## Better Music Builder®.com



## **Professional UHF Wireless Microphone System**

## **VM-52U G5**



## **Operating Instructions**



2-in-1 Base Module \*\*\*1 Receive Module with 2 Wireless Microphones System

Thank you for purchasing this unit. To make full and effective use of this unit, please read this Owner's Manual carefully before operating it. Please retain this manual for future reference.

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Better Music Builder's newest set of wireless microphones VM-52U G5 are a huge improvement from the previous models, and greatly focusing on ease of use and satisfaction.

The VM-52U G5 receiver is equipped with newer technologies that allow a stronger signal strength and overall a greater range. The VM-52U G5 is equipped with a more accurate IR sensor that makes selecting frequencies much easier, reducing connectivity issues to a minimum. The handheld microphones now have real-time battery indicators that updats frequently. A new, unique machine etched design is added to the VM-52U G5 handheld microphones for a better grip and feel.



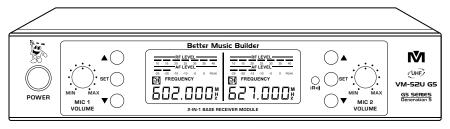
## SYSTEM FEATURES

- Smart Sensor integrated onto microphones.
- Auto-Mute Mode activates upon impact.
- Energy-efficient Sleep Mode.
- Equipped with the latest wireless technology UHF dual-channel 2-in-1 Base Module.
- Clear LCD screen displaying Radio Frequency Level, Audio Frequency Level, Frequency, Channel, Mute, and Lock.
- Wireless Infrared Auto Sync System.
- Manual and Auto Frequency Select.
- 200 selectable channels.
- Clear Voice technology delivers crystal clear sound.
- Adjustable antennas for better signal receiving.
- AA battery usage for easy handling.
- Up to 8 hours of battery life.
- Rack mountable.

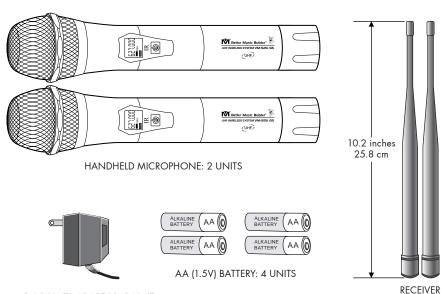


## **PACKAGE ACCESSORIES**

The package comes with (1) 2-in-1 Base Module [Receiver], (2) handheld microphones, (2) receiver antennas, (1) DC power adaptor, (1) unbalanced audio 1/4" cable, and (4) AA batteries.

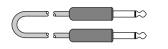


2-IN-1 BASE MODULE [RECEIVER]: 1 UNIT



DC POWER ADAPTOR: 1 UNIT

NOTE ➤ DC-POWER USAGE: This wireless microphone system is designed specifically for North America that uses 120V for DC power. For usage in Asia or Europe, please change it to 220V by an adaptor with DC 14V output 500mA.



ANTENNA: 2 UNITS

AUDIO CABLE (FOR MIXED OUTPUT): 1 UNIT

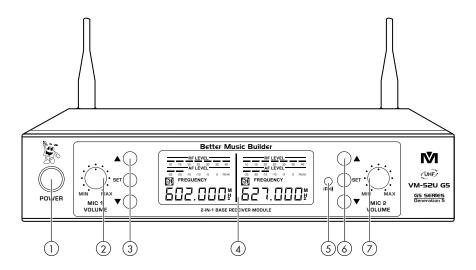


For better connection, XLR to XLR cable is recommended.



## 2-in-1 BASE MODULE [RECEIVER]

## **CONTROLS AND FUNCTIONS**

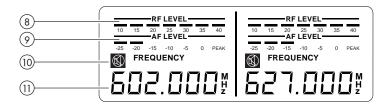


#### **FRONT PANEL:**

- 1. POWER BUTTON: Turns the system on/off.
- 2. MIC 1 VOLUME CONTROL: Controls Microphone 1 volume.
- 3. MIC 1 SELECTOR BUTTONS (UP/SET/DOWN): Allows control of LCD screen and functions for Microphone 1.
- 4. LCD SCREEN: Displays system status.
- 5. IR PORT: Infrared port for the Wireless Infrared Auto Sync System. Pointing the handheld microphone's infrared port at the receiver's infrared port to allow communication.
- 6. MIC 2 SELECTOR BUTTONS (UP/SET/DOWN): Allows control of LCD screen and functions for Microphone 2.
- 7. MIC 2 VOLUME CONTROL: Controls Microphone 2 volume.

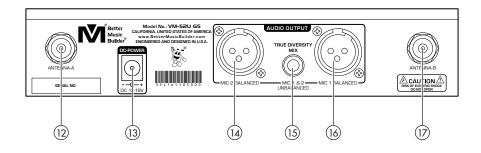
#### **LCD PANEL:**

After turning on the "POWER", LCD screen will display the following:



- 8. RADIO FREQUENCY LEVEL: Strength indicator of radio signal.
- 9. AUDIO FREQUENCY LEVEL: Strength indicator of incoming audio signal.
- 10. MUTE: Indicates if microphone is powered off.
- 11. FREQUENCY & CHANNEL: Displays current frequency and channel.

#### **REAR PANEL:**



- 12. ANTENNA-A: Connect the antenna to the BNC socket.
- 13. POWER SUPPLY: For power adapter with DC12~18V 500mA.
- 14. MIC 2 BALANCED OUTPUT: Balanced XLR audio output.
- 15. MIXED OUTPUT: Unbalanced 1/4" audio output for MIC 1 & MIC 2.
- 16. MIC 1 BALANCED OUTPUT: Balanced XLR audio output.
- 17. ANTENNA-B: Connect the antenna to the BNC socket.



#### **HOW TO CONNECT AUDIO OUTPUT:**

There are three rear audio outputs as shown in the below diagram:

## 1. Mic 2 Balanced Output

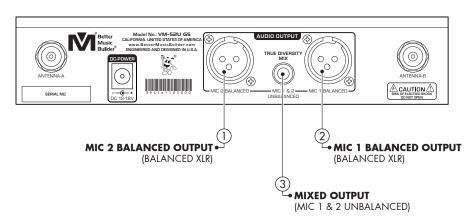
Mic 2 Balanced Output is balanced audio output for MIC 2 using XLR connection. When using this output, you can control MIC 2 effects without affecting MIC 1 effects.

## 2. Mic 1 Balanced Output

Mic 1 Balanced Output is balanced audio output for MIC 1 using XLR connection. When using this output, you can control MIC 1 effects without affecting MIC 2 effects.

## 3. Mixed Output

Mixed Output is unbalanced audio output for MIC 1 & MIC 2 using 1/4" connection. When using this output, MIC 1 and MIC 2 are sharing one signal. To produce different effects on the two microphones, MIC 1 and MIC 2 need independent signals using separate XLR connections.



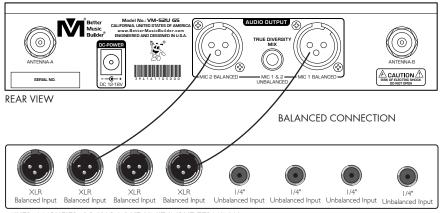


We highly recommend using balanced XLR connections if the distance between the microphone receiver and the mixer is more than 10 feet. The grounding of the balanced XLR connection delivers better quality signal by reducing noise.

#### **UHF WIRELESS SYSTEM DIAGRAM:**

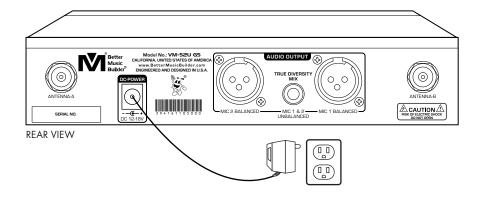






MIXER AMPLIFIER OR KARAOKE UNIT INPUT TERMINAL

#### **HOW TO CONNECT DC-POWER:**



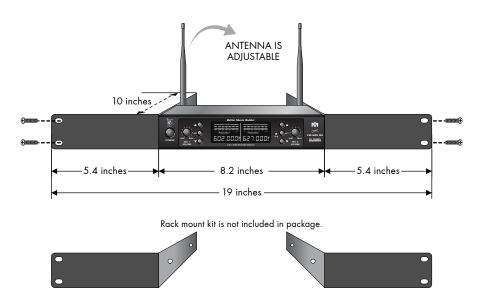
For North America Market, use 120V, DC 12~18V 300mA~500mA power adaptor. For Asia or Europe, use 220V~ 240V DC power adaptor with a maximum battery capacity of 300mA~500mA.

NOTE Please make sure to use the correct DC power adaptor. Otherwise, it may damage the 2-in-1 Base Module and/or the charger because their maximum battery capacity is different. The warranty will be voided if product is damaged using the wrong DC power adaptor.

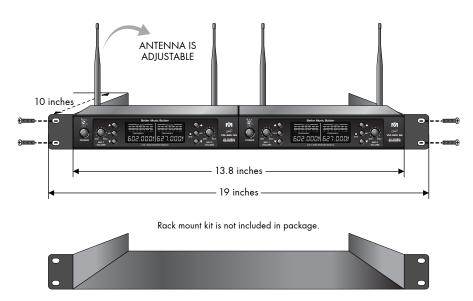
## **OPTIONAL 19" RACK MOUNT KIT:**

To put the system onto one of the mount kits, please follow the diagram below.

## Single Receiver Rack Mount Kit



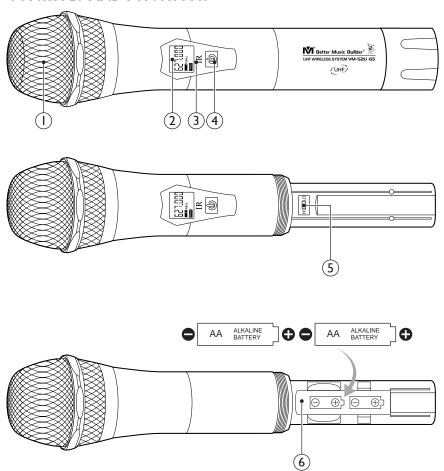
## **Dual Receiver Rack Mount Kit**





## **HANDHELD MICROPHONE**

## **CONTROLS AND FUNCTIONS**



- 1. INTERCHANGEABLE MICROPHONE HEAD
- 2. LCD DIGITAL DISPLAY: Displays frequency, and battery status.
- 3. IR PORT: Infrared port for the Wireless Infrared Auto Sync Technology. Point the microphone's infrared port at the receiver's infrared port to allow communication.
- 4. POWER BUTTON
- 5. TRANSMISSION POWER LEVEL SWITCH
- **6. BATTERY COMPARTMENT:** Insert 2x1.5V AA battery or 2x1.2V rechargeable AA battery.

#### LCD PANEL:

After turning on the "POWER", the LCD screen will light up as below:



- 1. FREQUENCY: Current value depends on setting.
- 2. BATTERY STATUS: Indicates battery life.

### **BATTERY STATUS:**

## Full Battery

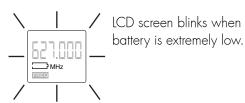


Indicates full battery on the microphone. A full battery lasts up to 8 hours.

## Low Battery



Indicates low battery on the microphone. When the microphone LCD screen is blinking. it's time to replace the batteries.



NOTE Batteries are not covered under our product warranty.

## **AUTO-POWER OFF SYSTEM FEATURES**

This function's primary focus is to eliminate unwanted noise while being energy efficient. To do so, the microphones are equipped with a Smart Sensor.

#### **FEATURES:**

## 1. Energy Saving

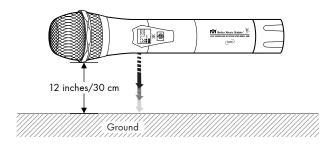
The microphone minimizes power consumption by entering Sleep Mode after 20 seconds, allowing for more usage time without changing batteries.

### 2. Anti-Howl & Noise

To eliminate unwanted noise when the microphone is dropped, the six-axis gyroscope sensor is used to detect a fast change in motion. The sensor detects whether the motion is intended or not by the elapsed time it is falling. When the time exceeds an estimated drop, the microphone signal then cuts off momentarily; so at the point of impact the microphone is no longer sending any signal to the receiver.

#### 3. Auto-Power Off

The microphone detects and automatically shuts off when it is dropping. This function can avoid most unwanted noise and greatly decrease the chances of any damage to the audio equipment. It is important to note the Auto-Power Off function will engage once the sensor detects a falling motion. The approximate falling distance for the sensor to activate is 12 inches/30 cm.



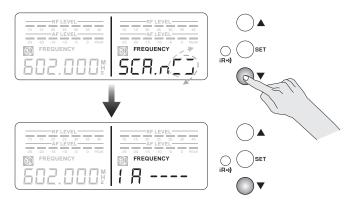


## HOW TO SELECT FREQUENCIES/CHANNELS FOR THE RECEIVER

The 2-in-1 Base Module comes with two handheld microphones and each microphone is preset with 100 frequency channels. The frequency can be selected either automatically or manually.

### 1. AUTOMATIC FREQUENCY/CHANNEL SELECT

Press and hold "DOWN ▼" until "SER.acs" displays. Then the best frequency will be selected.

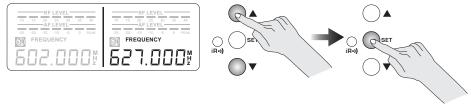


## 2. MANUAL FREQUENCY/CHANNEL SELECT

**STEP 1:** Press and hold "UP ▲" on the receiver untile the channel blinks.

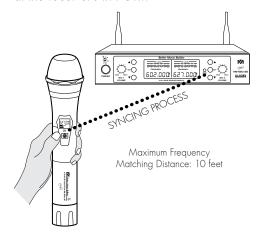


**STEP 2:** While the channel is blinking, press "UP  $\blacktriangle$  or DOWN  $\blacktriangledown$ " to select the desired channel. Then press "SET" to confirm the channel.



### HOW TO MATCH RECEIVER'S FREQUENCY WITH MICROPHONE

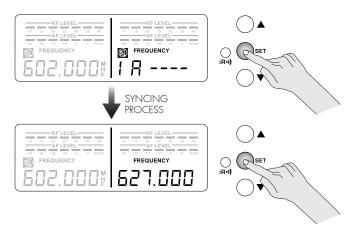
**STEP 1:** Turn ON the microphone, point the microphone infrared port (IR) directly at the receiver's IR PORT.



NOTE Please make sure that the other handheld microphone is powered off when adjusting the frequency on one microphone.

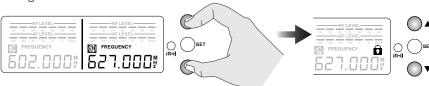
Each unit is fully tested and qualified by the manufacturer. However, due to the nature of wireless connection, interference may occur because of local environments and/or radio signals emitted by other wireless devices within the household.

**STEP 2:** Press and hold "SET" until "1A ----" displays. Once syncing is completed, the RF level bar appears and the "MUTE" icon disappears.



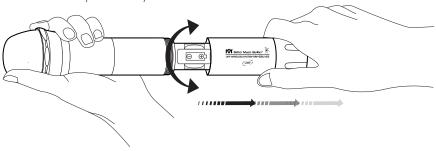
## HOW TO LOCK/UNLOCK THE DISPLAY

Press and hold "UP  $\blacktriangle$ " and "DOWN  $\blacktriangledown$ " at the same time to lock/unlock the setting.

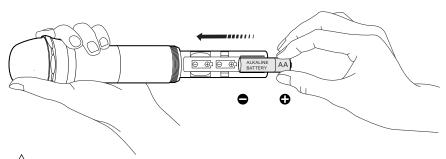


## **HOW TO CHANGE BATTERIES**

**STEP 1:** Twist open battery cover.



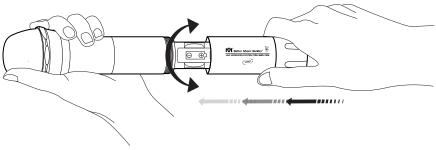
**STEP 2:** Use one hand to hold onto the top of the microphone and the other hand slide two AA batteries into battery compartment.



Make sure to follow the polarity of the battery according to the diagram on battery compartment.



**STEP 3:** Twist back battery cover.



# TECHNICAL SPECIFICATIONS

## A. TECHNICAL FEATURE OF THE 2-IN-1 BASE MODULE (Receiver):

• Channel: 200 Channels

• Frequency Range: UHF 480.100~529.850 MHz

Modulation Method: π/4 -DQPSK

Sampling Ratio: 48kHz

• Transmission Rate: 204.8Kbps

• Dynamic Range: > 90dB

• Total Harmonic Distortion: < 0.1%

• Delay Time of Audio Transmission: <3ms

• S/N Ratio: >96dB

• Frequency Response: 30~20kHz

RX Sensitivity: < -94dBm</li>
Unique ID Address: YES
Audio Output: 2 x XLR Port

 Power Supply: DC 12V~18V with 500mA, AC 120V (For 220V, change to a 220V~240V DC power adaptor)

• Receiver Dimensions (WxHxD): 8.7 x 2 x 7.1 (inches) / 22 x 5 x 18 (cm)

Package Dimensions (WxHxD): 15.6 x 12.2 x 2.7 (inches) / 39.5 x 31 x 6.8 (cm)

• Shipping Weight: 4.6 lbs / 2.1 kg

## **B. THIS SYSTEM INCLUDES THE FOLLOWING:**

• 2-in-1 Base Module [Receiver]: 1 Set

• Handheld Microphone: 2 Sets

• DC Power Adaptor: 1 Unit

• 1/4" Audio Cable: 1 Unit

Receiver Antenna: 2 UnitsAA 1.5V Battery: 4 Units

• Instructional Manual: 1 Unit

• Warranty & Registration Card: 1 Unit



## **BODY-PACK MICROPHONE SYSTEM (Optional)**

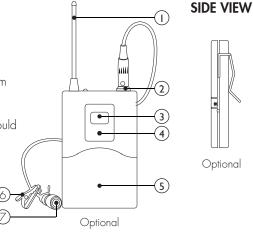
## **SPECIFICATIONS:**

#### **NAMES & FUNCTION:**

Body-Pack Microphone System (including Lavalier Mic. and Headset Mic.)

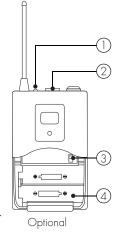
#### **FRONT VIEW**

- 1. Antenna
- 2. 4-pin Microphone Input Jack
- 3. LCD Digital Display
- 4. IR Port: Receives infrared beam to synchronize frequencies. IR when using multiple systems, only one microphone port should be exposed at a time
- 5. Battery Cover
- 6. Tie-Clip
- 7. Microphone Extension Jack



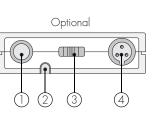
#### **INSIDE VIEW**

- 1. Power/Mute indicator
  - Green: Ready
  - Amber: Mute Open
  - Flashing Red: IR is transmission in process
  - Glowing Red: Low battery power
  - Pulsing Red: Battery dead (microphone cannot be turned off until batteries are changed)
- Power ON/OFF/MUTE Button: Press and hold the microphone for 3 seconds to turn power ON/OFF. Press and release to mute or un-mute the microphone.
- 3. Adjustment switch
- 4. Battery compartment



#### **TOP VIEW**

- 1. Antenna Jack
- 2. Power/Mute indicator
- 3. Power Switch
- 4. Microphone Input Jack





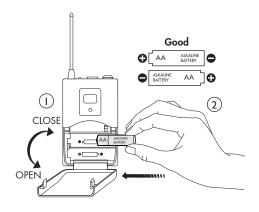
Optional

## **HOW TO CHANGE BODY-PACK BATTERIES**

STEP 1: Open battery cover.

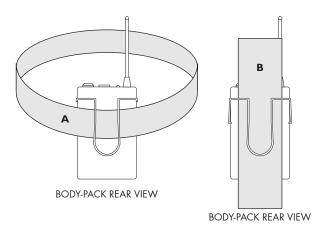
**STEP 2:** Insert 2 AA batteries. 2 alkaline batteries are expected to last 8 hours.

Make sure to insert batteries correctly according to diagram. When the microphone body-pack light glows red, the batteries should be changed immediately.



## **HOW TO WEAR BODY-PACK**

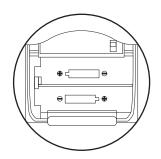
The Body-Pack can be buckled to the belt or the guitar band.



## **ADJUSTMENT GAIN**

Three gain settings are available. Choose the appropriate setting for your instrument.

- MIC: for the microphone adjustment
- 0: Guitar with passive pickups
- -10: Guitar with active pickups





**CAUTION:** Before troubleshooting any symptoms make sure the equipments are in the "OFF" position.

#### 1. SYMPTOM: NO SOUND COMING FROM MICROPHONE

## A. CAUSE: There is no signal.

- a. Check if batteries are inserted correctly.
- b. If batteries are inserted correctly but still no power, insert new batteries
- c. Make sure the microphone and receiver are in the same channel.
- d. The volume may be turned to a low level.

## B. CAUSE: The receiver is unpowered.

Make sure the power adapter is connected properly and there is power coming from the power outlet.

## C. CAUSE: There is no AF signal.

Turn off the receiver and make sure it is properly connected to the mixer or amplifier. If it is, slowly turn the volume higher.

## **D. CAUSE:** There is no indication of RF signal.

There may be interference so change to different channels. Adjust the antenna of the receiver and/or remove objects between receiver and microphone.

#### 2. SYMPTOM: NOISE COMING FROM MICROPHONE

CAUSE: There are interference within your area.

- 1. Change the channel on the microphone and receiver.
- 2. Stand further away from speakers.

## 3. SYMPTOM: THE MICROPHONE SUDDENLY HAS NO SOUND AND THE RECEIVER LCD IS OFF.

Make sure the AC power adapter is properly connected to the receiver and securely plugged into the electrical outlet. Make sure the AC electrical outlet works and supplies the proper voltage.

## 4. SYMPTOM: THE MICROPHONE SUDDENLY HAS NO SOUND BUT THE RECEIVER SHOWS RF SIGNAL.

**CAUSE:** The microphone wire is damaged or disconnected.

To fix it, open the microphone head cover to check the wire and reconnect the wire. If it does not work, replace the microphone head.

## 5. SYMPTOM: THE MICROPHONE DISTORTION LEVEL IS INCREASING GRADUALLY.

**CAUSE:** The microphone batteries are running out. lowReplace the microphone batteries.

#### 6. SYMPTOM: POOR SIGNAL

**CAUSE:** When the 2-in-1 Base Module and microphone are placed in different rooms seperated by a wall, this would cause poor signal.

Your audio equipment is close to the police, fire or radio stations. In this case, a different frequency MUST be selected.

## 7. SYMPTOM: THE FREQUENCY OF THE MICROPHONE IS DIFFERENT FROM THE RECEIVER.

The microphone's frequency must match withreceiver's frequency.



## VM-52U G5 FCC FREQUENCY: 480.100~529.850 MHz

## UHF Frequencies Available for Use for Home Electronics in North America

The radio frequencies used in the transmission of wireless information are closely regulated in most countries including North America. A lot of countries strictly enforce their regulations stating which frequencies are available for use for certain device, so it can help limit the amount of radio frequency interference in all wireless communications.

Please refer to the following table for MIC 1 and MIC 2 frequencies. If the frequencies indicated in the following table are in conflicts with the local wireless information law, please switch to a different product model.

### FCC Information to User for Reference

This equipment is designed in compliance with the limits for a Class A digital device pursuant to part 15 of the FCC Rules from the United States of America. These limits are designed to provide protection against harmful interference when the equipment is operated in public environment. This equipment generates, uses, and can radiates radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, and users will have to correct the interference at their own expense.

\	VM-52U G5 MIC 1 FREQUENCY 480.100-504.850 MHz						
СН	FREQUENCY	СН	FREQUENCY	СН	FREQUENCY	СН	FREQUENCY
0	480.100	25	486.350	50	492.600	<i>7</i> 5	498.850
1	480.350	26	486.600	51	492.850	<i>7</i> 6	499.100
2	480.600	27	486.850	52	493.100	77	499.350
3	480.850	28	487.100	53	493.350	<i>7</i> 8	499.600
4	481.100	29	487.350	54	493.600	79	499.850
5	481.350	30	487.600	55	493.850	80	500.100
6	481.600	31	487.850	56	494.100	81	500.350
7	481.850	32	488.100	57	494.350	82	500.600
8	482.100	33	488.350	58	494.600	83	500.850
9	482.350	34	488.600	59	494.850	84	501.100
10	482.600	35	488.850	60	495.100	85	501.350
11	482.850	36	489.100	61	495.350	86	501.600
12	483.100	37	489.350	62	495.600	87	501.850
13	483.350	38	489.600	63	495.850	88	502.100
14	483.600	39	489.850	64	496.100	89	502.350
15	483.850	40	490.100	65	496.350	90	502.600
16	484.100	41	490.350	66	496.600	91	502.850
17	484.350	42	490.600	67	496.850	92	503.100
18	484.600	43	490.850	68	497.100	93	503.350
19	484.850	44	491.100	69	497.350	94	503.600
20	485.100	45	491.350	70	497.600	95	503.850
21	485.350	46	491.600	<i>7</i> 1	497.850	96	504.100
22	485.600	47	491.850	72	498.100	97	504.350
23	485.850	48	492.100	73	498.350	98	504.600
24	486.100	49	492.350	<i>7</i> 4	498.600	99	504.850

\	VM-52U G5 MIC 2 FREQUENCY 505.100-529.850 MHz						
СН	FREQUENCY	СН	FREQUENCY	СН	FREQUENCY	СН	FREQUENCY
0	505.100	25	511.350	50	517.600	<i>7</i> 5	523.850
1	505.350	26	511.600	51	517.850	<i>7</i> 6	524.100
2	505.600	27	511.850	52	518.100	77	524.350
3	505.850	28	512.100	53	518.350	78	524.600
4	506.100	29	512.350	54	518.600	79	524.850
5	506.350	30	512.600	55	518.850	80	525.100
6	506.600	31	512.850	56	519.100	81	525.350
7	506.850	32	513.100	57	519.350	82	525.600
8	507.100	33	513.350	58	519.600	83	525.850
9	507.350	34	513.600	59	519.850	84	526.100
10	507.600	35	513.850	60	520.100	85	526.350
11	507.850	36	514.100	61	520.350	86	526.600
12	508.100	37	514.350	62	520.600	87	526.850
13	508.350	38	514.600	63	520.850	88	527.100
14	508.600	39	514.850	64	521.100	89	527.350
15	508.850	40	515.100	65	521.350	90	527.600
16	509.100	41	515.350	66	521.600	91	527.850
17	509.350	42	515.600	67	521.850	92	528.100
18	509.600	43	515.850	68	522.100	93	528.350
19	509.850	44	516.100	69	522.350	94	528.600
20	510.100	45	516.350	70	522.600	95	528.850
21	510.350	46	516.600	<i>7</i> 1	522.850	96	529.100
22	510.600	47	516.850	72	523.100	97	529.350
23	510.850	48	517.100	<i>7</i> 3	523.350	98	529.600
24	511.100	49	517.350	74	523.600	99	529.850



## One-Year Limited Warranty for Home Use Equipment

Our one-year warranty applies to speakers, amplifiers, mixers and microphones for home use only. It covers both parts and labors. The warranty becomes effective on the date of your purchase.

Our warranty only covers defects due to product defectiveness with free of defects in materials or workmanship. However, our warranty does not cover defects due to normal wears, damage in transit, improper use, abuse or failure to follow the proper instructions for maintenance. This warranty is void in the event of unauthorized repairs, alternations, modifications and removing of the product label.

Please also note that our warranty does not cover any shipping cost for the return of defective products to us for inspection, repair and maintenance. Our warranty for Better Music Builder products can only be executed in North America.

NOTE Our warranty does not cover the battery for wireless microphone products.

## 90-Day Limited Warranty for Public and Commercial Use Equipment

Our 90-day warranty applies to speakers, amplifiers, mixers and microphones for both public and commercial use such as restaurant, coffee shop, KTV nightclub, church and school, etc. It covers both parts and labors. The warranty becomes effective on the date of your purchase.

## To Register Your Warranty

Please submit the warranty card that cames with your unit; it is also download on our website. However, we need the invoice for your purchase in order to process this warranty. You may also register your warranty online.

Please visit our website at www.BetterMusicBuilder.com.

## **PRECAUTION**

- 1. If using more than one microphone system, please select the operating frequency or signal channel carefully so as to avoid disturbing.
- 2. The input power voltage of the 2-in-1 Base Module is 110V/120V ( $\pm 10\%$ ). If it is too low or too high, it will affect the work of the machine.
- 3. When installing batteries, reversing the electrode will damage the machine.



**Caution:** To reduce the risk of electrical shock, do not remove the cover (or back). No user serviceable parts inside: refer servicing to qualified personnel.

**Warning:** To reduce the risk of fire or electrical shock, do not expose this appliance to rain or moisture.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Read the manual.

## **MAILING ADDRESS**



BETTER MUSIC BUILDER 29300 Kohoutek Way #150 Union City, CA 94587 U.S.A.

## **TELEPHONE NUMBERS**



USA Region
USA Toll Free: 1-800-318-2218
Sales & Marketing: 510-477-9955
Customer Service: 510-477-9955

## **FAX NUMBERS**



USA Region Sales & Marketing: 510-477-9922 Customer Service: 510-477-9922

## **WORLD WIDE WEB**



E-mail: sales@bettermusicbuilder.com Website: www.bettermusicbuilder.com

## **MAINTENANCE**

NOTE	

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Better Music Builder® is a leader in the Audio and Karaoke equipment industry. We are committed to offering you high quality audio products. Unlike any others brand, we deliver the best cost and value to you directly. For the latest update information including operation manuals, installation instructions, hook-up diagram and other new technologies updates etc. please visit us at our website www.BetterMusicBuilder.com.





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Code: 20161020