

User Manual

Product Name: iCraft@RF
Model Number: PF240RF

1. PRODUCT OVERVIEW

1.1. Critical Success Factor:

1) Performance and Feature:

- i) Great Sound Performance – **Similar to the provided acoustic Sample**
- ii) Wireless Remote Control with LCD display – **Similar to PF405**

2) Material Cost: Must be below US\$ 30.00

3) Outlook

4) Schedule (MP: Jan 2009)

1.2. Product Brief

- iPod docking 2.0 + Radiator Speaker with Flip-back connector design
- RF Remote Control with Color LCD Display
- Wall-mount High Power iPhone Sound bar
- Mood Light Effect
- WWi Compliance
- Facelift reserved design
- Operated with DC Power Adaptor



1.3. Feature

- 2.0 + Passive Radiator Stereo Speaker System
- iPhone Charging with Jive Box Flip-Back Docking
- 5x Preset EQ setting (Jazz, Pop, Rock, Flat, Movie)
- Blue mood light effect at both side
- RF remote control with Color LCD Display
- Video Output in Composite and Component format

2. CONFIGURABLE OPTIONS

2.1. Factory Configurable Options:

Configurable Option	Original version	Parameter
a) FM (PLL) Digital Radio	No	Yes / No
b) Facelift	Yes	Cloth / Plastic + Metal Net

2.2. Consideration of each option

a. FM (PLL) Digital Radio

i) Advantage / Usage:

- Adding Built-in FM antenna cable at the back
- Adding FM Radio Section on the Main Menu on the RF Remote\
- Adding the Reset button at the back
- **Tuner Type:**
 - Digital (PLL) tuner
- **Frequency (band) support:**
 - FM Only
 - 76 – 108 MHz
 - USA Market: 87.8 – 108 MHz (0.1 MHz / Step)
 - Europe Market: 87.5 – 108 MHz (0.05 MHz / Step)
 - Japan Market: 76 – 90 MHz (0.1 MHz / Step)
 - Australian Market: 87.5 – 108 MHz (0.05 MHz / Step)
 - Adjustable for different country; according to customer request
- **Available Frequency Space:**
 - 50, 100, 200 KHz
 - Adjustable for different country; according to customer request
- **Tuning Step:**
 - Auto Search for the clear station
 - Manual one step tuning
- **Station Memories:**
 - 10 Stations
- **Key Configuration:**
 - i. Cursor up (Call up Next Pre-set Station)
 - ii. Cursor down (Call up Previous Pre-set Station)
 - iii. Play/Pause (Mute)
 - Short Press in Radio → Mute / Un-Mute
 - Holding Press → Standby, Tune OFF the Speaker and Remote
 - iv. Next Track (Tune +)
 - v. Pervious Track (Tune -)

3. MECHANICAL SPECIFICATION

3.1. Dimension: 560 x 103 x161 mm (L x D x H)

3.2. Weight: TBC

3.3. Connectors

- iPod 30 pins (male) connector (consigned) with Jive Box Flip-Back dock design

- 3.5 mm stereo Jack for AUX-1
- RCA (R & L) Jacks for AUX -2
- Component Video RCA output Terminal (Color: Green (Y), Blue (P_B), Red (P_R))
- Composite Video RCA output Terminal (Color: Yellow)
- DC Jack 3.5mm Centre-positive

3.4. Switches:

- i. Standby (On/Off) button (Tact Switch at Main Panel)
- ii. Volume up (Tact Switch at Main Panel)
- iii. Volume down (Tact Switch at Main Panel)
- iv. EQ button (Tact Switch at Main Panel)
- v. Dimmer (Tact Switch at Main Panel)
- vi. Connect button (Tact Switch at Main Panel)
 - Long Press for Connection

3.5. LED and Mood Light:

- **Mood Light Dimmer:**

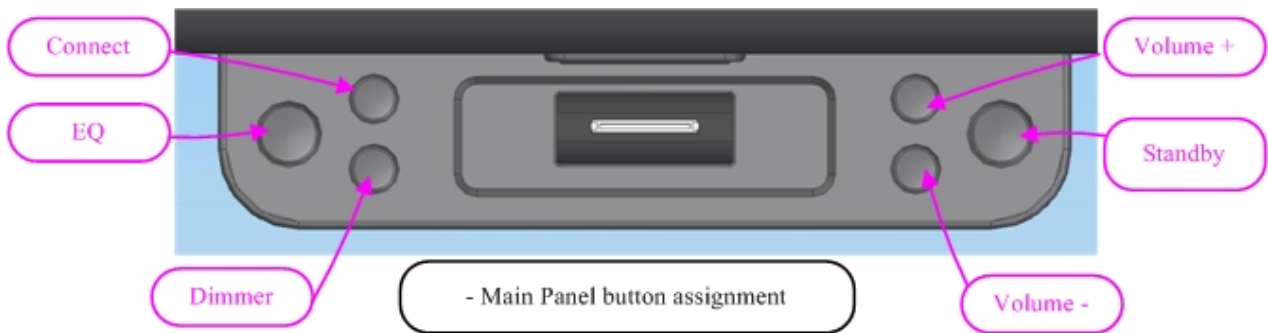
- Speaker is ON, Number of level: 4 Levels (OFF → Dimmer → Normal → Brighter)
- Speaker is OFF: Lighting is always OFF
- Default: Normal Level, when first Power up the unit
- Power On: Auto memorize the last dimmer level, and restore the last level when Power on from Standby

- **LED indicator:**

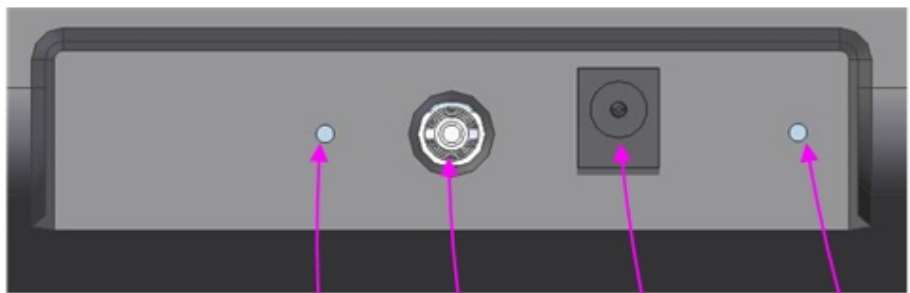
- Flashing (Leisurely): LED “On” for 2s; and LED “Off” for 2s
- Flashing (Imperatively): LED “ON for 0.5s; and LED “Off” for 0.5s
- Color: Blue

- **LED and Mood Light Matrix:**

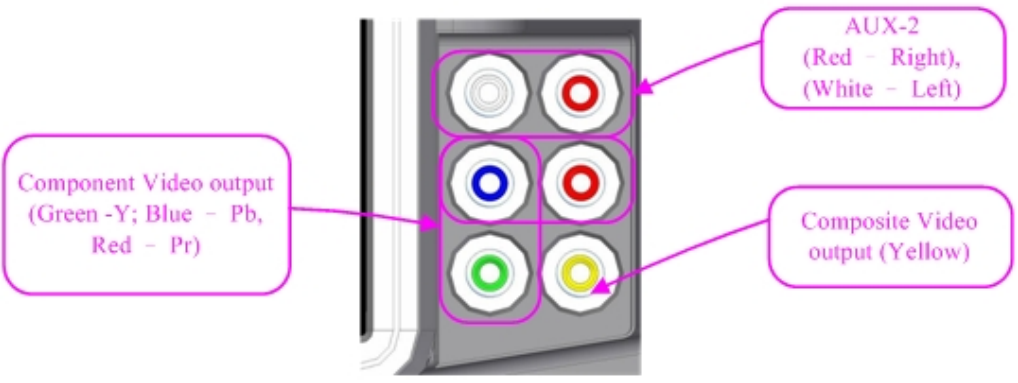
Speaker Status	Wireless Status	LED Status	Mood Light Status
ON	Lost Connection	Flashing (Leisurely)	ON, and Last Level
	Pairing Mode	Flashing (Imperatively)	
	Paired	OFF	
Standby	N/A	Solid	OFF



- Back Panel buttons / Jacks assignment



Antenna (FM Option)
AUX-1 (3.5mm Line-in)
DC Jack 18V 1.5A Centre positive
Reset button (FM option)



Component Video output (Green - Y; Blue - Pb, Red - Pr)

AUX-2 (Red - Right), (White - Left)

Composite Video output (Yellow)

- Side RCA Jacks



- LED indicator

4. ELECTRICAL SPECIFICATION

4.1. Audio Requirement:

- Benchmark: Philips DC910 (only for reference)
- Driver configuration: 1 x 50mm full range driver + 1 x 75mm Woofer driver + 118 x 92 mm Passive Radiator / Channel
- RMS Output: 15W + 15W (Total: 30W RMS); same in DC
- Hum Noise level (in Operation mode – Sat.): < 40dB at 1” in Max Volume
- Hum Noise level (in Operation mode – Subwoofer): <48dB at 1” in Max Volume
- Hum Noise level (Stand-by mode): = 0 dB at 1” in Max Volume
- The Max Audio output signal level should be same as the level drawn from 30 pins connector directly
- No Matter Charging or non-Charging the iPod, sound performance should not be effected more than 1%
 - System SNR: >65 dB @ 1W
 - THD: <10% at the Max Volume
 - Loudness: SPL >75dB @ 1kHz sine wave (1m, input: 230mV, Max Volume)
 - Frequency response: 80 – 16kHz

4.2. LCD and RF Remote Requirement:

- **Type:**
 - CSTN
- **Display (LCD VA and Resolution):**
 - Size: 30 mm x 30 mm
 - Resolution: 128 x 128 pixel (Dot Matrix Type)
 - Color: 65K color
 - Line of Characters: 8 Lines
- **RF Signal:**
 - Type: 2.4G Digital
 - Distance: at least 10m
- **RF Remote:**
 - Size of Remote: 115 mm (L) x 42mm (W) x 24mm (H)
 - Operated by: 2x AAA Battery
 - Number of Keys: 9 keys
 - Key Type: Tact Switch
- **Auto Power Saving:**
 - No Activity on the Remote
 - Turn Off the Display and disconnect with Speaker
- **Key Configuration:**
 - i. Menu (Jump back to upper level Menu)
 - Holding Press → Jump to Main Menu in any condition
 - ii. Select (Entry to next level Menu)
 - iii. Cursor up (Move Cursor up)
 - Holding Press → Page up
 - iv. Cursor down (Move Cursor down)
 - Holding Press → Page down
 - v. Play/Pause (Control Music)
 - Short Press in iPod → Play / Pause
 - Short Press in AUX → Mute / Un-mute
 - Holding Press → Standby, Tune OFF the Speaker and Remote
 - vi. Next Track (for iPod)
 - Long Press → Fast Forward

- vii. Previous Track (for iPod)
 - Long Press → Fast Backward
- viii. Volume up
- ix. Volume down



4.3. Power Requirement:

- Adaptor powered
- Always provide at least 500mA for iPod Charging, when Power Adaptor attached

4.4. Adaptor Requirement:

- Wall mount Fixed Plug Switching Power Adaptor
- Output Rating: 18V 1.5A
- Input Rating: 110~220VAC
- iPod touch and iPhone compatible (refer to iPod Document)
- Stands & Approvals:
 - UL/cUL
 - FCC
 - CE
 - TUV
 - EMC
 - BS
 - C-Tick
 - SAA

4.5. Compatibility (iPod)

- iPod 4th Generation (iPod with video)
- iPod Classic (80G, 120G and 160G)
- iPod nano 3rd Generation
- iPod nano 4th Generation
- iPod Touch
- iPod Touch 2G
- iPhone 2G
- iPhone 3G
- iPhone 3Gs

4.6. Operation Mode and Sequence:

- See the below Definition and State Diagram for your reference
- **Short Key Press:**
 - Pressed the Key (on unit or remote) snappily, less than 2s
- **Long Key Press:**
 - Hold the Key (on unit or remote) for more than 2s
- **Holding Key Press:**
 - Hold the Key (on unit) for more than 5s
- **No Key Activity:**
 - No Key had been pressed within 5 mins
- **Volume (Levels):**
 - Digital volume control (32 levels)
 - Volume Bar Display, and it will overlap the current Screen Content for 2 second in any condition, once the Volume btns being pressed
 - First Power up default Volume: level 11 & and last volume setting memory
 - Gradually Ramp up the volume from volume 0 (Mute) to the last volume setting when powered "On" or "Un-mute"
 - Ramp up Speed: no delay for level 0-5; 200ms / step for level 6-32
 - Showing the Clock instead of the Volume level during Ramp up
 - When user interrupts by pressing volume "Up / Down / Mode change / Mute", it will stop and follow the user's new setting.
- **Page up/down:**
 - Dynamic Page up/down with 3 different Speeds for Page up/down
 - Holding press Courser up/down to active the Page up/down feature
 - First 10 pages with Normal Speed
 - Second 10 pages with Faster Speed
 - Third 10 pages with Fastest Speed
- **Source selection in Main Menu:**
 - i) iPod
 - ii) Aux-1
 - iii) Aux-2
 - Default mode when Power ON the speaker in the first time= "Main Menu"
 - Entry to the pervious mode, when the Speaker is turned ON from Standby mode.
- **Wireless Connection:**
 - One to One Connection
 - Auto Scan Clear Station and Remote Pairing
 - Auto Reconnection, when turn ON
- **Sleep:**
 - Count Down until shut off at the selected time (15 mins, 30 mins, 45 mins, 60 mins, OFF)
 - Power Off (Standby) button will override the Sleep feature to OFF

- **EQ setting:**
 - Press “EQ” button to select the Preset EQ settings or select the “Speaker Setting” in Main Menu
 - 5x Preset EQ Settings
 - (Pop → Jazz → Rock → Flat → Movie) repetitively
 - First Power up default setting = Pop
-

Plastoform

PF240RF Remote
iPod Mode (r5)

Speaker

- iPod** >
- Aux-1 >
- Aux-2 >
- Speaker Setting >
- Sleep Timer OFF
- Now Playing >

iPod

No iPod detected

Please insert the iPod / iPhone on the Speaker

When User Select the iPod mode, but the iPod / iPhone is not presented

Name of iPod

- Music** >
- Videos >
- Photos >
- iPod Settings >
- Now Playing >

Music

Music

- Playlists** >
- Artists >
- Albums >
- Songs >
- Genres >
- Composers >
- Podcasts >
- Audiobooks >

Name of iPod

- Music >
- Videos** >
- Photos >
- iPod Settings >
- Now Playing >

Videos

Video

- Movies** >
- Music Videos >
- TV Shows >
- Video Podcasts >
- Rentals >

Name of iPod

- Music >
- Videos >
- Photos >
- iPod Settings** >
- Now Playing >

Settings

iPod Settings

- Shuffle Songs
- Repeat Off
- Video Out: C/V**
- TV Signal: PAL

Option
 Songs → Albums → Off
 One → All → Off
 C/V → Y/Pr/Pb
 PAL → NTSC

Speaker

- iPod >
- Aux-1 >
- Aux-2 >
- Speaker Setting >
- Sleep Timer OFF
- Now Playing** >

Now Playing in iPod mode

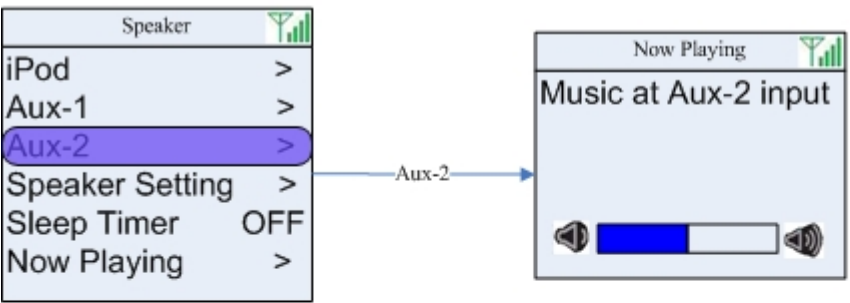
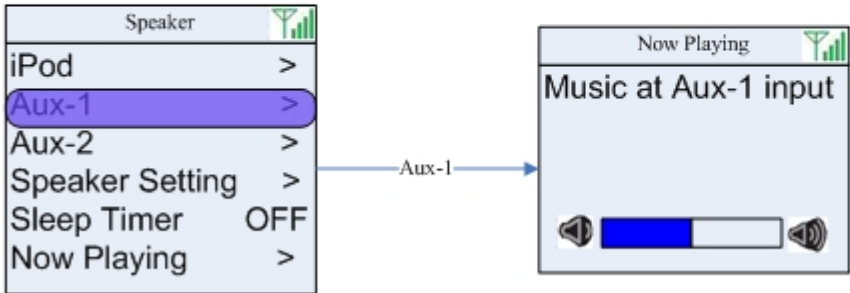
Now Playing

- Number of Songs
- Name of Songs
- Name of Artist
- Name of Album
- Time Bar of Song

Selecting the "Now Playing", if it was operating in iPod mode

Plastiform

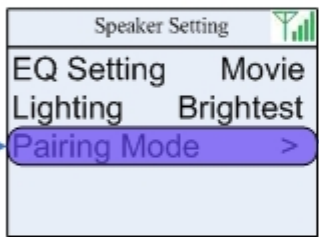
PF240RF Remote
AUX (r5)



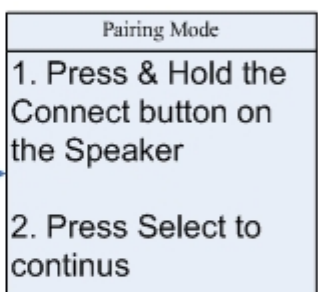
Selecting the "Now Playing" , if it was operating in AUX mode



Option
EQ: Pop → Jazz → Rock → Flat → Movie → Pop
Lighting: OFF → Dimmer → Normal → Brighter → OFF



Pairing Mode



See the Wireless Connection section for more detail



Option
Sleep Timer: OFF → 15min → 30min → 45min → 60min → OFF



- Sleep mode counting down
- It will tune off the Speaker, and reset this option as OFF

Plastiform

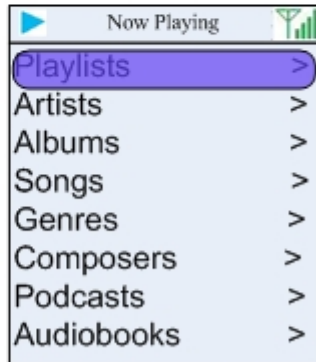
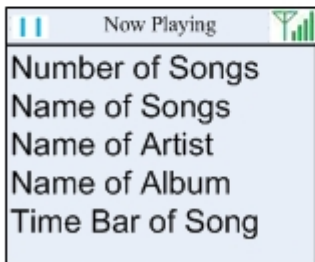
PF240RF Remote
Status indicator (r5)



- Sleep mode indicator
- Sleep icon will display in any mode and screen



- Mute Mode indicator
- it will only happen in the AUX mode

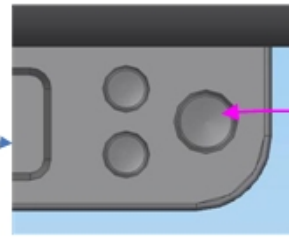


- Play/Pause indicator will be always displayed, when in the iPod mode
- Play/Pause can control the iPod anywhere within the iPod mode

Plastoform

PF240RF Wireless Connection (r5)

No Signal
 Please turn on the Speaker.
 Get Close to the Speaker, press and hold "Select" to pair to Speaker



Standby btn

- Turn ON the Speaker
 - Press the Standby btn on unit

- Showing this screen on Remote
 (Lost Signal Condition)

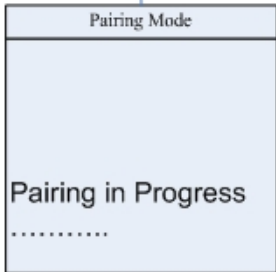


- Pairing Succeeded

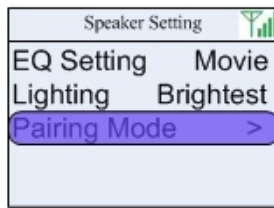


Select btn

- Hold press the Select btn



- Auto Scan and Pair to the Speaker



Pairing Mode
 1. Press & Hold the "Connect" button on the Speaker
 2. Press "Select" to continuous

- Pairing Condition
 - User may also entry this mode from the Setting menu

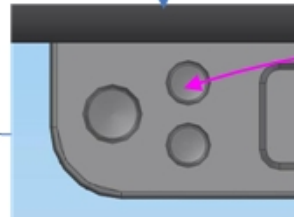
Select btn



- Press the Select btn



- LED on the unit will be Flashing imperatively

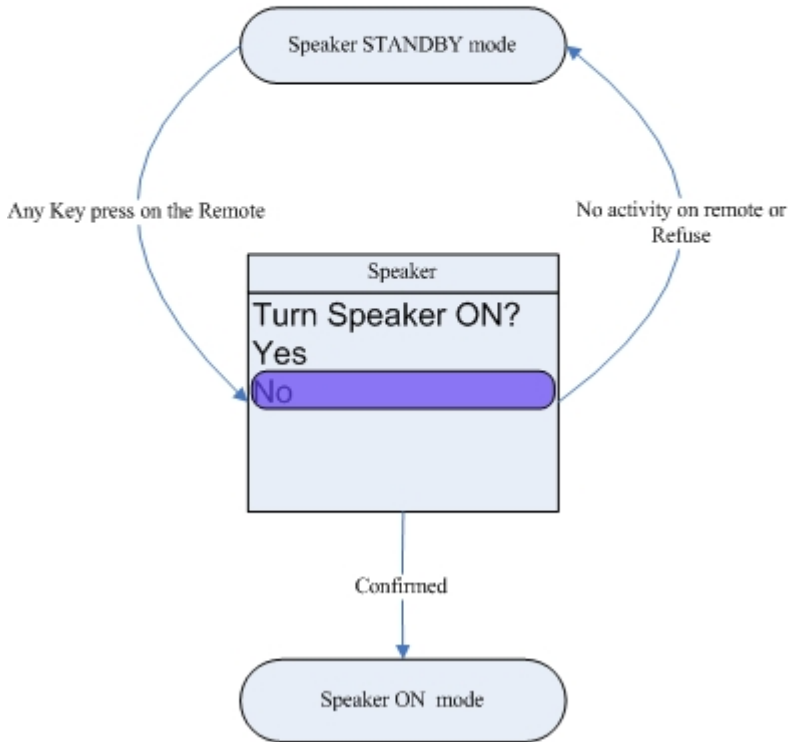


Connect btn

- For Wireless Paring
 - Long Press the Connect btn

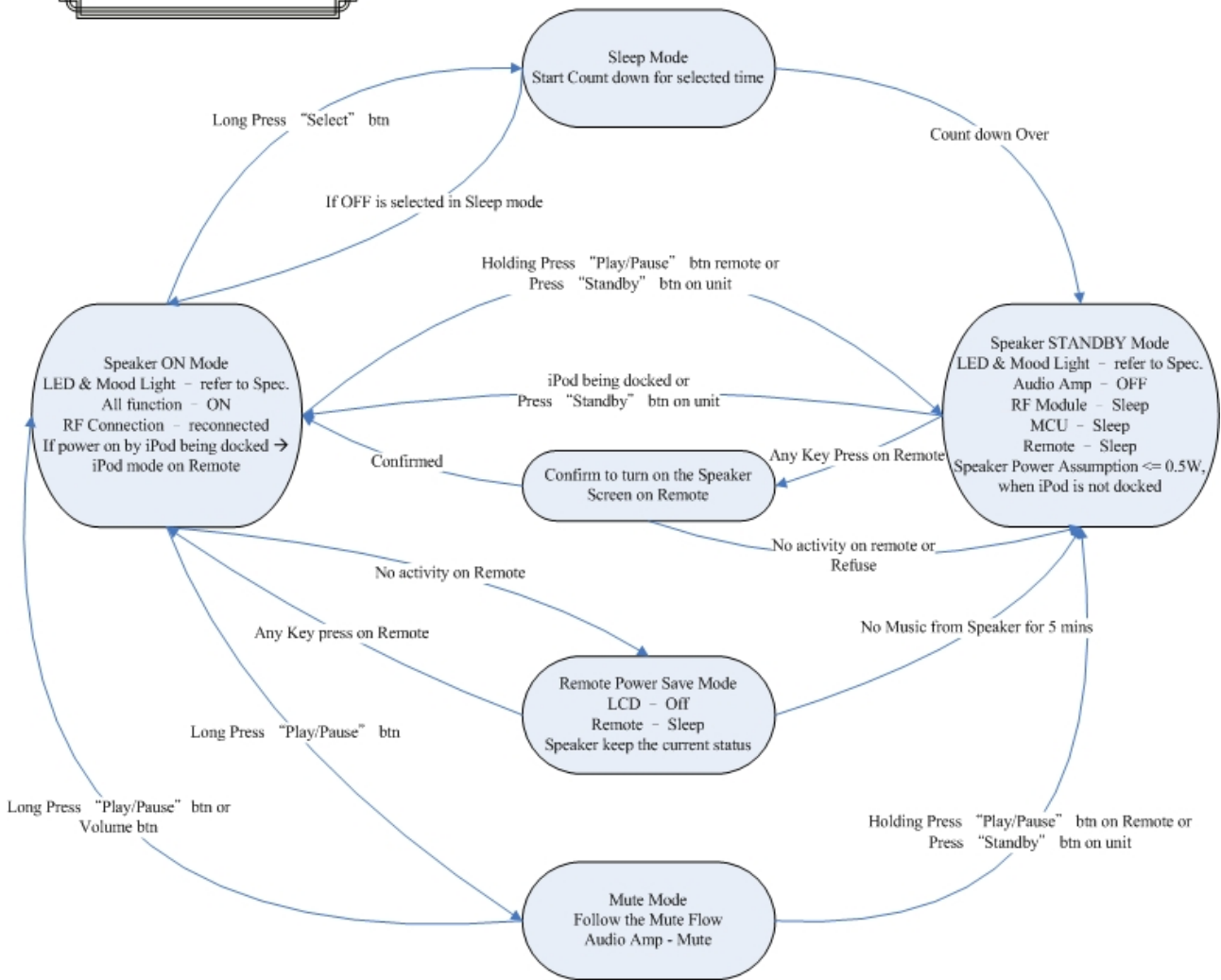
Plastiform

PF240RF Trun On Speaker
by Remote (r2)



Plastiform

PF240RF General Operation Flow (r02)



- 1) Product is always standby for the Apple Authorization Process in any condition.
- 2) Long Press "Play/Pause" on the Remote = "Mute"
- 3) Holding Press "Play/Pause" on the Remote = "Standby" btn to turn OFF the Speaker
- 4) Holding Press "Select" on the Remote = "Sleep" btn to entry the Sleep setting under any condition
- 5) Holding Press "Menu" on the Remote = "Home" btn to escape from current mode and go to the Main Menu under any condition
- 6)
-) Total 32 vol steps
-) Always memorize vol level and EQ Setting

5. DESIGN

5.1.ID: See Below Rendering (Reference Only, ID will be updated)

5.2. Color Specification: Black versions

5.3. Material and Finishing: Cloth Grill, High Gloss Finishing (Similar to iPod touch (edge) finishing)

5.4. Illustration of button / connector (back diagram) label

PF240 RF iPod speaker (Brookstone)

Dimension : 560(W) x 103(D) x 160(H)mm



Brookstone®

PF240 RF iPod speaker (Brookstone)

Dimension : 560(W) x 103(D) x 160(H)mm



Brookstone®



(Back View)

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6. RELIABILITY

6.1. General Operating Temperature: 0 - 45 °C

6.2. General storage temperature: -20 - 65 °C

6.3. Heat Storage test: 98.5 hours with Temp Cycling

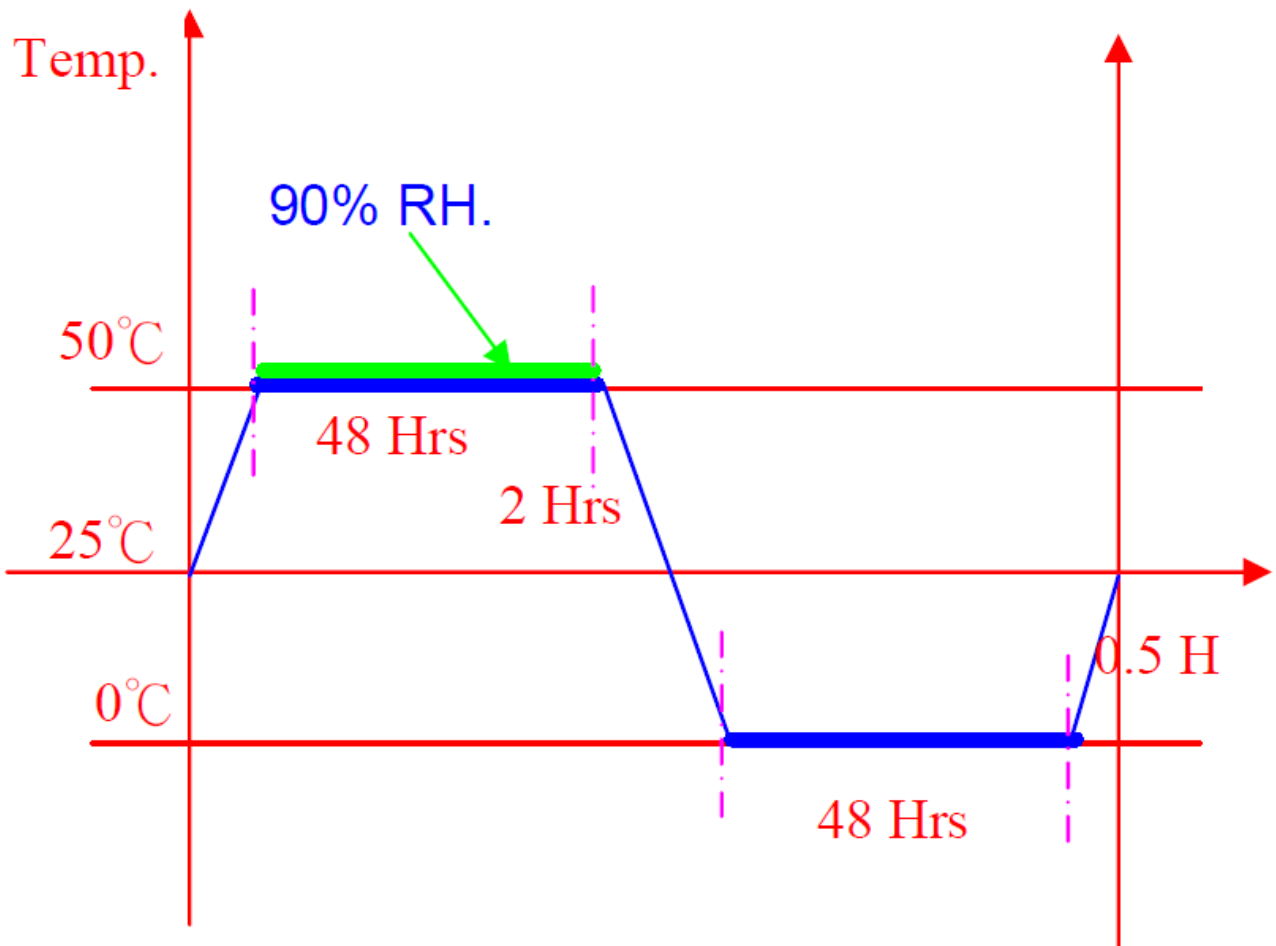
6.4. General Humidity test: 90% (Operating @ 45 °C)

6.5. Vibration test: 0.75 mm, 13Hz to 25Hz, 3 axis, 30 mins

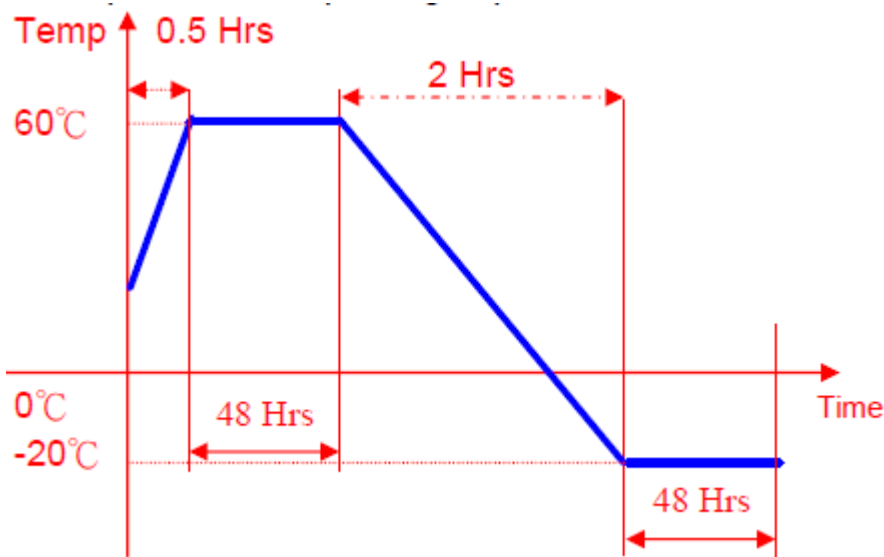
6.6. Drop test (in pack outer carton): 1 corner, 3 edges, 6 faces

6.7. Drop test (out of pack drop test): 3 faces when opened, two faces when close at 1m height

6.8. Product Life: 36 Months (3 years)



^ Operating Test



^ Storage Test

7. STANDARDS AND APPROVALS

- FCC
- CE
- EMC
- *“Work With iPhone”* Certificate Compliance

8. PACKAGING (Not include into the Engineering Quotation)

- Gift Box
 - 4 – 5 colors
 - 250g Flute Paper
 - Coating: UV Coating
 - Insert: Paper Pulp
 - Packing method
 - ◆ Number of inner carton: 2 pcs / inner
 - ◆ Number of outer carton: 6 pcs / outer

9. Packing Content

- Main Unit (PF240RF)
- Power Adaptor
- RF Remote Control with Color LCD
- 2x AAA Battery
- **Optional (Below items are NOT included in Engineering Quotation):**
 - 3.5mm Stereo Cable (0.4M)
 - User Manual (Black on white, 80g, A4 Size, Woodfree paper)

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.