, and physical injury or death.

Always check for system refrigerant leaks after an outdoor or indoor unit has been installed or serviced.

Exposure to high concentration levels of refrigerant gas may lead to illness or death.

Wear protective gloves when handling equipment.

Sharp edges may cause personal injury.

Dispose of any packing materials safely.

- Packing materials, such as nails and other metal or wooden parts may cause puncture wounds or other injuries.

- Tear apart and throw away plastic packaging bags so that children may not play with them and risk suffocation and death.

 **Do not install the unit in any location exposed to open flame or extreme heat. Do not touch the unit with wet hands.**

There is risk of fire, electric shock, explosion, and physical injury or death.

 **Do not change the settings of the protection devices.**

If the pressure switch, thermal switch, or other protection device is shorted and forced to operate improperly, or parts other than those specified by LG are used, there is risk of fire, electric shock, explosion, and physical injury or death.

If the air conditioner is installed in a small space, take measures to prevent the refrigerant concentration from exceeding safety limits in the event of a refrigerant leak.

Consult the latest edition of ASHRAE (American Society of Heating, Refrigerating, and Air Conditioning Engineers) Standard 15. If the refrigerant leaks and safety limits are exceeded, it could result in personal injuries or death from oxygen depletion.

Mobile LGMV Terms and Conditions

In using Mobile LGMV hardware and smart phone application you agree to the Mobile LGMV terms and conditions.

- Mobile LGMV hardware and smart phone application are to be used only with LG Electronics USA, Inc. air conditioner products.
- Mobile LGMV hardware and smart phone application cannot be sold/transferred/rented to any other parties.
- All data generated by Mobile LGMV hardware and smart phone application cannot be sold/transferred/rented to any other parties.
- A complete list of Mobile LGMV terms and conditions is on the Mobile LGMV download page at:
<http://www.lgearcon.com/gcac.common.index.dev>.



Mobile LG Monitoring View

This manual describes how to install and use Mobile LG Monitoring View (LGMV) to troubleshoot LG commercial air conditioning equipment.

Mobile LGMV consists of:

- a wifi module with connecting cable (Figure 1), Model PLGMVW100
- an app running on an Android device (Figure 2) (smartphone or tablet)

Compatible Equipment

Mobile LGMV (Android) is compatible with these LG outdoor units:

- Multi V IV Air Heat Pump
- Multi V IV Air Heat Recovery
- Multi V Water IV Heat Pump
- Multi V Water IV Heat Recovery
- Multi V S
- Multi V III Air Heat Pump
- Multi V III Air Heat Recovery
- Multi V Mini
- Multi F/Multi F MAX

Safety

Safety of personnel is the primary concern during all procedures. Read and understand the safety summary at the front of this manual. Use the appropriate tools and accessories during troubleshooting.

⚠ Do not work alone, if possible. Know how to obtain emergency medical and fire fighting assistance.

Installation Personnel

This product is intended for use by personnel trained in the required construction, mechanical, electrical, and/or other disciplines.

Applicable Codes

Personnel must be familiar with and follow the applicable national, state, and/or local codes.

⚠ WARNING

Troubleshooting work must be performed by trained personnel and in accordance with national wiring standards and all local or other applicable codes. Improper troubleshooting and repair/replacement of equipment can result in fire, electric shock, physical injury, or death.

Note:

Improper troubleshooting and repair/replacement of equipment can result in damaged equipment or degraded operation.

Figure 1: LGMV Wifi Module



Figure 2: LGMV App on Smartphone



INTRODUCTION

System Configuration

Using LGMV

Mobile LGMV consists of a hardware wifi module, an interface cable, and a free application (app) for Android devices. The user must supply the Android smartphone or tablet. Before using Mobile LGMV, you must download and install the latest version of the free app from the LG website listed in this manual.

The wifi module and the smartphone app together provide monitoring and troubleshooting capability for LG air conditioning systems. Mobile LGMV functions only with LG products.

Mobile LGMV can display and graph operational data for the air conditioner system including the indoor units and the outdoor unit. Mobile LGMV also displays error codes and a troubleshooting guide (if previously downloaded). Indoor unit operating mode can be set through Mobile LGMV.

To use Mobile LGMV you must be a trained HVAC service technician familiar with variable refrigerant flow (VRF) systems in general and with LG's products. You should understand the inverter air conditioning operation cycle, the meaning of the data displayed by Mobile LGMV, and how to use the data to troubleshoot the system.

Figure 3 shows the LGMV app and wifi module in a typical troubleshooting application. The Mobile LGMV wifi module connects to an LG outdoor unit via the supplied cable. Table 1 lists Mobile LGMV smart phone/tablet requirements.

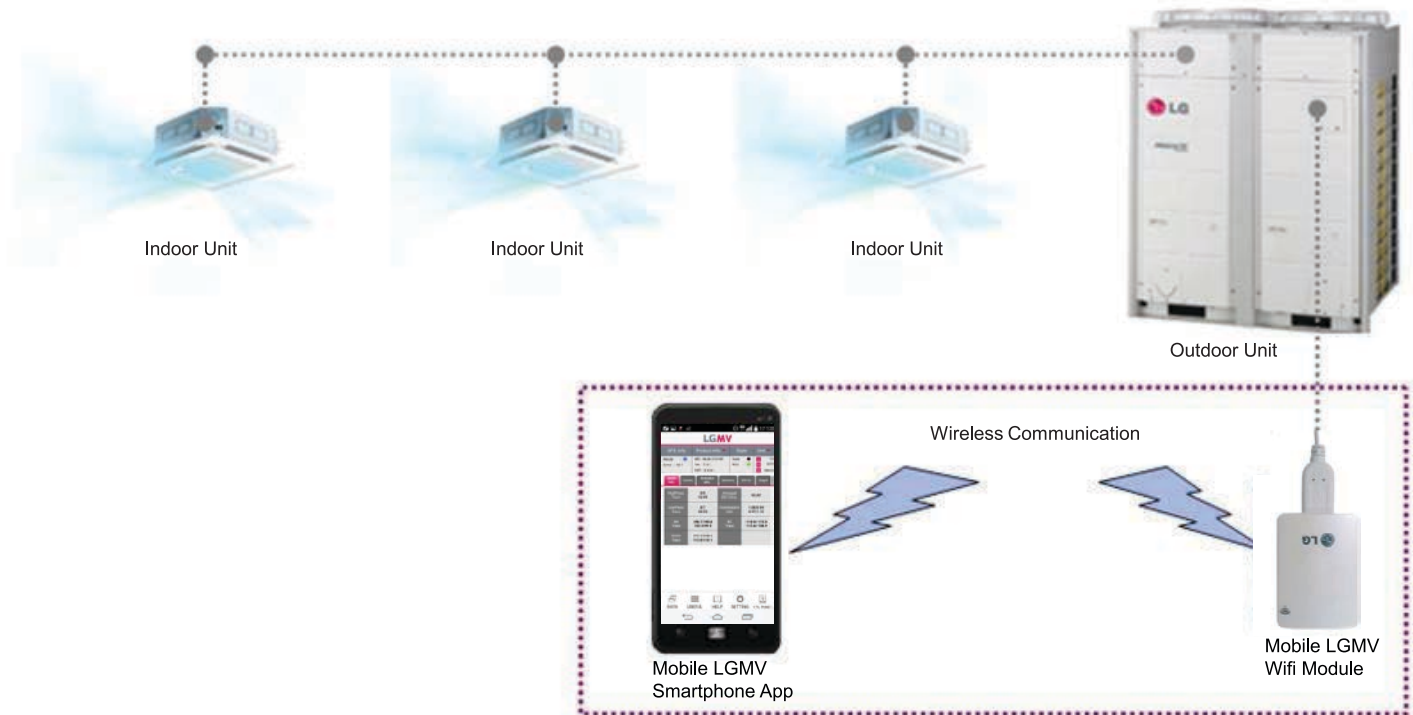
Note:

- Some functions may not operate or the screen display may be degraded depending on the smartphone used
- Mobile LGMV will not function normally if the operating environment does not meet the minimum specifications

Table 1: Mobile LGMV Smartphone/Tablet Specifications

Smartphone/Tablet Specifications			Effective Communication Distance
Minimum Specification	Recommended Specification	Exceptions	
<ul style="list-style-type: none">• Phone: Android 2.2• Tablet: Android 4.4.2 (Kitkat)• CPU: 1 GHz• RAM 1 GB	<ul style="list-style-type: none">• Android 4.4.2 (Kitkat, or higher)• CPU: 1 GHz dual core, or higher• CPU: 1 GHz• 1280 x 720; 800 x 400 resolution (optimized)	<ul style="list-style-type: none">• Android 3.x (Honeycomb) not supported• iOS devices not supported	<ul style="list-style-type: none">• Effective distance: 32.8 ft (open area)• Effective distance may be reduced by the communication environment

Figure 3: Typical Mobile LGMV Troubleshooting Configuration




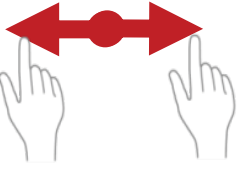
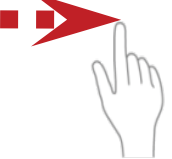
Mobile LGMV Operating Considerations

- Mobile LGMV processes data in real time. If other functions of the smartphone are used at the same time as Mobile LGMV, smartphone resources may be insufficient for Mobile LGMV to process data or the Mobile LGMV connection may be disconnected. Please use the product with this in mind. Always use a smartphone with at least the minimum recommended specifications.
- The Mobile LGMV application may unexpectedly end due to insufficient system resources.
- Transmission/reception data volume may increase according to the number of indoor and outdoor units. Mobile LGMV response speed may be slower for some smartphone specifications.
- Wireless transmission/reception distance may be reduced or communication may be disconnected due to the operational environment (weather, electromagnetic interference or physical obstacles).
- Mobile LGMV may not work correctly with routed smartphones.
- As communication distance between the Mobile LGMV wifi module and the smartphone increases, smartphone wifi output may increase, causing greater drain on the smartphone battery. During use, keep the smartphone as close as safely possible to the Mobile LGMV wifi module.
- Disconnect the Mobile LGMV wifi module from the ODU when troubleshooting is complete.

INTRODUCTION

App User Interface

Mobile LGMV uses typical smartphone control gestures to select and display items on screen.

Operation	Action	Description	Result
Tap (Press)		Briefly press the indicated area of the screen and then release	<ol style="list-style-type: none"> 1. Press: Applicable object is selected or focused 2. Release: Run event
Pinching (Tap & Drag)		Operation of pressing two points on the screen and moving while keeping pressed	<ol style="list-style-type: none"> 1. Press: Applicable object is selected or focused 2. Move: Response including moving object/scrolling etc. 3. Release: Stop response or run event
Flicking		Quickly moving from one point to another on the screen and then releasing	<ol style="list-style-type: none"> 1. Press: No response (Or mark pressed) 2. Quick move & release: Run event

Installation Sequence

To use Mobile LGMV, you must install the app on a smartphone or tablet and you must connect the wifi module to the outdoor unit. If you have not yet installed the app, it may be more convenient to do so before arriving at the job site.

Download and Install App

To use Mobile LGMV, you must download and install the app on an Android device.

1. Open a web browser on your Android device and go to <http://www.lgeaircon.com/gcac.common.index.dev>.
2. Sign in to your account (Figure 4). If you do not have an account, create a new account.
3. Tap the **Mobile LGMV** icon (Figure 5). The User Agreement page is displayed.
4. Read the User Agreement and tap the **Agree** buttons to begin the app download (Figure 6).
5. Select the downloaded installation file (.apk) to proceed with installation (Figure 7).

Figure 4:

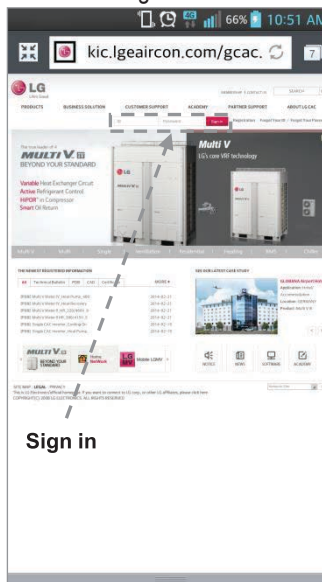


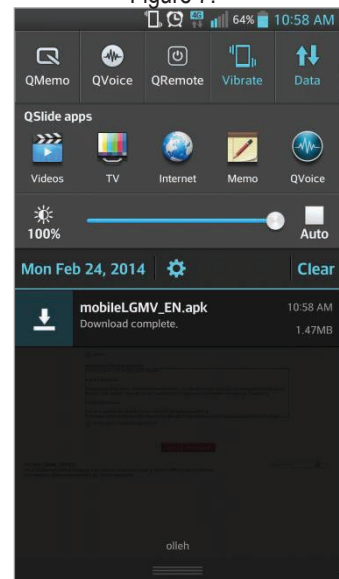
Figure 5:



Figure 6:



Figure 7:



INSTALLATION

Application Installation

Download and Install App - continued

6. Read the app privacy and access information and tap **NEXT** (Figure 8).
7. Observe the installation progress screen as the app is installed (Figure 9).
8. When installation is complete, an Application Installed message is displayed. Tap **Open** to run the app or tap **DONE** to end installation (Figure 10).

Figure 8:

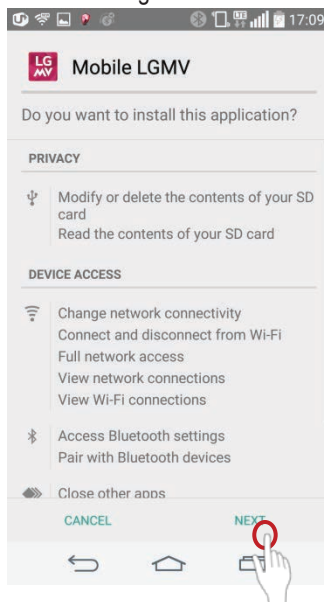


Figure 9:

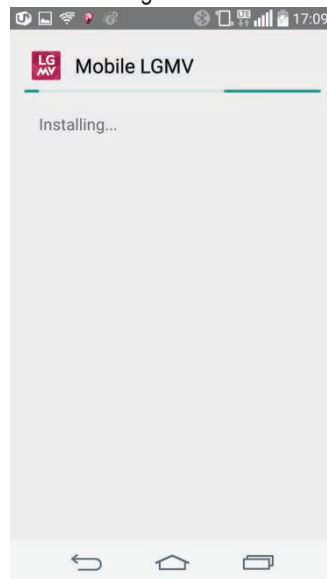
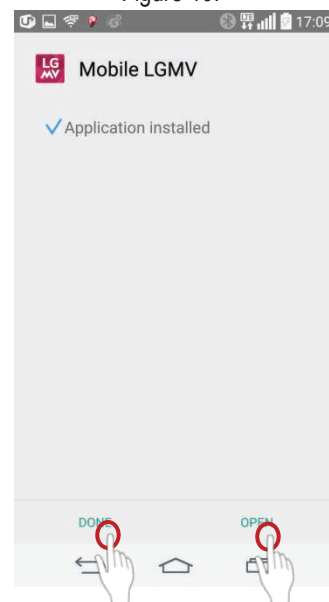


Figure 10:



Update the App

When the app starts, it will check if there is an updated version available.

1. Tap the **Mobile LGMV** icon to start the app.
2. If there is an app update available, the update screen displays. Tap **OK** to start the download (Figure 11).
3. Observe the download progress on the Update Mobile LGMV window (Figure 12).
4. When the download finishes, the Replace Application window displays. To acknowledge the existing application will be replaced, tap **OK** (Figure 13).
5. Read the application permissions and tap **Install** to begin updating the app (Figure 14).

Figure 11:

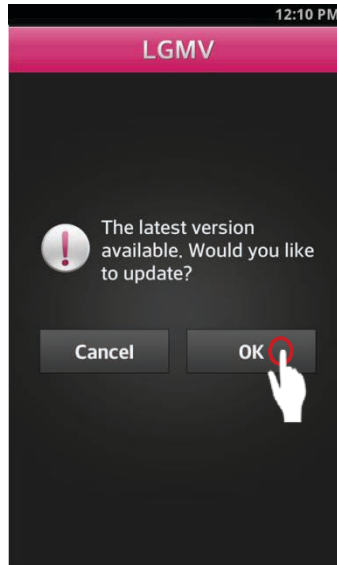


Figure 12:

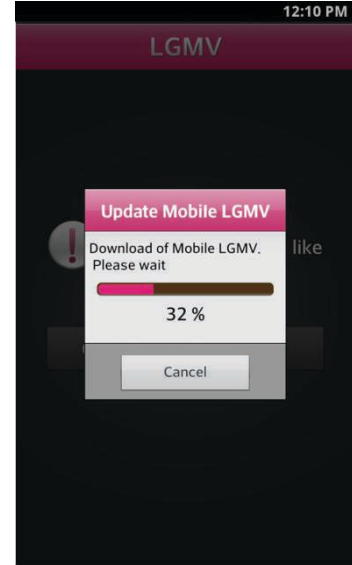


Figure 13:

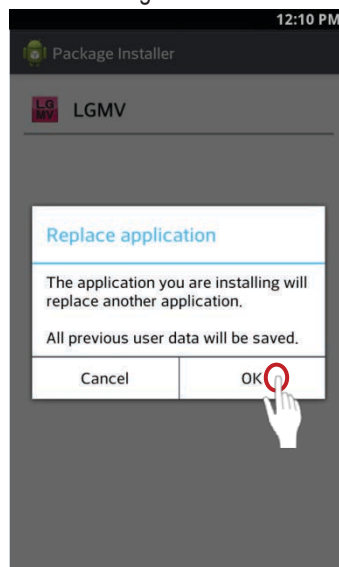
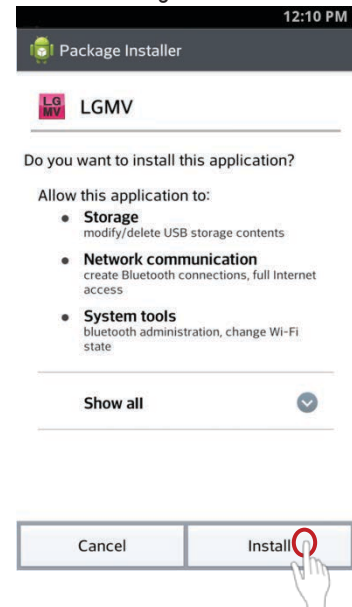


Figure 14:



INSTALLATION

Hardware Installation

Hardware Description

Mobile LGMV hardware consists of a wifi module and a two-piece cable (Figure 15).

The wifi module sends and receives wifi signals to/from the smartphone. The cable connects the wifi module to the outdoor unit. The cable has two sections because there are two types of outdoor unit connectors, one for Multi V products and one for Multi F products. When testing Multi V products, leave the Multi V extension connected. When testing Multi F products, temporarily remove the Multi V extension.

⚠ DANGER

Input power to the outdoor unit remains connected and on during this procedure. Do not touch any exposed outdoor unit wiring, terminals, or other electrical components with tools or exposed skin. Only trained technicians should install, use, or remove this equipment.

Improper installation or use may result in fire, explosion, electric shock, physical injury and/or death.

Note:

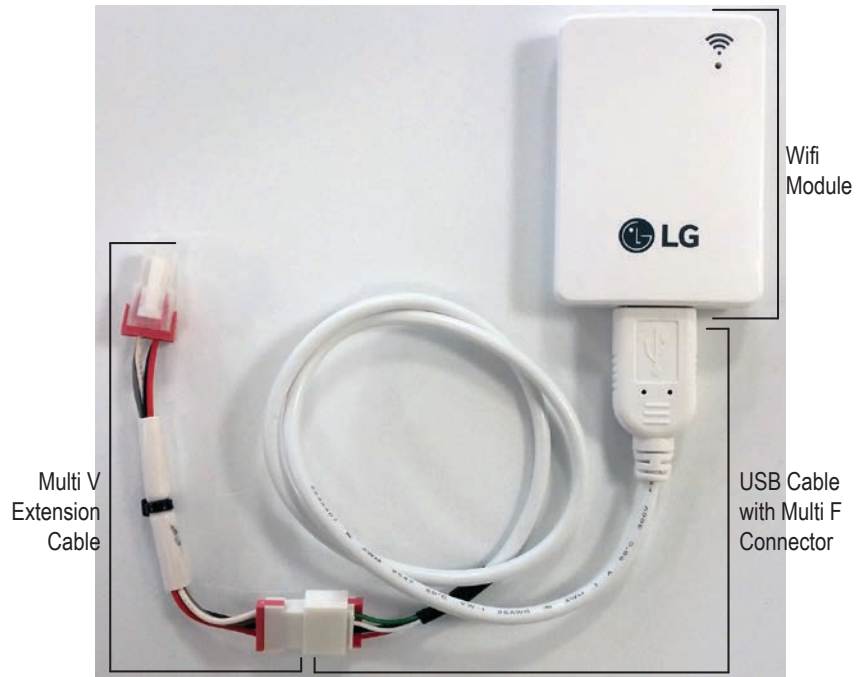
Disconnect the Mobile LGMV wifi module from the ODU when troubleshooting is complete.

Connect Wifi Module

Follow this procedure to connect the Mobile LGMV wifi module to a Multi V or Multi F outdoor unit.

1. Ensure the latest version of the Mobile LGMV app is installed on your Android smartphone or tablet.
2. Locate the Mobile LGMV hardware (Figure 15).
3. Connect the wifi module to the USB connector of the cable.
4. If connecting to a Multi V ODU, ensure the Multi V extension cable is connected.
5. If connecting to a Multi F ODU, ensure the Multi V extension cable is not connected. Be sure to retain the Multi V extension cable.
6. Remove the service panel(s) to gain access to the interior of the outdoor unit.
7. Locate the Mobile LGMV connector. For Multi V ODUs, refer to Figure 16. For Multi F ODUs, refer to Figure 17.
8. Carefully connect the Mobile LGMV cable to the appropriate ODU connector.
9. Place the wifi module and cable in a safe position where it will not become entangled in other ODU wiring. Be sure there is clear line of sight between the wifi module and the Android smartphone or tablet.

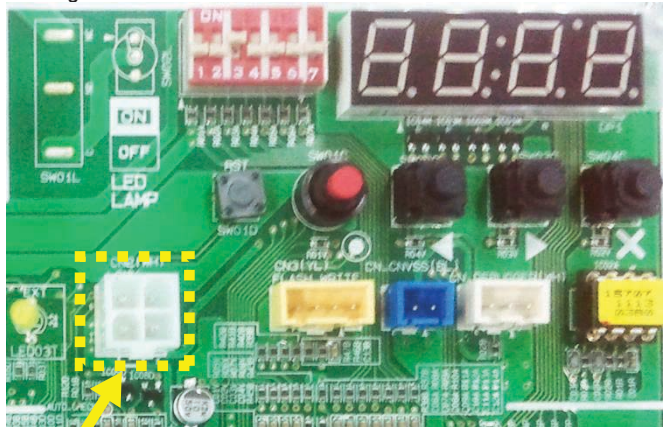
Figure 15: Mobile LGMV Wifi Module and Cable



INSTALLATION

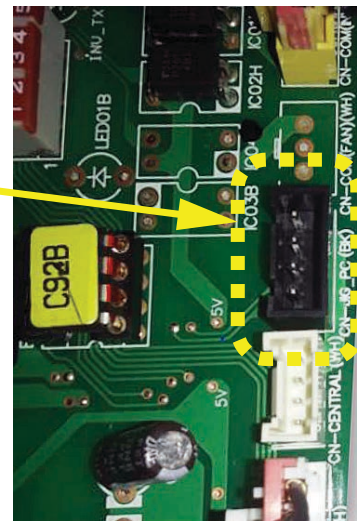
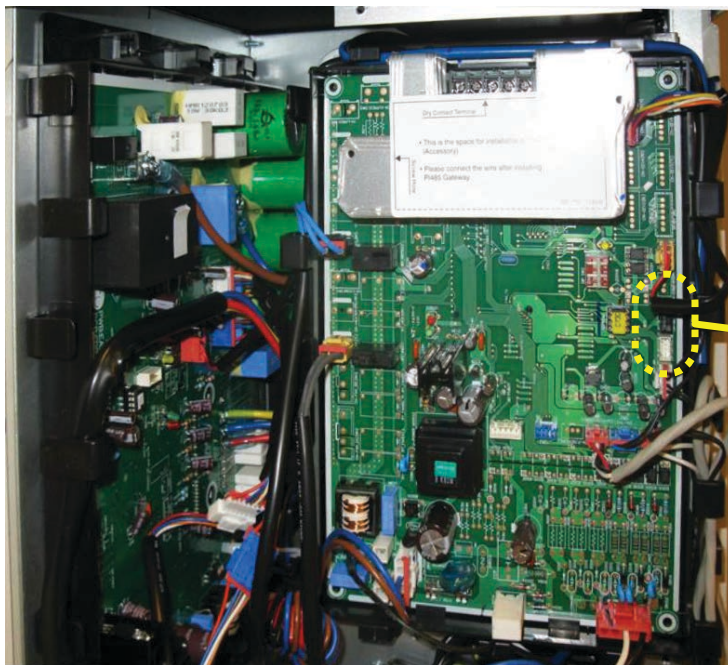
Hardware Installation

Figure 16: Multi V ODU Connector for Mobile LGMV Cable



Multi V
Connection

Figure 17: Multi F ODU Connector for Mobile LGMV Cable



CN-JIG
Connector

OPERATION

Starting Mobile LGMV

Follow these steps to start the app and connect to the wifi module.

1. Ensure the Mobile LGMV wifi module is correctly connected to the ODU.
2. Tap the **Mobile LGMV** icon on your smartphone or tablet to start the app (Figure 18).
3. Tap the **Wi-Fi** icon (Figure 19). Bluetooth version is not available in the US.
4. If necessary, tap **Yes** to turn on wifi on the device (Figure 20).
5. Tap **Scan for Device** to search for the wifi module (Figure 21).
6. Tap the device named **LG_MV-XX-XX-XX** (Figure 22).
7. When connection is made, observe the color of the wifi icon change (Figure 23).
8. Tap **OK** to proceed to the monitoring screen (Figure 23).

Figure 18:

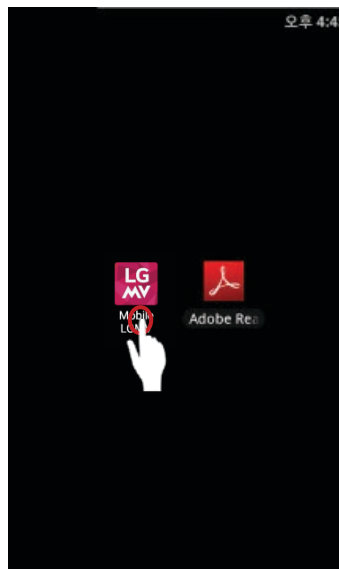


Figure 19:

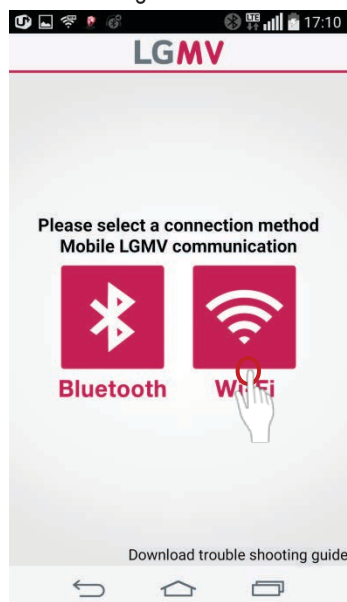
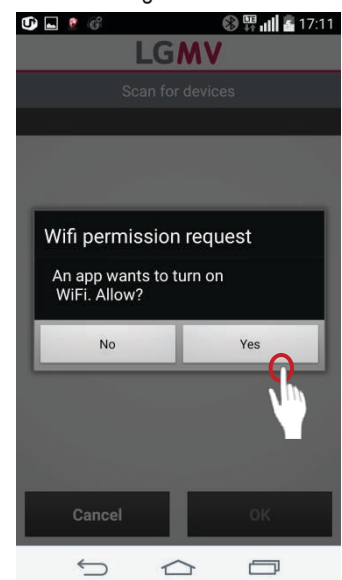


Figure 20:



Starting Mobile LGMV - continued

Figure 21:

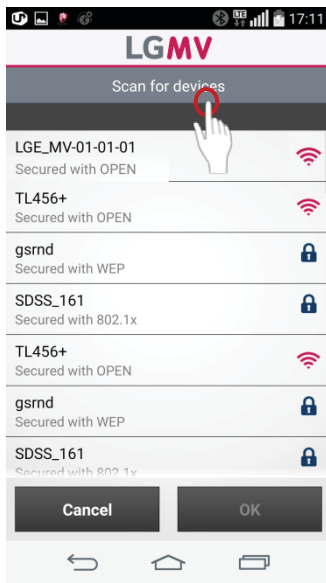


Figure 22:

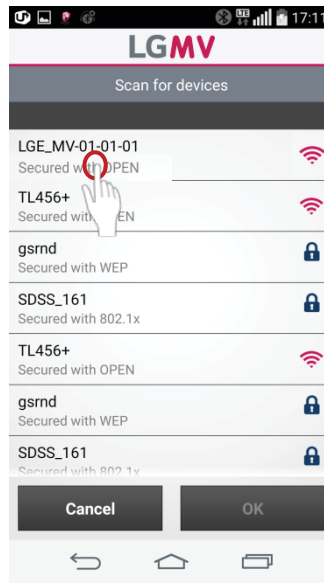
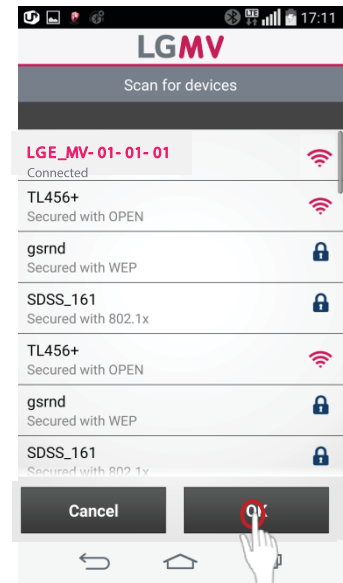


Figure 23:



OPERATION

Configuring Mobile LGMV for ODU

Mobile LGMV must be configured to work with the ODU type you are testing.

Note:

Mobile LGMV will automatically recognize the following products: Multi V IV heat pump/heat recovery, Multi V Water IV heat pump/heat recovery, and Multi V S.

1. Tap to select the ODU model, number of ODU frames, and number of indoor units (Figure 24).
2. If desired, enter text in the **Site** fields (Figure 24).
3. Tap the **OK** button when finished (Figure 24).
4. The monitoring screen is displayed (Figure 25).

Figure 24:

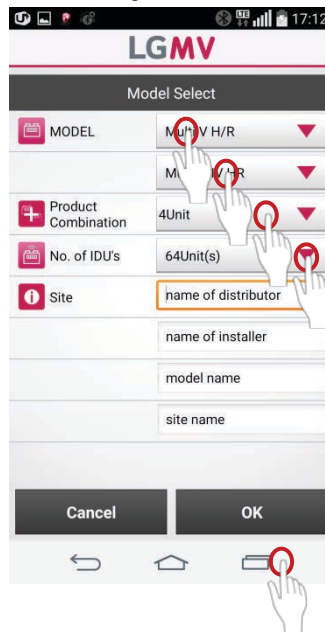


Figure 25:



Normal Operation and Stopping the App

Note:

Mobile LGMV must receive data for at least 20 minutes before the data is valid for troubleshooting.

Always remove the Mobile LGMV wifi module when troubleshooting is concluded.

- Random radio frequency signals could cause unintended system commands to be generated.
- Unauthorized system access is possible.

1. Observe the RCV indicator (Figure 26). During normal operation it will be green to indicate a good wifi connection.
2. Refer to the procedures and information on the following pages to troubleshoot the system (Figure 27).
3. When Mobile LGMV operation is concluded, press the Back button on the smartphone to end Mobile LGMV (Figure 28).
4. Disconnect the Mobile LGMV wifi module from the ODU.
5. Clean up any discarded items or other debris resulting from troubleshooting.
6. Reinstall any removed panels on the ODU.

Figure 26:



Figure 27:

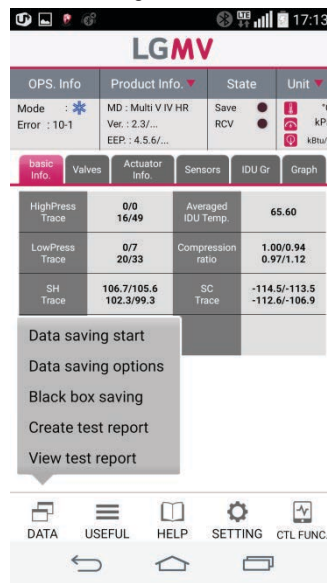
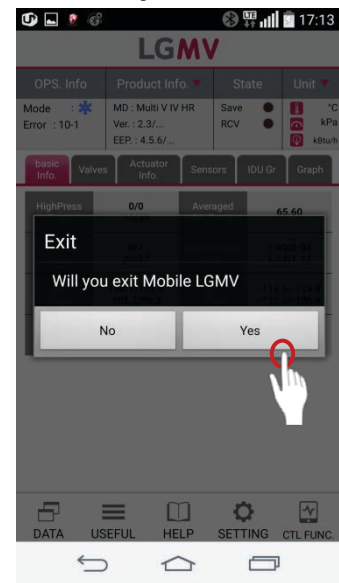


Figure 28:



OPERATION

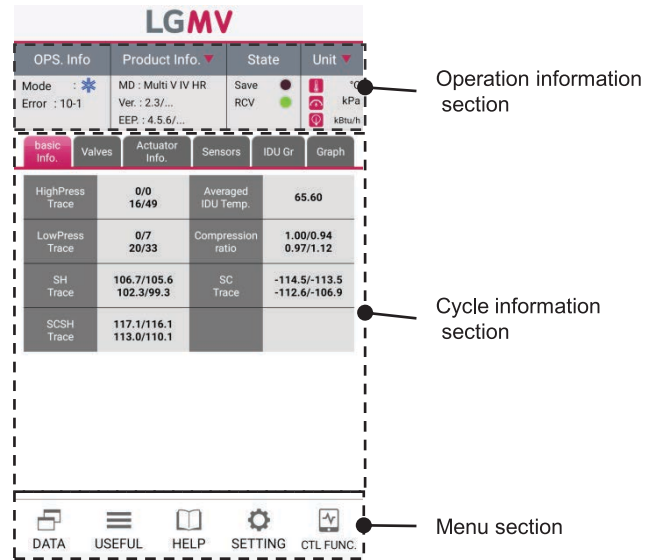
Main Screen

Mobile LGMV Main Screen

When communication is established between the ODU and the app, the Mobile LGMV main screen (Figure 29) displays. This screen displays information about the air conditioning system to which it is connected. There are three main sections:

- Operation information section: This section displays operating mode, error information, product information, unit information etc.
- Cycle information section: Information is divided into tabs. Select each tab to view basic information, valve operation, actuator information, sensor information, IDU Gr and graph information.
- Menu section: This section provides additional functions including saving air conditioner data, Useful function setting, and indoor unit operation control etc.

Figure 29:

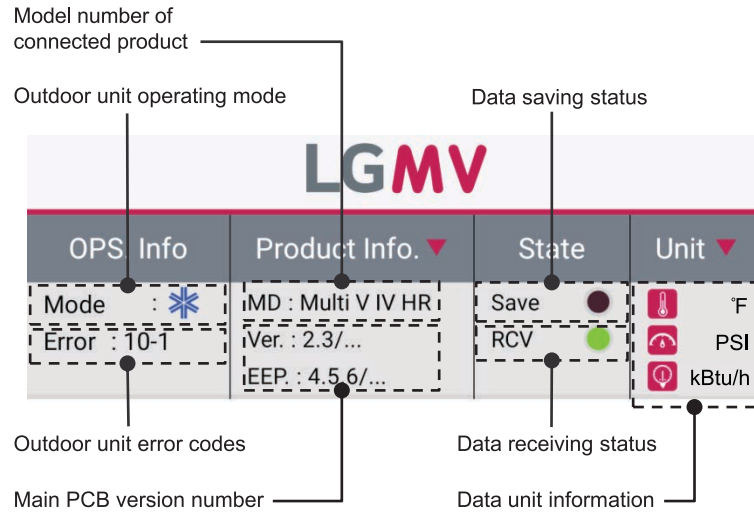


Main Screen- Operation Information

The main screen operation information section (Figure 30) is described below.

- Outdoor unit operating mode. Displays the current operating mode of the outdoor unit. It shows cool/heat/fan/stop.
- Outdoor unit error information. Displays the current ODU error code.
- Connected product model. Displays the model of outdoor unit connected to Mobile LGMV.
- Main board version information. Displays the version and EEP information of the connected outdoor unit.
- Data saving status. Green light is on when data is being saved.
- Data receiving status. Green light flashes when data is being received from the outdoor unit. If there is a communication error, this light flashes red.
- Data unit information. Displays the units of measure of displayed data. Either standard or metric units can be selected for display.

Figure 30:



Current operating mode is indicated by icon:

- Cooling mode
- Heating mode
- Stop

OPERATION

Main Screen

Main Screen- Cycle Information

Cycle information screens are shown below (Figure 31 through Figure 36). Tap the desired section tap heading to display that section's data. Each of these sections is described on the following pages.

Figure 31:

basic Info.	Valves	Actuator Info.	Sensors	IDU Gr	Graph
HighPress Trace	0/0 16/49	Averaged IDU Temp.	65.60		
LowPress Trace	0/7 20/33	Compression ratio	1.00/0.94 0.97/1.12		
SH Trace	106.7/105.6 102.3/99.3	SC Trace	-114.5/-113.5 -112.6/-106.9		
SCSH Trace	117.1/116.1 113.0/110.1				



Basic information

Figure 32:

basic Info.	Valves	Actuator Info.	Sensors	IDU Gr	Graph
Cycle		Valves			
	M	S1	S2	S3	
ACCUM.	●	●	○	○	
4WAY	○	○	○	○	
HEX Up	●	○	○	○	
HEX Down	○	●	●	●	
Receiver IN	○	○	○	○	
Receiver OUT	●	●	●	●	
Suction V/V	●	○	●	○	
INV1 heater	●	●	○	○	



Valve operation

Figure 33:

basic Info.	Valves	Actuator Info.	Sensors	IDU Gr	Graph
Actuator Info.1		Actuator Info.2			
	M	S1	S2	S3	
INV1 TGT/TRC	1/2	2/3	3/4	4/5	
INV2 TGT/TRC	3/4	4/5	5/6	6/7	
FAN1 Target	50	60	70	80	
FAN1 Trace	60	70	80	90	
FAN2 Trace	70	80	90	100	
MAIN EEV	136	144	152	160	
SUB EEV	144	152	160	168	



Actuator information

Figure 34:

basic Info.	Valves	Actuator Info.	Sensors	IDU Gr	Graph
Sensors		Electric			
	M	S1	S2	S3	
Air Temp.	79.3	77.9	76.5	75.2	
Suction Temp.	57.2	56.1	54.9	53.9	
Bubble Temp.	-47.9	-47.9	-47.9	-43.1	
Dew Temp.	-49.5	-49.5	-47.4	-45.4	
discharge temp. of INV 1	202.0	200.0	198.0	196.0	
discharge temp. of INV 2	200.0	198.0	196.0	194.0	
HEX Temp.	71.8	70.7	69.6	68.6	
Upper HEX	70.7	69.6	68.6	67.6	
Lower HEX	69.6	68.6	67.6	66.6	



Sensor information

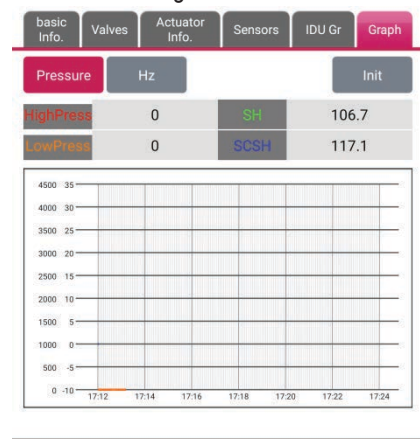
Figure 35:

basic Info.	Valves	Actuator Info.	Sensors	IDU Gr	Graph				
IDU Gr		HRU Info		More IdU Info					
	Capa	Mode	Flow	EEV	Air	Pipe In	Pipe Out	SC/SH	Add Info.
IDU1	2	○	≈	1027	135.49	32.36	125.88	-180.26	
IDU2	3	○	○	1284	128.04	125.88	120.42	-5.46	FAU
IDU3	4	○	≈	1541	121.93	120.42	115.70	-168.32	DXC
IDU4	5	○	○	1798	116.77	115.70	111.56	-4.14	Hydro. M
IDU5	6	○	≈	2055	112.31	111.56	107.87	-159.46	Hydro. H
IDU6	7	○	○	2312	108.38	107.87	104.56	-3.31	
IDU7	8	○	≈	2569	104.89	104.56	101.54	-152.46	FAU
IDU8	9	○	○	2826	101.74	101.54	98.79	-2.75	DXC
IDU9	10	○	≈	3083	98.88	98.79	96.24	-146.69	Hydro. M



IDU Gr

Figure 36:



Graph

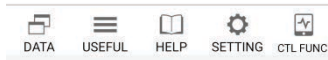
Main Screen- Basic Info Tab

Tap the **Basic Info** tab on the main screen to display its information (Figure 37). Information displayed will change according to the connected outdoor unit.

Figure 37:

basic Info	Valves	Actuator Info	Sensors	IDU Gr	Graph
HighPress Trace	0/0 16/49	Averaged IDU Temp.	65.60		
LowPress Trace	0/7 20/33	Compression ratio	1.00/0.94 0.97/1.12		
SH Trace	106.7/105.6 102.3/99.3	SC Trace	-114.5/-113.5 -112.6/-106.9		
SCSH Trace	117.1/116.1 113.0/110.1				

Name	Description	Name	Description
HighPress Trace	Current high pressure	Averaged IDU Temp.	Weighted average indoor temperature
LowPress Trace	Current low pressure	Compression ratio	Compression ratio
SH Trace	Current degree of super heat	SC Trace	Current degree of subcooling
SCSH Trace	Current degree of subcooling and super heat		



Basic information

Main Screen- Valve Tab

Tap the **Valves** tab on the main screen to display its information (Figure 38). This information is presented in two subscreens, Cycle and Valves.

Figure 38:

basic Info	Valves	Actuator Info	Sensors	IDU Gr	Graph
Cycle	Valves				
	M	S1	S2	S3	
ACCUM.	●	●	○	○	
4WAY	○	○	○	○	
HEX Up	●	○	○	○	
HEX Down	○	●	●	●	
Receiver IN	○	○	○	○	
Receiver OUT	●	●	●	●	
Suction V/V	○	○	○	○	
INV1 heater	●	●	○	○	

Name	Description	Name	Description
ACCUM.	Oil return valve	VI	Vapor Injection
4 WAY	4 WAY valve	INV1 heater	Inverter 1 heater
HEX Up	Heat exchanger top valve	INV2 heater	Inverter 2 heater
HEX Down	Heat exchanger bottom valve	HEX V/V	Heat exchanger valve
Receiver IN	Normal Close Valve	OIL LEVEL1	Oil level 1
Receiver OUT	Normal Open Valve	OIL LEVEL2	Oil level 2



Valve operation

OPERATION

Main Screen

Main Screen- Actuator Info Tab

The **Actuator Info** tab (Figure 39) displays operating parameters of various devices (compressors, fans, EEVs) in each outdoor unit frame. This information is displayed in two screens, **Actuator Info 1** and **Actuator Info 2**.

Figure 39:

	M	S1	S2	S3
INV1 TGT/TRC	1/2	2/3	3/4	4/5
INV2 TGT/TRC	3/4	4/5	5/6	6/7
FAN1 Target	50	60	70	80
FAN1 Trace	60	70	80	90
FAN2 Trace	70	80	90	100
MAIN EEV	136	144	152	160
SUB EEV	144	152	160	168

Actuator information

Name	Description	Name	Description
INV1 TGT/TRC	Inverter 1 target/current frequency	MAIN EEV	Main EEV
INV2 TGT/TRC	Inverter 2 target/current frequency	SUB EEV	Sub EEV
FAN Target	FAN target RPM	SC EEV	Subcooling EEV
FAN1 Trace	FAN1 current RPM	EQ EEV	Oil supply EEV
FAN2 Trace	FAN2 current RPM	VI EEV1	Vapor Injection EEV1
		VI EEV2	Vapor Injection EEV2

Main Screen- Sensors Tab/Sensors

The **Sensors** tab has two screens, **Sensors** and **Electric**. Tap the **Sensors** tab at the top of the main screen and then tap the **Sensors** tab below it. The screen displays the sensors data (Figure 40).

Figure 40:

	M	S1	S2	S3
Air Temp.	79.3	77.9	76.5	75.2
Suction Temp.	57.2	56.1	54.9	53.9
Bubble Temp.	-47.9	-47.9	-47.9	-43.1
Dew Temp.	-49.5	-49.5	-47.4	-45.4
discharge temp. of INV1	202.0	200.0	198.0	195.0
discharge temp. of INV2	200.0	198.0	196.0	194.0
HEX Temp.	71.8	70.7	69.6	68.6
Upper HEX	70.7	69.6	68.6	67.6
Lower HEX	69.6	68.6	67.6	66.6

Sensor information

Name	Description	Name	Description
Air Temp.	Outdoor air temperature	Lower HEX	Bottom heat exchanger pipe temperature
Suction Temp.	Compressor suction temperature	SC in Temp.	Subcooling inlet temperature
Bubble Temp.	Condenser temperature	SC out Temp.	Subcooling outlet temperature
Dew Temp.	Evaporator temperature	Liquid Temp.	Liquid pipe temperature
discharge temp. of INV1	Inverter 1 discharge temperature	INV1 IPM Temp	Inverter 1 IPM temperature
discharge temp. of INV2	Inverter 2 discharge temperature	INV2 IPM Temp	Inverter 2 IPM temperature
HEX Temp.	Heat exchanger pipe temperature	FAN Heatsink	Outdoor fan heat sink temperature
Upper HEX	Top heat exchanger pipe temperature		

Main Screen- Sensors Tab/Electric

The **Sensors** tab has two screens, **Sensors** and **Electric**. Tap the **Sensors** tab at the top of the main screen and then tap the **Electric** tab below it. The screen displays the electric data (Figure 41).

Figure 41:

	M	S1	S2	S3
INV1 Current	8.0	8.2	0.0	0.0
INV2 Current	8.4	8.6	0.0	0.0
INV1 Voltage	205	210	0	0
INV2 Voltage	215	220	0	0
INV1 powerFrq	44	45	0	0
INV2 powerFrq	45	46	0	0
INV1 phase CT	9.6	9.8	0.0	0.0
INV2 phase CT	10.0	10.2	0.0	0.0
FAN1 phase CT	5.2	5.3	0.0	0.0

Sensor information (Electronics information)

Name	Description	Name	Description
INV1 Current	Inverter 1 input current	INV1 phase CT	Inverter 1 phase current
INV2 Current	Inverter 2 input current	INV2 phase CT	Inverter 2 phase current
INV1 Voltage	Inverter 1 input voltage	FAN1 phase CT	Fan1 phase current
INV2 Voltage	Inverter 2 input voltage	FAN2 phase CT	Fan 2 phase current
INV1 powerFrq	Inverter 1 power frequency	FAN DC link	Fan DC LINK voltage
INV2 powerFrq	Inverter 2 power frequency	INV1 DC link	Inverter 1 DC LINK voltage
		INV2 DC link	Inverter 2 DC LINK voltage

Main Screen - IDU Gr

The **IDU Gr** tab has three screens, **IDU Gr**, **HRU Info**, and **More IDU Info** (Figure 42). Tap the **IDU Gr** tab at the top of the main screen and then tap the **IDU Gr**, **HRU Info**, or **More IDU Info** tab below it. The screen displays the selected data.

Figure 42:

	Capa	Mode	Flow	EEV	Air	Pipe In	Pipe Out	SC/SH	Add Info
IDU1	2		≈	1027	135.49	132.36	125.88	190.26	FAU
IDU2	3		⊙	1284	128.04	125.88	120.42	-5.46	FAU
IDU3	4		≈	1541	121.93	120.42	115.70	-168.32	DXC
IDU4	5		≈	1798	116.77	115.70	111.56	-4.14	Hydro. M
IDU5	6		≈	2055	112.31	111.56	107.87	-159.46	Hydro. H
IDU6	7		⊙	2312	108.38	107.87	104.56	-3.31	FAU
IDU7	8		≈	2569	104.89	104.56	101.54	-152.46	FAU
IDU8	9		⊙	2826	101.74	101.54	98.79	-2.75	DXC
IDU9	10		≈	3083	98.88	98.79	96.24	146.6	Hydro. M

IDU Gr

Name	Description	Name	Description
Capa	Indoor unit capacity	Pipe Out	Indoor pipe outlet temperature
Mode	Indoor unit operating mode	SC/SH	Degree of Subcooling/super heat
Flow	Indoor unit fan level	Add Info.	Indoor unit type information
EEV	Indoor unit EEV	Comm	Communication rate
Air	Indoor air temperature	CEN	Central control address
Pipe In	Indoor pipe inlet temperature	Error	Indoor unit error number

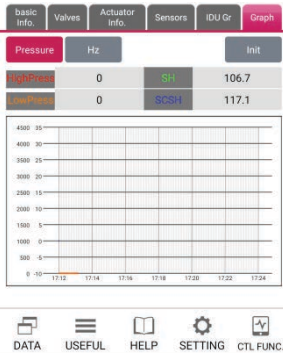
OPERATION

Main Screen

Main Screen - Graph

The **Graph** tab has two screens, **Pressure** and **Hz** (frequency). Tap the **Graph** tab at the top of the main screen and then tap the **Pressure** (Figure 43) or **Hz** (Figure 44) tab below it. The screen begins to graph the selected data.

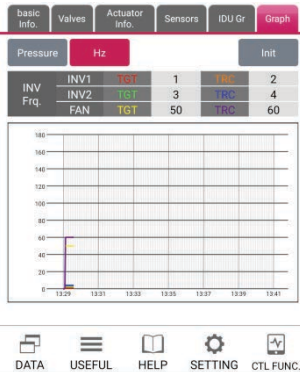
Figure 43:



Graph (Pressure)

Name	Description	Name	Description
HighPress.	Current high pressure	SH	Current degree of super heating
LowPress.	Current low pressure	SCSH	Current degree of super cooling/heating

Figure 44:



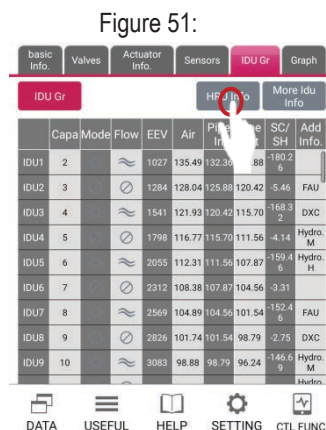
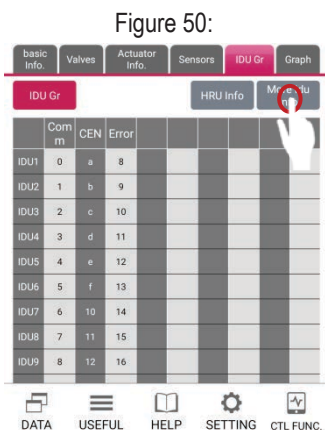
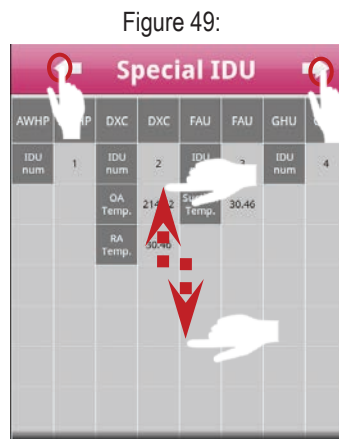
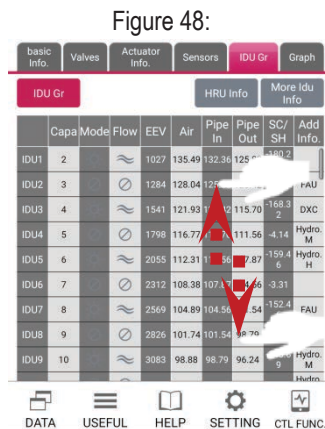
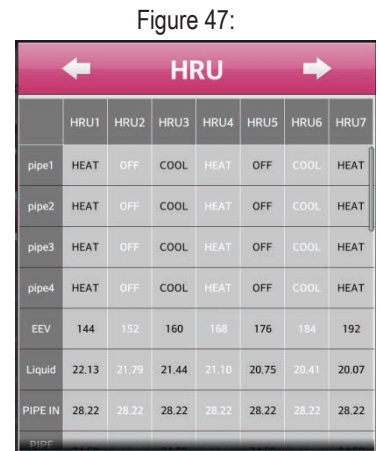
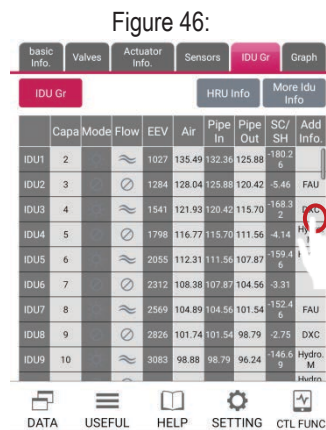
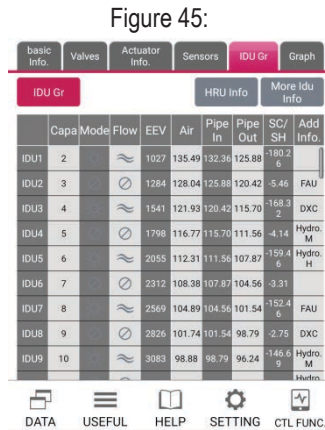
Graph (Frequency)

Name	Description
INV1	Inverter 1 frequency
INV2	Inverter 2 frequency
FAN	FAN RPM

How to use IDU Gr Displays

The IDU Gr displays show operating data for the indoor units connected to the monitored system. These steps are an example of selecting screens and displaying data.

1. Tap the **IDU Gr** tab (Figure 45). Indoor unit data is displayed.
2. Flick up/down through the IDU list to find the information of any particular IDU (Figure 48).
3. Tap the **More IDU Info** button to display additional data for that IDU (Figure 50).
4. If desired, tap the **More IDU** data to display the Special IDU data screen.
5. Special IDU information is displayed by IDU type. You can tap the arrows at the top of the screen to move to the previous or next IDU on the list (Figure 49).
6. If desired, tap the **HRU** button (Figure 50) to display heat recovery unit data (heat recovery systems only).
7. The HRU screen displays data for each heat recovery unit. You can tap the arrows at the top of the screen (Figure 47) to move to the previous or next HRU on the list (heat recovery systems only).



OPERATION

Data Menu

Popup Menu Selections

The buttons along the bottom of the screen display popup menus with additional command choices. The buttons are **DATA** (Figure 52), **USEFUL** (Figure 53), **HELP** (Figure 54), **SETTING** (Figure 55), and **CTL FUNC** (Figure 56).

Figure 52:



Figure 53:

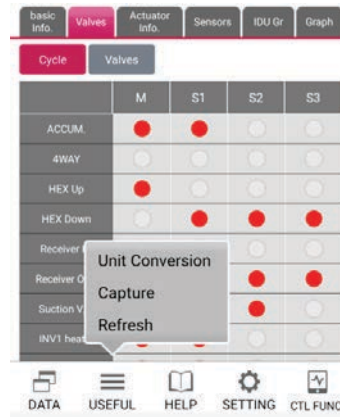


Figure 54:

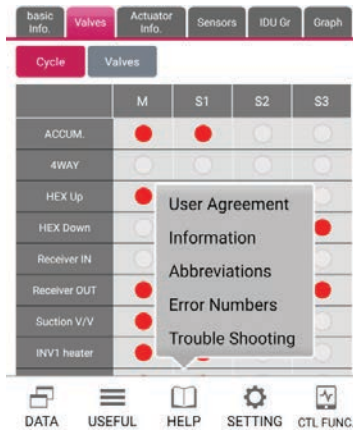


Figure 55:

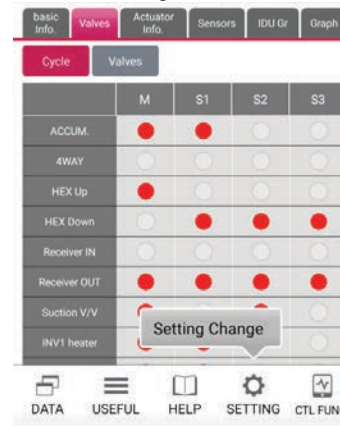
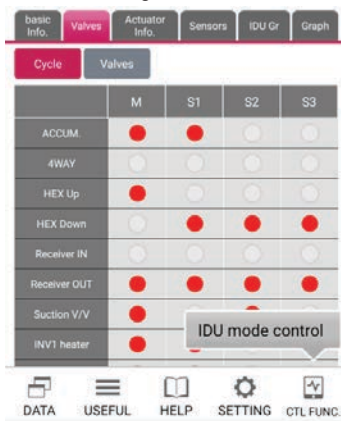


Figure 56:



Saving Data

You have the option of saving the data that Mobile LGMV displays. The default data saving parameters are 60 minutes at an interval of 2 seconds.

1. Tap the **DATA** button at the bottom of the screen. On the popup menu, tap **Data Saving Options** (Figure 57).
2. The Data saving options window displays. Enter the time in minutes to save data (Figure 58).
3. To change the time interval for saving data, tap the **Interval(Sec)** button (Figure 58).
4. The Save interval window displays. Tap the desired time interval and then tap **OK** (Figure 59).
5. The Data saving window displays again. Confirm the time and interval are as desired and tap the **OK** button (Figure 60).

Figure 57:



Figure 58:

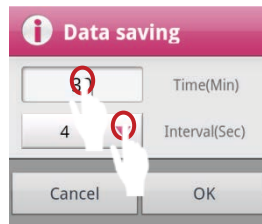


Figure 59:

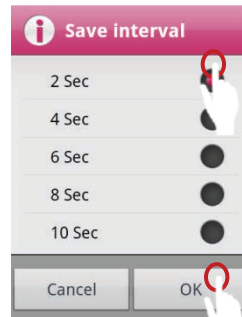
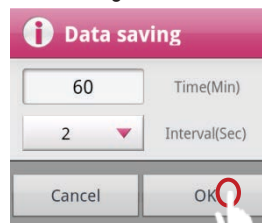


Figure 60:



OPERATION

Data Menu

Starting the Data Save

Before starting to save data, set the duration and interval as described in Saving Data on page 29. Follow this procedure to begin the capturing of data and saving data to a file on the smartphone. The default folder for saved data files is LGMV>Data. Data files captured by Mobile LGMV can be transferred to a personal computer with the PC version of LGMV, if desired.

1. Tap the **DATA** button at the bottom of the screen. On the popup menu, tap **Data Saving Options** (Figure 61).
2. The Data saving options window displays. Enter the duration in minutes to save data and tap **OK** (Figure 62).
3. To change the time interval for saving data, tap **DATA**, then tap Data saving options, and then tap the **Interval(Sec)** button.
4. The Save interval window displays. Tap the desired time interval and then tap **OK**.
5. The Data saving window displays again. Confirm the time and interval are as desired and tap the **OK** button. The **SAVE** indicator lights green (Figure 63).

Figure 61:

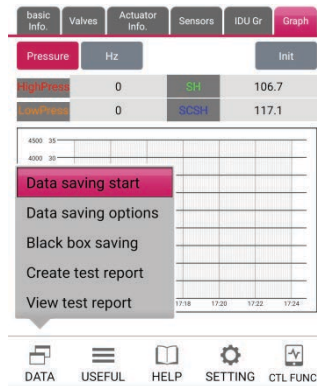


Figure 62:

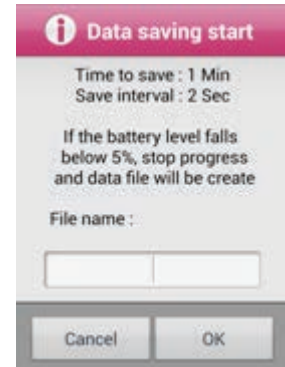


Figure 63:

OPS. Info	Product Info. ▼	State	Unit ▼
Mode : ❄️	MD : Multi V IV HR	Save : 🟢	°C
Error : 10-1	Ver : 2.3/...	RCV : 🟢	kPa
	EER : 4.5.6/...		kBtu/h

Black Box Data Saving

There is the option to perform Black box data saving. ODU models supporting this function are Multi V IV heat pump and heat recovery, Multi V Water IV heat pump and heat recovery, Multi V III heat pump and heat recovery, and Multi V S. The default folder for saved files is LGMV>BlackBoxData.

1. Tap the **DATA** button at the bottom of the screen. On the popup menu, tap **Black box saving** (Figure 64).
2. The Black box saving window displays. A progress bar indicates the data is being saved (Figure 65).

Figure 64:

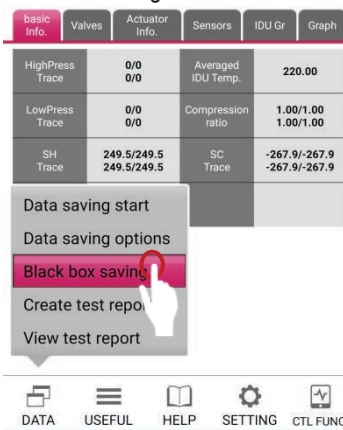
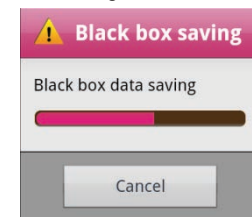


Figure 65:



Create Test Report

There is the option to create a test report. ODU models supporting this function are Multi V IV heat pump and heat recovery, and Multi V III heat pump and heat recovery. The default folder for saved files is LGMV>ITRData.

1. Tap the **DATA** button at the bottom of the screen. On the popup menu, tap **Create test report** (Figure 66).
2. The Create test report saving window displays. A progress bar indicates the ITR data is being saved (Figure 67).

Figure 66:

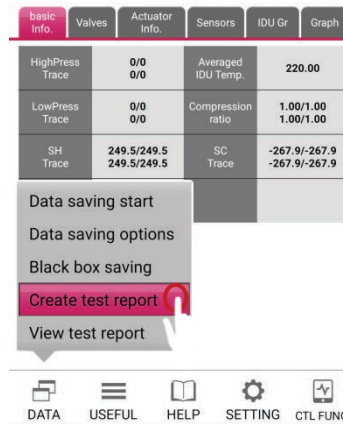
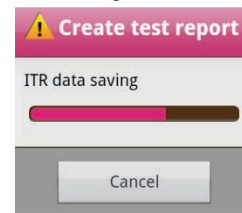


Figure 67:



OPERATION

Data Menu

View Test Report

There is the option to view a test report. The default folder for saved test report files is LGMV>ITRData.

1. Tap the **DATA** button at the bottom of the screen. On the popup menu, tap **View test report** (Figure 68).
2. The File open window displays showing all previously saved test reports. If necessary, flick up and down the list to display all report files. Tap the desired report file name and then tap **OK** (Figure 69).
3. The test report displays. Flick up, down, left, and/or right to display all areas of the report (Figure 70).
4. If desired, use two fingers to “pinch” in or out to zoom the display magnification (Figure 71). You can also use the **Add/Remove** button at the bottom right to zoom in or out.

Figure 68:

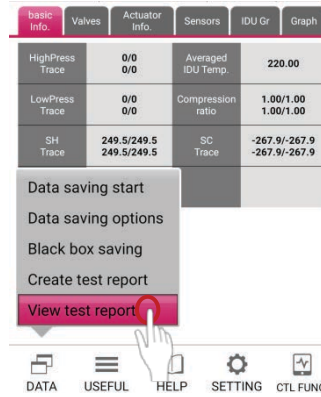


Figure 69:

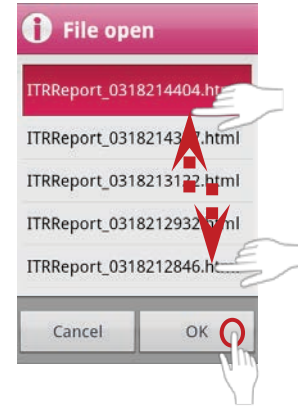


Figure 70:

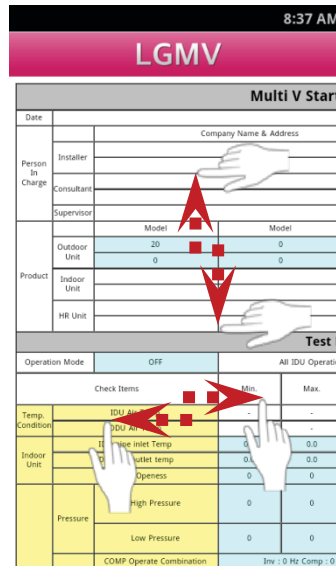
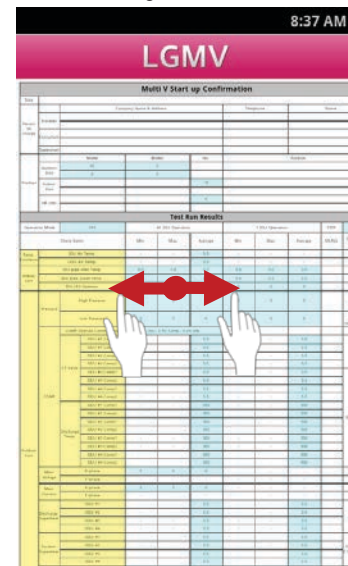


Figure 71:



Unit Conversion

The USEFUL popup menu contains options for setting data units, capturing smartphone screenshots, and refreshing the data display on the smartphone.

1. To select the unit of measure for displayed data, tap **USEFUL**. The USEFUL popup menu displays (Figure 72).
2. Tap **Unit Conversion**. The Unit Conversion window displays (Figure 74).
3. Tap the desired unit of measure for temperature (°C or °F), pressure (kPa or psi), and unit capacity (kW or kBtu/h) (Figure 74).
4. When unit selection is complete, tap **SET** (Figure 74).
5. Observe the units displayed in the top right of the screen change to the selected units (Figure 73). The data units of all data displayed on screen change to the selected units.

Figure 72:

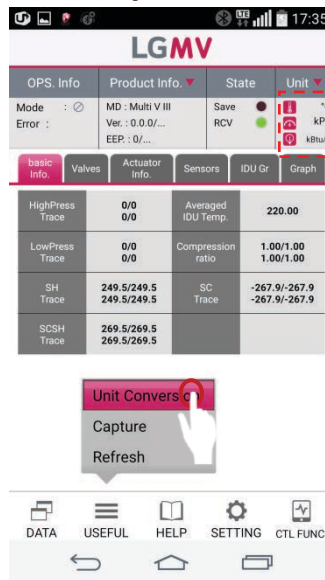


Figure 73:

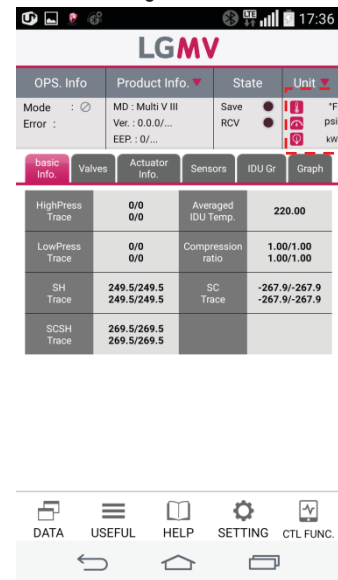
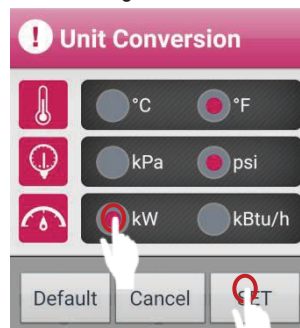


Figure 74:



OPERATION

Useful Menu

Capture

Use the Capture command on the USEFUL popup to capture the smartphone screen display to a graphics file. The capture files are saved in the LGMV>Capture folder.

1. To capture the current smartphone display tap **USEFUL**. The USEFUL popup menu displays (Figure 75).
2. Tap **Capture**. The current smartphone screen display is saved in a graphics file. The capture is complete when the Image is captured popup message is displayed (Figure 76).

Figure 75:

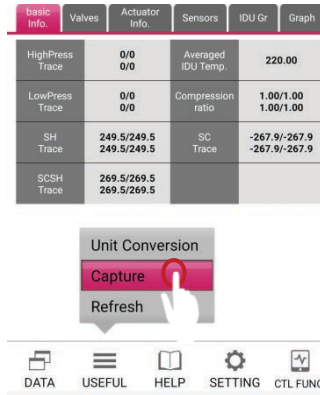
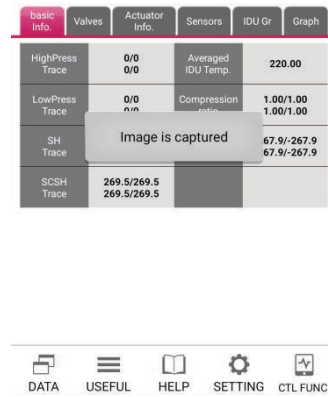


Figure 76:



Refresh

Use the Refresh command on the USEFUL popup to refresh the smartphone's data display.

1. To refresh the data display, tap **USEFUL**. The USEFUL popup menu displays (Figure 77).
2. Tap **Refresh**. The smartphone screen display is refreshed with current data (Figure 78).

Figure 77:

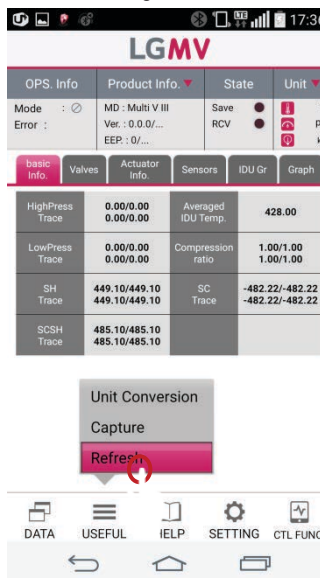
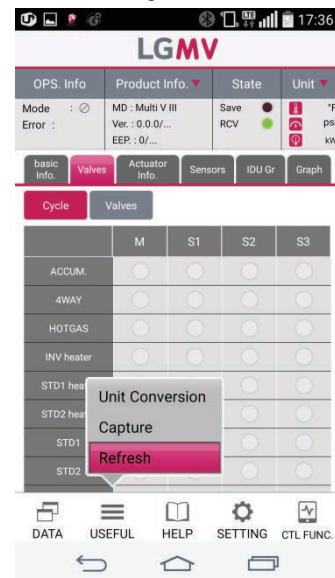


Figure 78:



Information and Abbreviations

The HELP menu contains selections for Mobile LGMV information and abbreviations used on LGMV displays.

1. To display the Information window, tap **HELP**. The **HELP** popup menu displays (Figure 79).
2. Tap **Information** on the popup menu. The Information window displays. This window shows the LGMV software version number (Figure 80).
3. Tap **OK** when done.
4. To display the Abbreviations window, tap **HELP**. The **HELP** popup menu displays (Figure 81).
5. Tap **Abbreviations** on the popup menu. The Abbreviations window displays. Flick up/down this list to display all entries (Figure 82).
6. Tap **OK** when done.

Figure 79:

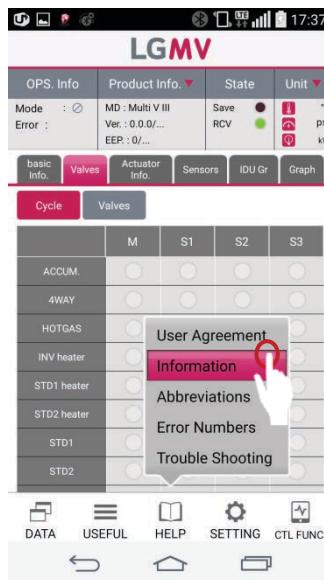


Figure 80:

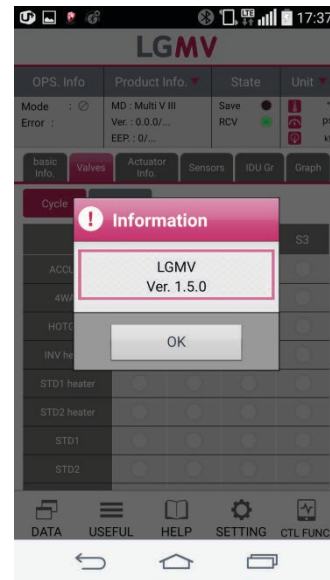


Figure 81:

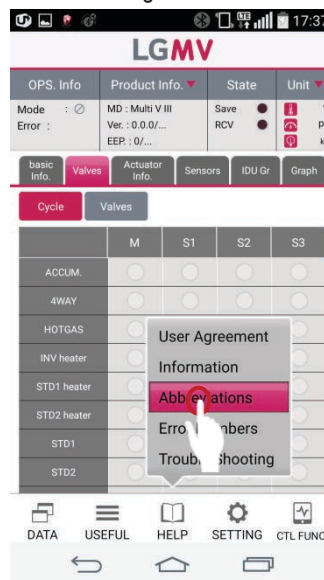
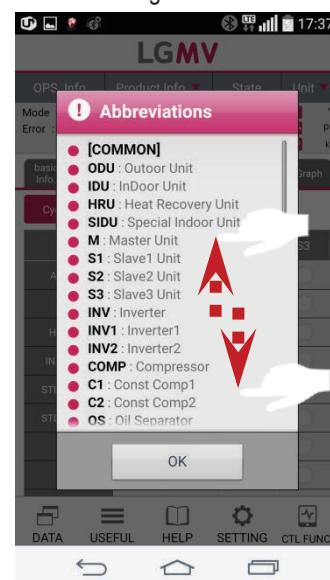


Figure 82:



OPERATION

Help Menu

Information and Abbreviations

The HELP menu contains selections for Mobile LGMV information and abbreviations used on LGMV displays.

1. To display the troubleshooting guide, tap **HELP**. The HELP menu displays (Figure 83).
2. Tap **Trouble Shooting**. If the troubleshooting guide has not yet been downloaded, a popup message will direct you to download the guide (Figure 84). Refer to Downloading the Troubleshooting Guide.
3. If the troubleshooting guide is already downloaded, a popup message will direct you to the appropriate page of the guide (Figure 85).
4. Go to the indicated page for information on the current error. Read and follow the troubleshooting information on the indicated page(s) (Figure 86).

Figure 83:

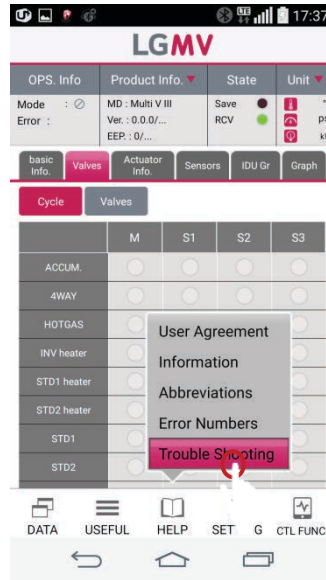


Figure 84:

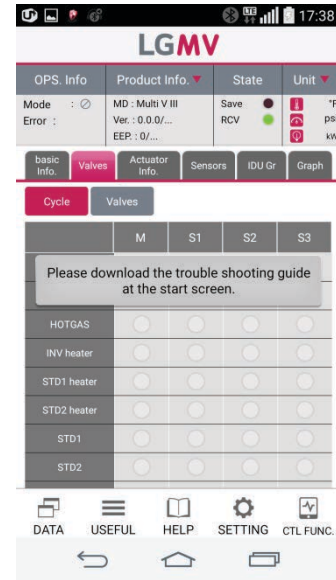


Figure 85:

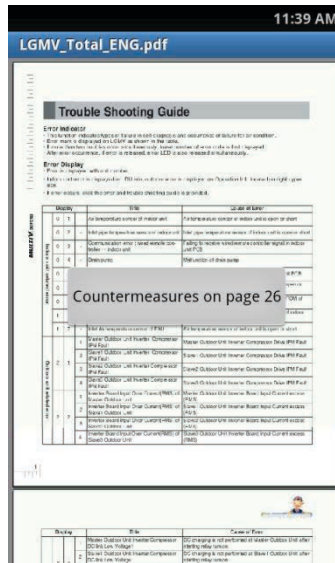
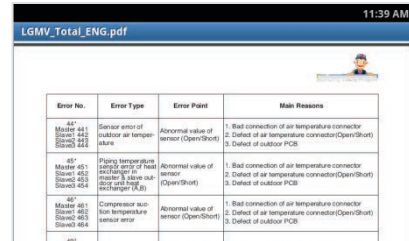


Figure 86:



Download Troubleshooting Guide

The troubleshooting guide is not included in the app installation; it must be downloaded separately. Download the guide to the smartphone before connecting the smartphone to the Mobile LGMV wifi module.

1. Ensure the Mobile LGMV app is installed on the smartphone.
2. Start the Mobile LGMV app. The connection method screen is displayed (Figure 87).
3. Tap **Download trouble shooting guide** at the bottom of the screen (Figure 87). The Trouble shooting guide list screen is displayed (Figure 88).
4. Tap the check box(es) for the guide(s) you want to download (Figure 88).
5. Tap the **OK** button (Figure 89). The Download progress window is displayed (Figure 90).

Figure 87:

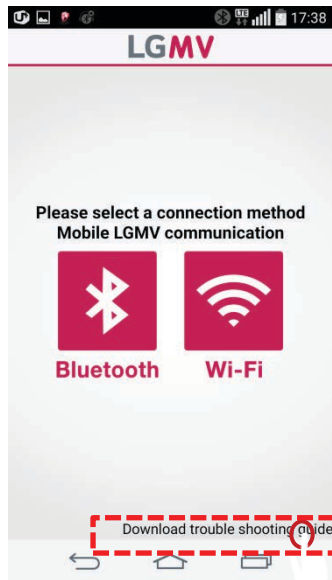


Figure 88:

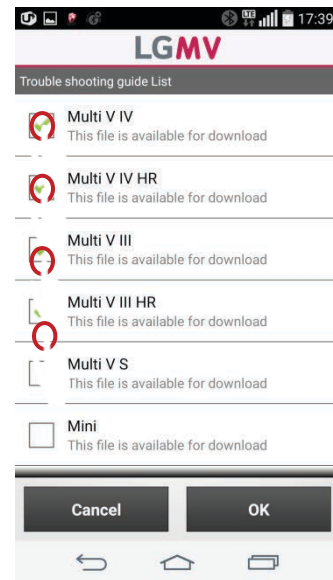
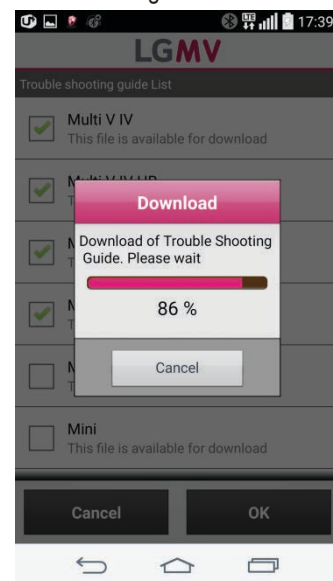


Figure 89:



Figure 90:



OPERATION

Setting Menu

Setting Change

Setting Change allows you to define the system configuration under test (number and type of outdoor units, number of indoor units, and site description).

1. To display Setting Change, tap **SETTING** at the bottom of the screen. The Setting Change menu displays (Figure 91).
2. Tap **Setting Change**. The Model Select screen displays (Figure 92).
3. Tap the **MODEL** dropdown to select the model type being tested (Figure 92).
4. Tap the **Product Combination** button. The Product combi. window displays (Figure 93).
5. Tap the number (1 to 4) corresponding to the number of frames of the outdoor unit, and then tap **OK** (Figure 93).
6. Tap the **No. of IDUs** button (Figure 92). The No. of IDUs window displays (Figure 94).
7. Enter the number of indoor units in the system being tested and then tap **OK** (Figure 94).

Figure 91:

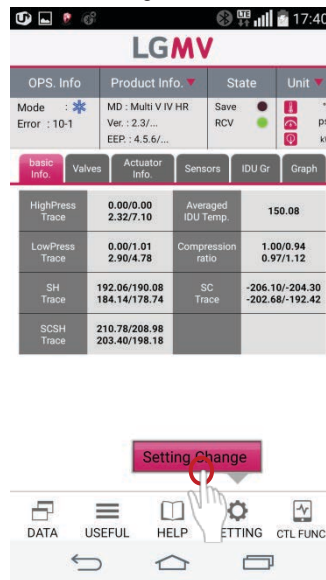


Figure 92:



Figure 93:

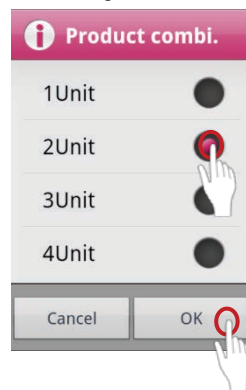
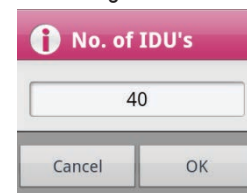


Figure 94:



Lost Wifi Communication

If communication between the smartphone and the wifi module is lost, you can reestablish the link.

1. Tap **SETTING** at the bottom of the screen. The Setting Change menu is displayed (Figure 95).
2. Tap **Setting Change**. If wifi communication has been lost, the communication method selection screen will display (Figure 96).
3. Tap the **Wi-Fi** icon on the screen and reestablish communication with the wifi module (Figure 96).

Figure 95:

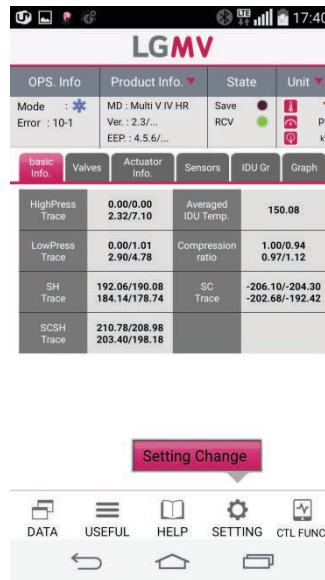
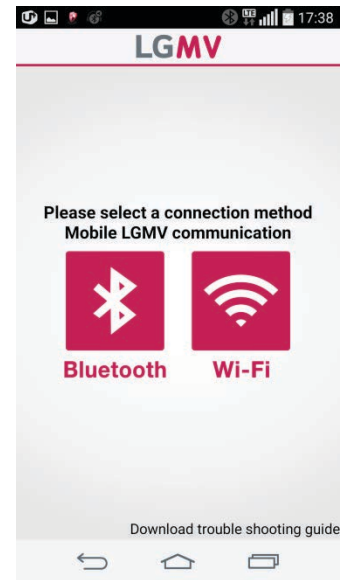


Figure 96:



OPERATION

IDU Operation

IDU Mode Control

The IDU Mode Control screen allows you to turn on and off and set operating parameters for indoor units of the system being tested. From one to a group of up to 16 IDUs can be controlled at a time.

1. Tap the **CTL FUNC** button at the bottom of the screen. The IDU mode control menu is displayed (Figure 97).
2. Tap **IDU mode control**. The indoor unit control screen is displayed (Figure 98).
3. Refer to IDU Mode Control Screen Description for information on this screen's controls.

Figure 97:

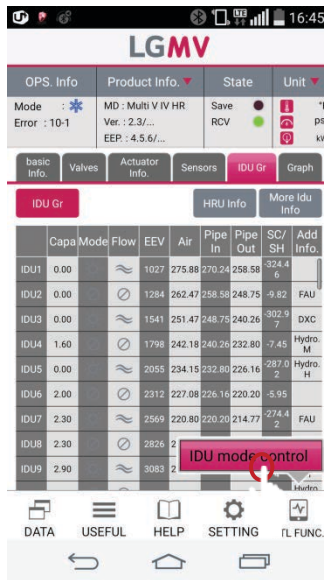
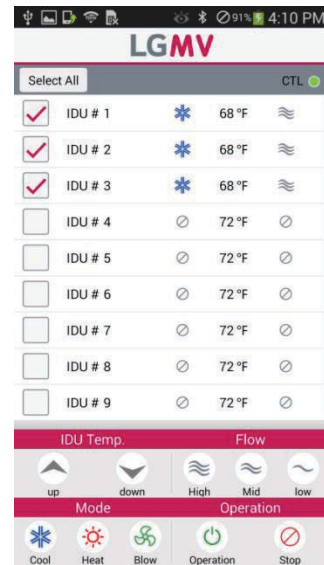


Figure 98:

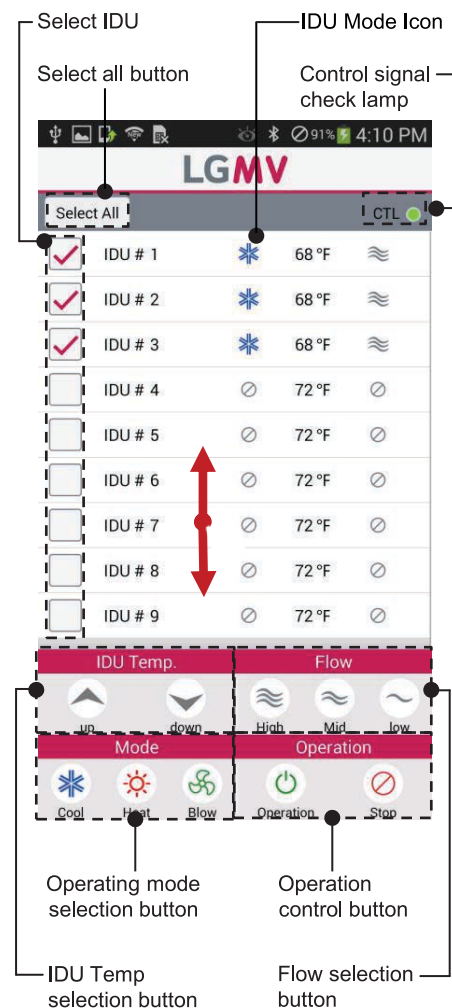


IDU Mode Control Screen Description

Refer to the table below for information on the controls and indicators of the IDU Mode Control Screen (Figure 99). Indoor units can be controlled individually or in a group of up to 16.

Control/Indicator	Description
Select All button	Tap Select All to select all indoor units displayed on screen. The Select All button then changes to Deselect All. Tap again to deselect all selected indoor units.
Select IDU	Tap an indoor unit's check box to select the unit. Tap a checked box to deselect the unit.
IDU Mode Icon	Displays an icon to indicate the current operating mode of the IDU: Cool, Heat, Blow (fan), or Off.
Control signal check lamp	The control signal check lamp flashes three times after the operation control button is tapped.
Operation control button	Press Operation to start or Stop to stop the selected indoor unit(s).
Flow selection button	Press High, Mid, or Low button to select air flow for the selected indoor unit(s).
IDU Temp selection button	Press the up or down arrow to raise or lower a setpoint for the Indoor unit.
Operating mode selection button	Press Cool, Heat, or Blow to set the operating mode for the currently selected indoor unit(s).

Figure 99:



OPERATION

IDU Operation

IDU Control Example

The IDU Mode Control screen allows you to turn on and off and set operating parameters for indoor units of the system being tested. From one to a group of up to 16 IDUs can be controlled at a time.

1. Select the indoor unit(s) (Figure 100).
2. Select the operating mode (Figure 101).
3. Tap the **Operation** button to send the selected commands to the indoor unit(s) (Figure 102).
4. When finished with indoor unit operation, press the back button on the smartphone to return to the previous Mobile LGMV screen (Figure 103 and Figure 104).

Figure 100:

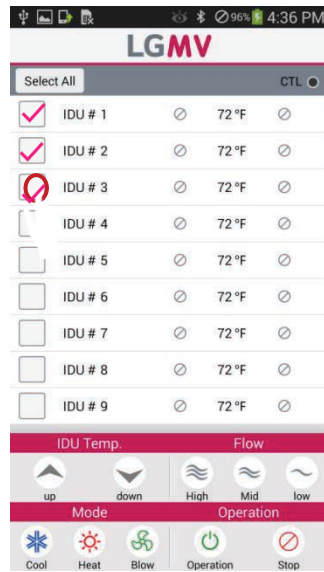


Figure 101:



Figure 102:

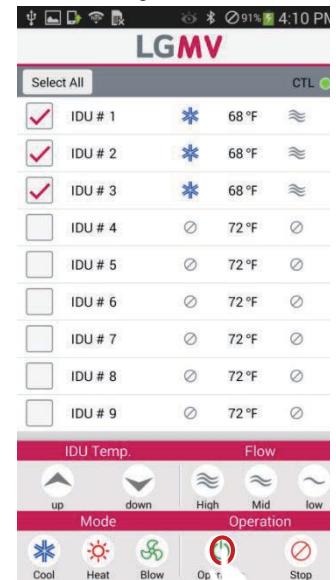


Figure 103:

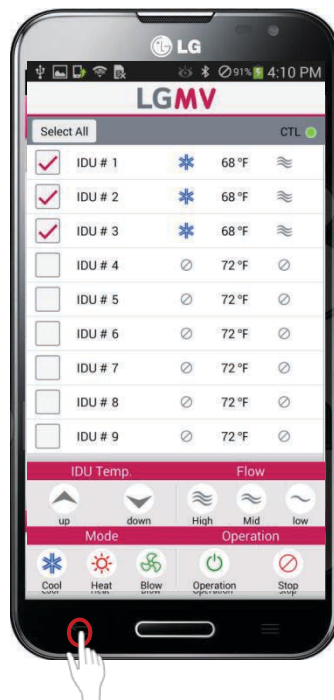
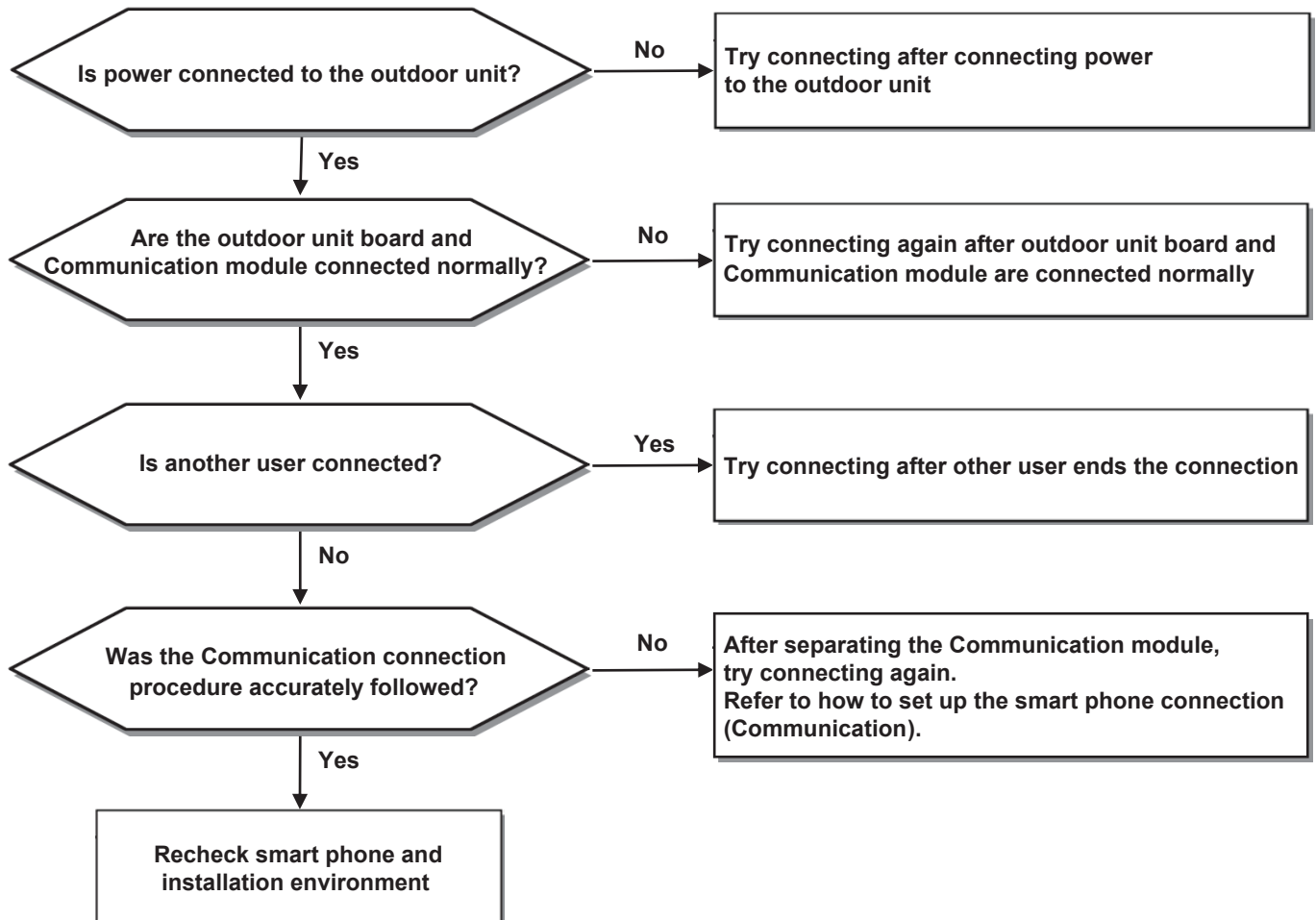


Figure 104:



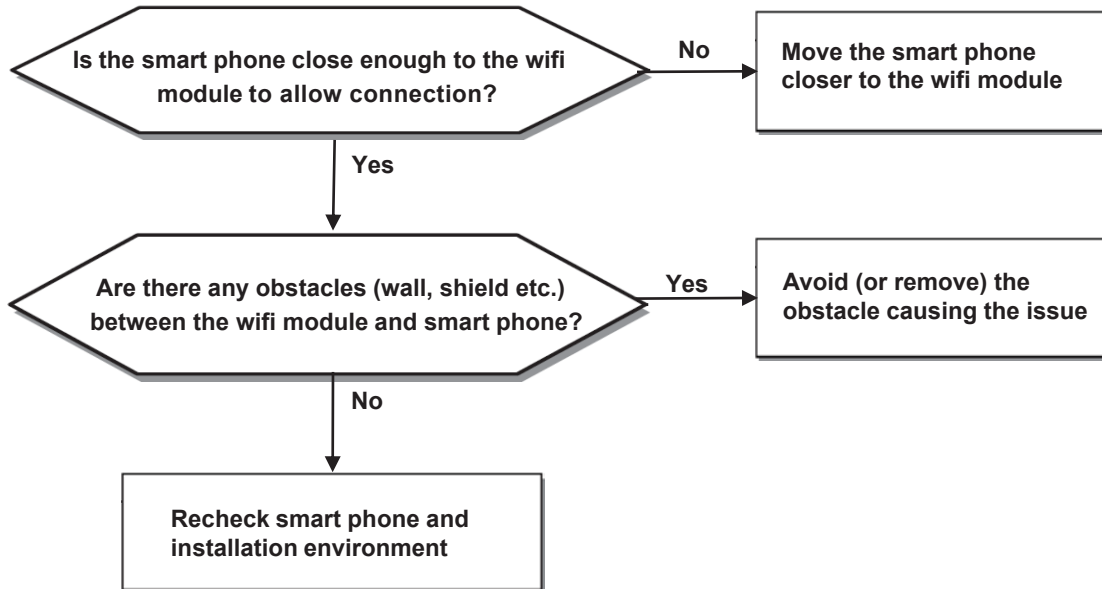
Smartphone and Wifi Module will not Connect



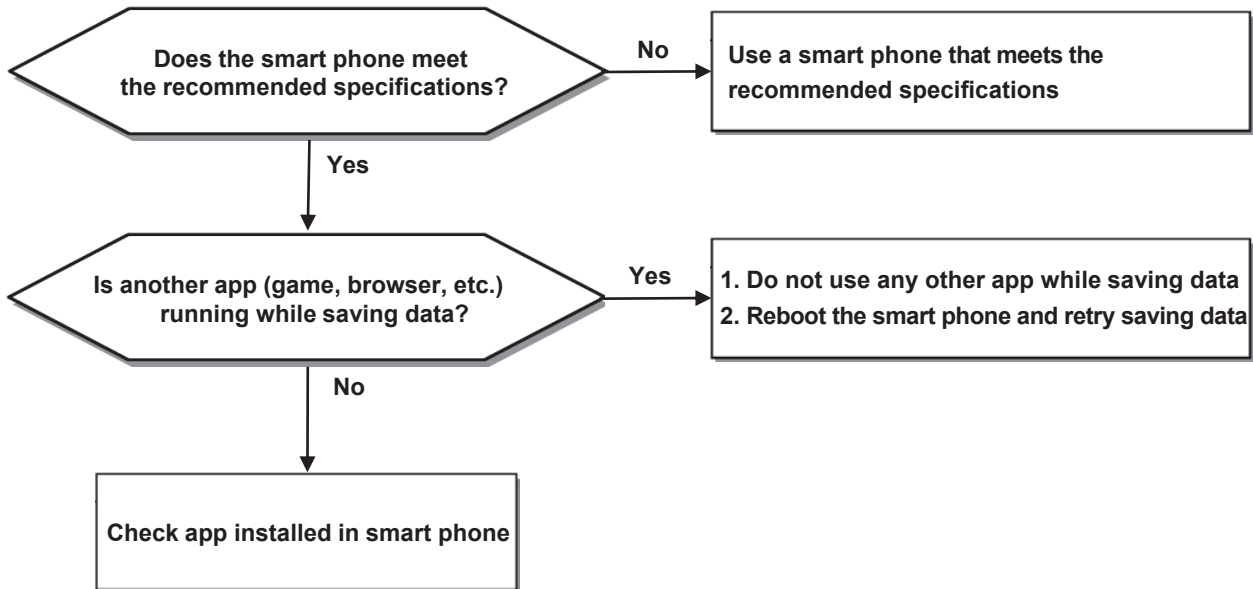
OPERATION

Troubleshooting

Smartphone and Wifi Module lose Connection during Operation



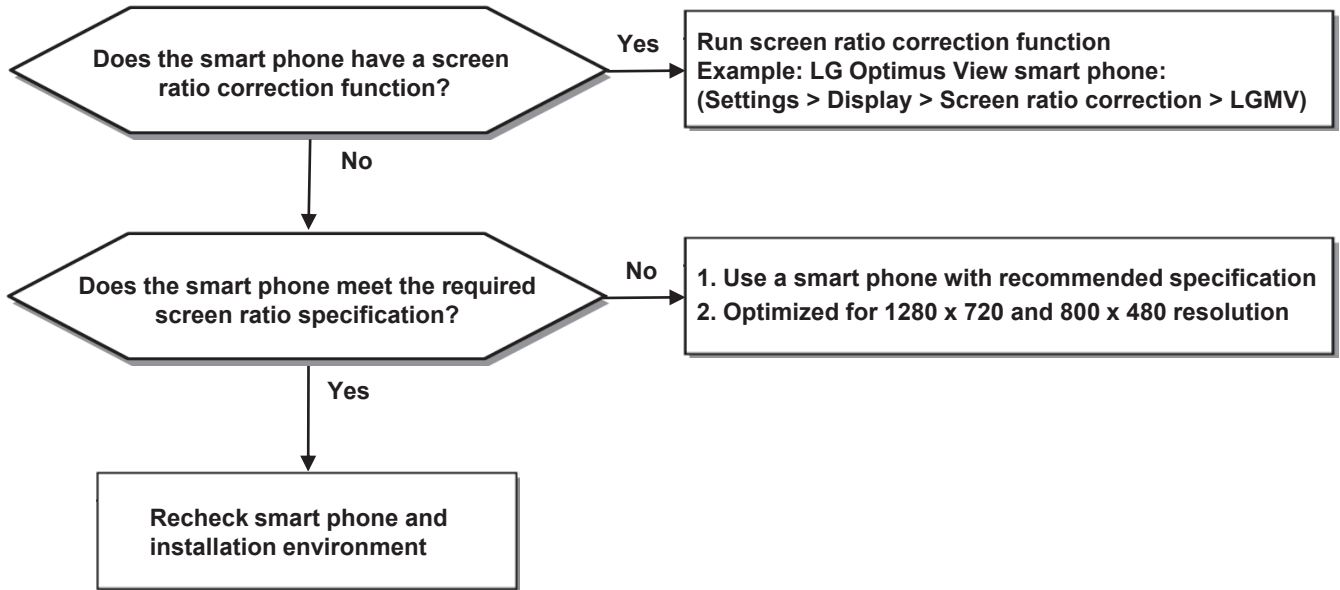
Time Gap in Saved Data



OPERATION

Troubleshooting

Part of Smartphone Screen not Visible or Looks Wider







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UM_MobileLGMV_Android_9_15
Supersedes UM_MobileLGMV_Android_8_15