F1 Model 812
Flexible Array Loudspeaker

PRELIMINARY TECHNICAL DATA SHEET

Product Description

The Bose® F1 Model 812 Flexible Array Loudspeaker is the first powered portable loudspeaker that lets you control its vertical coverage pattern. Simply push or pull the array into position to create “Straight,” “C”, “J”, or “Reverse-J” coverage patterns. And once set, the system automatically changes the EQ to maintain optimum tonal balance for each coverage pattern. So whether you’re playing at floor level, on a stage, or facing raked seats or bleachers, you can now adapt your PA to match the room.

Engineered with a flexible array of eight high-output mid/high drivers, a high-powered 12-inch woofer, a lower crossover point and 1,000-watt amplifer, the loudspeaker delivers high SPL performance while maintaing vocal and midrange clarity that’s dramatically better than conventional loudspeakers.

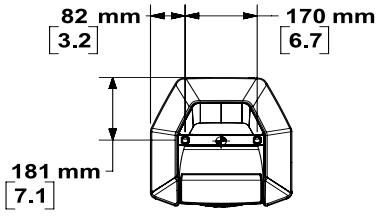
Key Features

- FLEX array technology: Fexible baffle design that can be configured into four unique shapes (“Straight”, “C”, “J” or “Reverse-J), allowing the customer to choose the best possible coverage pattern for the application
- Vertically oriented 8-driver mid/high line array, with each driver mounted on a custom 100° waveguide, helps deliver wide, consistent coverage
- 12-inch high-performance LF driver provides strong low-frequency output
- Bi-amplified design with 2 high-output, Class-D amplifiers to separately power the FLEX array 12-inch LF driver
- 2 input channels with independent volume controls and Line Level/Mic switch on Channel 1

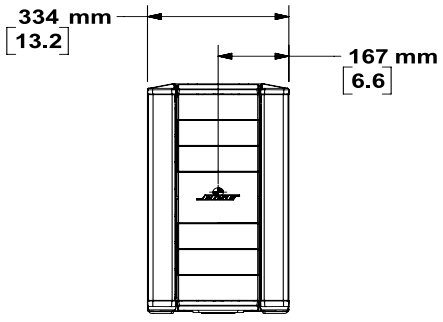
Applications

- Bands of all styles
- Solo musicians
- Mobile DJs
- Houses of worship
- Schools and universities
- Resorts and hospitality venues
- Business presentations

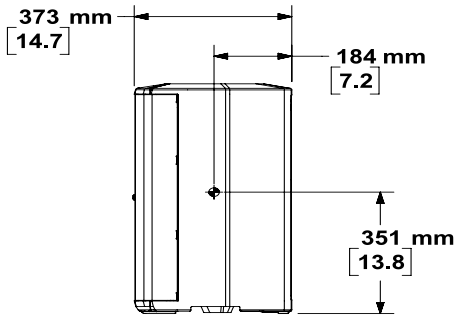
Mechanical Drawings



Top View



Front View



Right View

F1 Model 812
Flexible Array Loudspeaker

PRELIMINARY TECHNICAL DATA SHEET

Technical Specifications

System Performance		
System Type	Self powered, two-way	
Frequency Response (±3 dB)	55 Hz - 14 kHz	
Frequency Range (–10 dB)	48 Hz - 16 kHz	
Nominal Dispersion	100° H x 40° V (C-position)	
Maximum SPL @ 1 m	132 dB SPL (peak)	
Crossover Frequency	600 Hz Acoustic 4th order Butterworth	
Amplification		
System Power	1000 W	
Distortion at Rated Power	0.1 % Max (30 Hz - 15 kHz)	
System Limiter	Dynamic limiter	
Power Indicator	Blue LED: system on	
Transducers		
Driver Compliment	8 x 2.25" mid-high drivers; 1 x 12" LF	
Channels		
Signal Indicators	POWER/FAULT, LIMIT, FRONT LED, SIGNAL INPUT	
Input Connections	Channel 1: XLR Balanced: Pin 1 (GND), Pin 2 (+), Pin 3 (-)	Channel 2: 1/4" TS/TRS, 1⁄8" TS/TRS, (2) RCA
Controls	Volume level, Signal input select, Front LED function select, EQ select, Power on/off	
Additional Connections		
Line Output	XLR balanced	
AC Mains	IEC Connector	
Physical		
Enclosure	High impact composite materials	
Grille	Powder-coated perforated steel grille	
Dimensions	26.1" H x 13.1" W x 14.6" D (664.66 x 334.3 x 372.5mm)	
Net Weight	44.5 lbs (20.18 kg)	
Power Supply Voltages		
Universal	AC power rating: 100-240 V 50 / 60 Hz +/- 20 %, 200 W max	

F1 Model 812
Flexible Array Loudspeaker

PRELIMINARY TECHNICAL DATA SHEET

Control Panel

1. **POWER/FAULT** – indicates power/fault status
   - Blue = power on
   - Red = fault condition
2. **LIMIT** – AMBER = system limiting
3. **FRONT LED** – selector switch that controls LED
   - POWER enables front LED to indicate power status
   - LIMIT engages a limiting display on the front LED
   - OFF turns off the front LED
4. **EQ**
   - FULLRANGE allows the loudspeaker to function without high-pass filtering
   - WITH SUB engages a high-pass filter when using the loudspeaker with the F1 subwoofer
5. **LINE OUTPUT** – balanced XLR line output provides a mix of input 1 and 2. Can be used to daisy chain speakers together
6. **POWER** – on/off switch
7. **AC** – input connector
8. **SIGNAL/CLIP** – displays the input signal status in color
9. **VOLUME** – adjusts channel volume
10. **SIGNAL INPUT** – selector switch sets input sensitivity for input type. Connector accepts XLR or ¼" cable connections
11. **MIC** – selects sensitivity for mic inputs (dynamic or self-powered mics only) – use only when a mic is connected directly to the input
12. **LINE** – selects sensitivity for line-level inputs, for example, from a mixer or DJ controller
13. **RCA connectors** – analog stereo input for audio sources such as DVD players, VCR players, video game consoles, DJ mixers, keyboards and other instruments
14. **¼" phone connector** – provides analog input for guitars and other instruments. Accepts TRS balanced or TS unbalanced cables

F1 Subwoofer

PRELIMINARY TECHNICAL DATA SHEET

Product Description

With 1,000 watts of power, the Bose F1 Subwoofer packs all the performance of a larger bass box into a more compact design that's easier to carry and fits in a car. A mounting stand for the Bose F1 Model 812 Flexible Array Loudspeaker is integrated right into the body of the subwoofer, so you always know where it is, making setup fast and easy. The stand even includes cable channels to neatly hide the wires, giving your system a clean, professional look. And now getting your unit to the venue is easier, too. The F1 Subwoofer features strategically placed handles for easy transport.

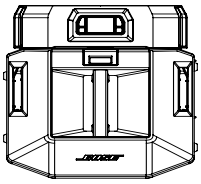
Key Features

- 1,000 watts allow the Bose F1 Subwoofer to pack all the performance of a larger bass box into a more compact design that's lighter and easier to carry than conventional subwoofers
- Two 10" high-excursion drivers built into a compact enclosure that is light and easy to transport
- Polarity switch to adjust polarity of subwoofer. Selections are NORM and REV. Reversing polarity allows for easy correction of low-frequency overlap between the main loudspeaker and subwoofer
- Line output EQ sets the F1 Subwoofer's output to a high-pass filter or full range, which allows for easy crossover selection when used with a main loudspeaker
- F1 Model 812 extension bracket is a unique bracket integrated into the subwoofer. This bracket can be raised and lowered by the end user, allowing the F1 Model 812 loudspeaker to be safely mounted to the subwoofer. The bracket eliminates the need for a coventional pole mount or tripod stand

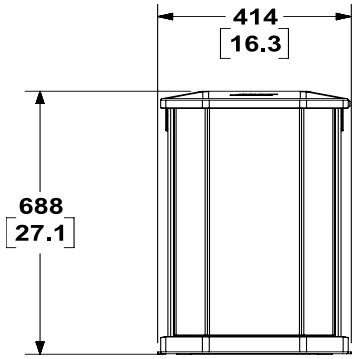
Applications

- Bands of all styles
- Solo musicians
- Mobile DJs
- Houses of worship
- Schools and universities
- Resorts and hospitality venues
- Business presentations

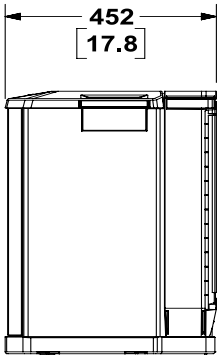
Mechanical Drawings



Top View



Front View



Right View

F1 Subwoofer

PRELIMINARY TECHNICAL DATA SHEET

Technical Specifications

System Performance	
System Type	Self powered
Frequency Response (±3 dB)	48 Hz - 100 Hz
Frequency Range (–10 dB)	38 Hz - 115 Hz
Nominal Dispersion	Omni-directional
Maximum SPL @ 1 m	132 dB SPL (peak)
Crossover Frequency	40 – 100 Hz Butterworth Bandpass, 100 Hz 4th order Butterworth HPF at Line Out
Amplification	
System Power	1000 W
Distortion at Rated Power	0.1 % Max (30 Hz - 15 kHz)
System Limiter	Dynamic limiter
Power Indicator	Blue LED: system on
Transducers	
Driver Compliment	2 x 10" high-excursion drivers
Channels	
	Channels 1/2
Signal Indicators	POWER/FAULT, LIMIT, FRONT LED, SIGNAL INPUT
Input Connections	2 XLR - 1/4" Combo
Controls	Volume level, Front LED function select, Power on/off, Polarity select, Line output EQ
Additional Connections	
Line Output	XLR balanced
AC Mains	IEC Connector
Physical	
Enclosure	Wood cabinet with high impact composite end caps
Grille	Powder-coated perforated steel grille
Dimensions	27" H x 16.1" W x 17.6" D (688 x 410.16 x 448.5mm)
Net Weight	55 lbs (24.9 kg)
Power Supply Voltages	
Universal	AC power rating: 100-240 V 50 / 60 Hz +/- 20 %, 200 W max

F1 Subwoofer

PRELIMINARY TECHNICAL DATA SHEET

Control Panel

1. **FRONT LED** – selector switch that controls LED
   - POWER enables LED to indicate power status
   - LIMIT enables LED to indicate limiting
   - OFF turns off LED
2. **POWER/FAULT** – indicates power/fault status
   - Blue = power on
   - Red = fault condition
3. **LIMIT** – AMBER = system limiting
4. **SIGNAL/CLIP** – displays the input signal status in color
   - Green = signal present
   - Red = signal clipping
5. **VOLUME** – adjusts output volume
6. **LINE OUTPUT EQ**
   - THRU passes input signal to the output with no filtering
   - HPF passes input through a high-pass filter
7. **POLARITY**
   - NORM allows normal operation
   - REV removes low-frequency overlap with the F1 Model 812 loudspeaker
8. **LINE OUTPUT 1/2** – provides a balanced line output signal that can be sent to a powered loudspeaker or additional subwoofer
9. **LINE INPUT 1/2** – combination XLR or ¼" connector that accepts line level inputs
10. **AC** – input connector
11. **POWER** – on/off switch

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F1 Flexible Array Loudspeaker System

Technical Education

Bose Pro Education Center

www.bosepro.education

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pro.Bose.com

Technical Outline

- General Specifications
- Vertical Dispersion
- Input / Output Specifications
- EQ Switches & Volume Controls
- Setup review
- Mounting Brackets

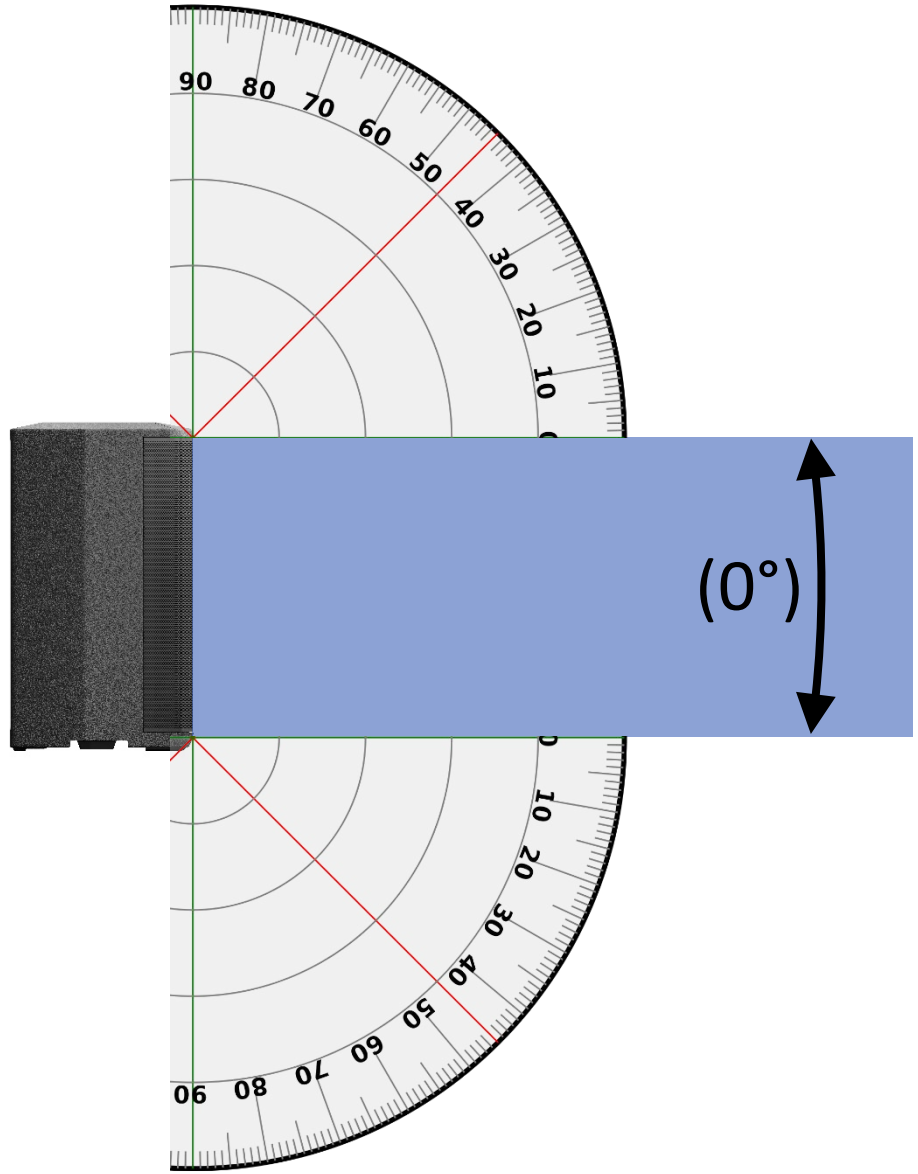
General Specifications

	F1 Model 812	F1 Subwoofer
Weight (lb / kg)	44.5 lbs (20.18 kg)	57.0 lbs (25.9 kg)
Dimensions (HxWxD)	26.1“ H x 13.1" W x 14.6“ D (665 x 334 x 373mm)	27" x 16.1" x 17.6" (688 x 410 x 449mm)
Max SPL	132 dB	132 dB
Horizontal Dispersion	100°	Omni-directional
Vertical Dispersion (Straight | J | Reverse-J | C)	15° | 30° | 30° | 40°	Omni-directional
Frequency Response -3dB	52 Hz - 16 kHz	40 Hz - 100 Hz
Crossover Frequency	600 Hz	40 - 100 Hz Bandpass 100 Hz Hi-Pass Filter at Line Out
Amp Power @ 0.1 % Max (30 Hz - 15 kHz)	1,000 Watts	1,000 Watts
AC Power Requirements	AC power rating: 100-240 V 50 / 60 Hz +/- 20 %, 200 W max	

Vertical Dispersion

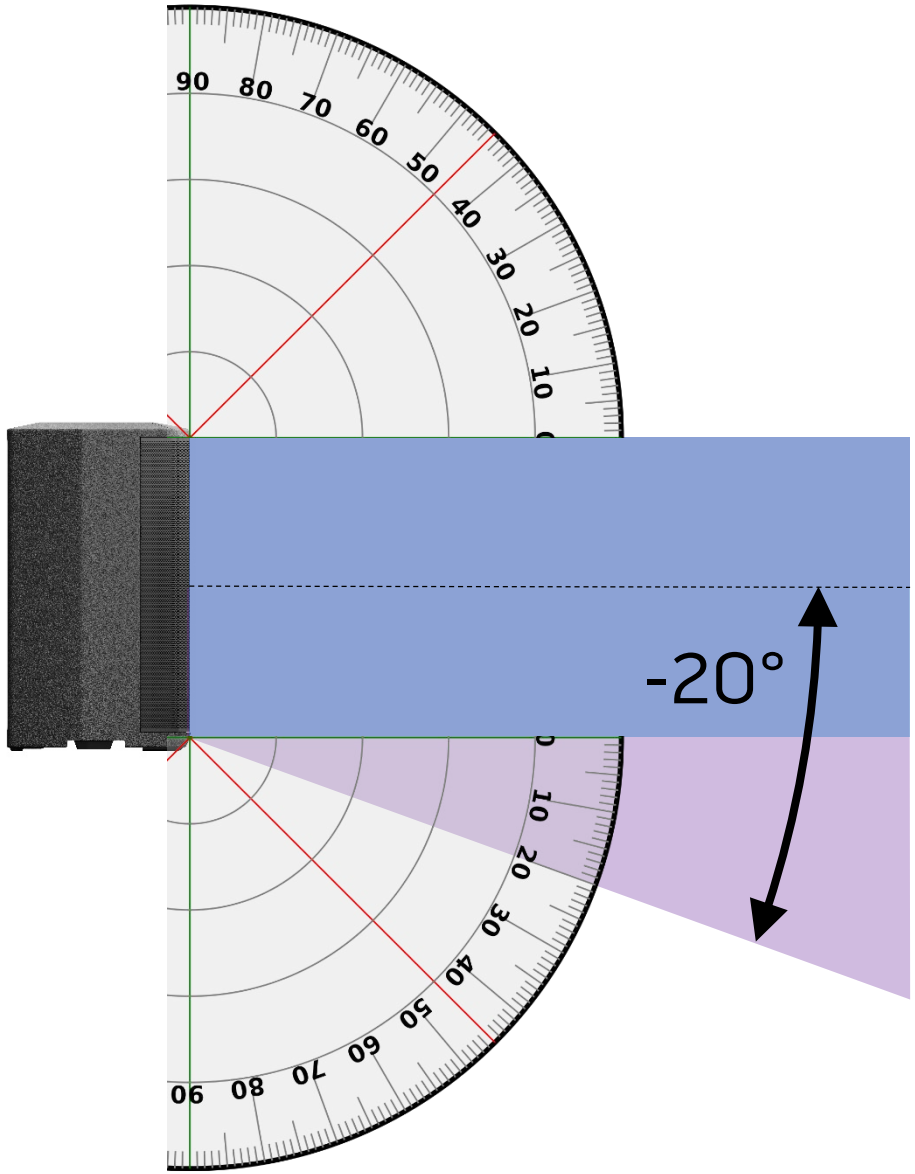
Vertical Dispersion Data

- The primary distinguishing feature of the F1 System is an adjustable vertical dispersion
- In the STRAIGHT configuration vertical dispersion is nominal (0°)



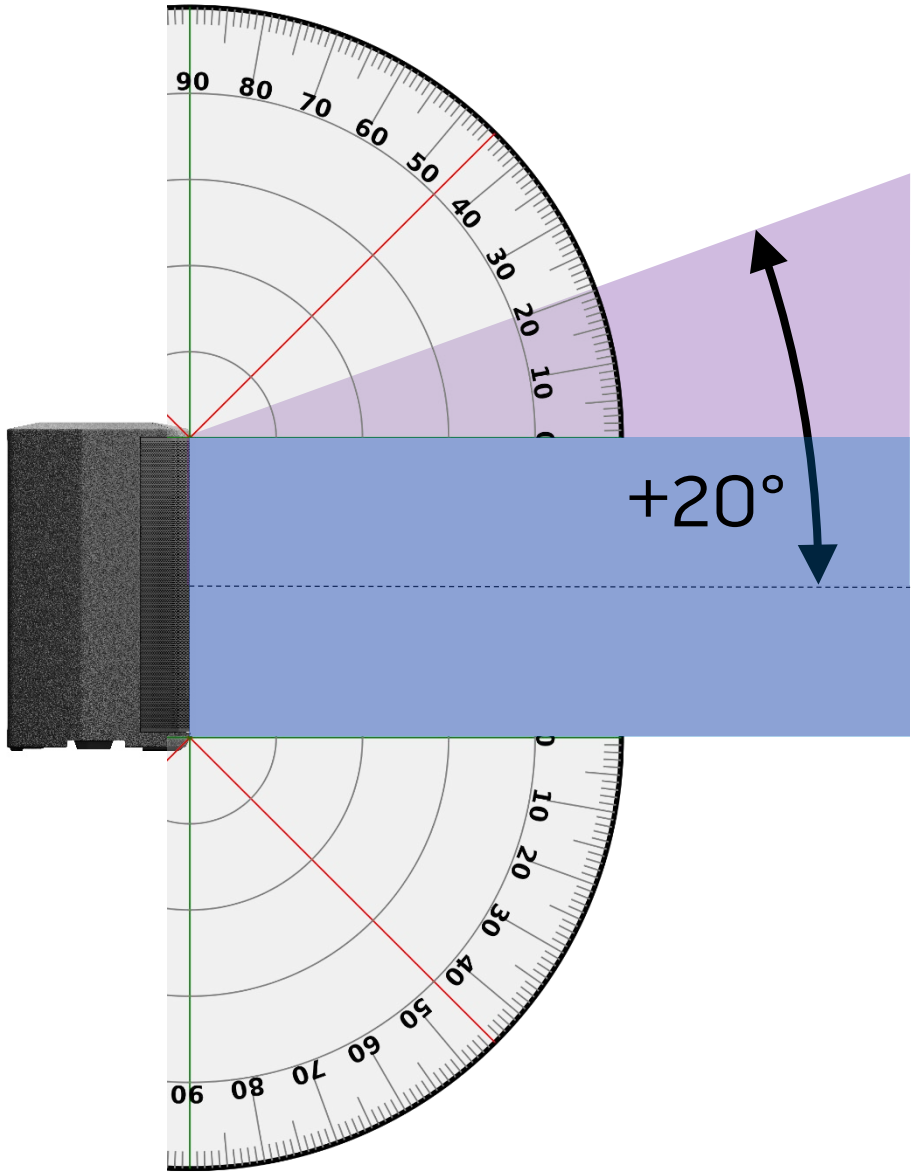
Vertical Dispersion Data

- The primary distinguishing feature of the F1 System is an adjustable vertical dispersion
- In the STRAIGHT configuration vertical dispersion is nominal (0°)
- In the “J” configuration the dispersion angle below the horizontal plane increases to 20°



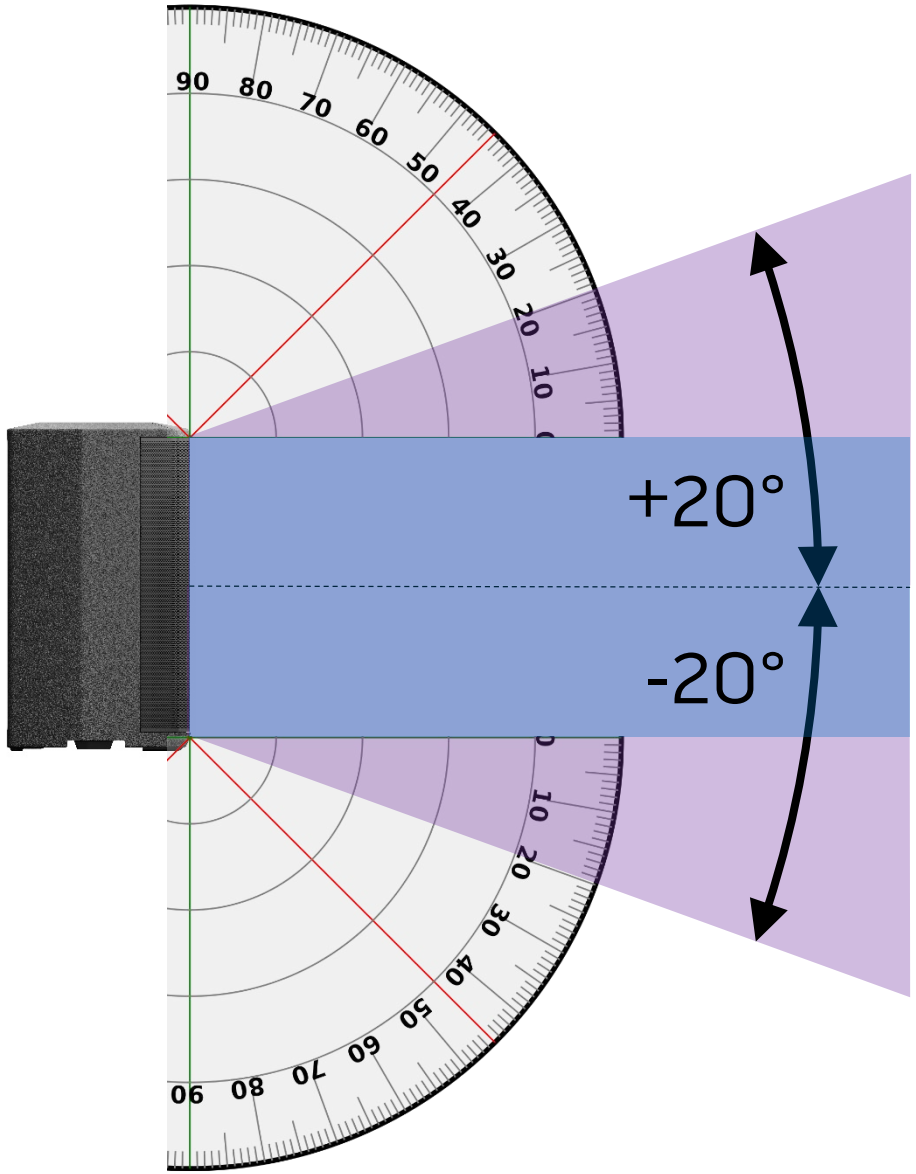
Vertical Dispersion Data

- The primary distinguishing feature of the F1 System is an adjustable vertical dispersion
- In the STRAIGHT configuration vertical dispersion is nominal (0°)
- In the “J” configuration the dispersion angle below the horizontal plane increases to 20°
- In the “REVERSE-J” configuration the dispersion angle above the horizontal plane increases to 20°



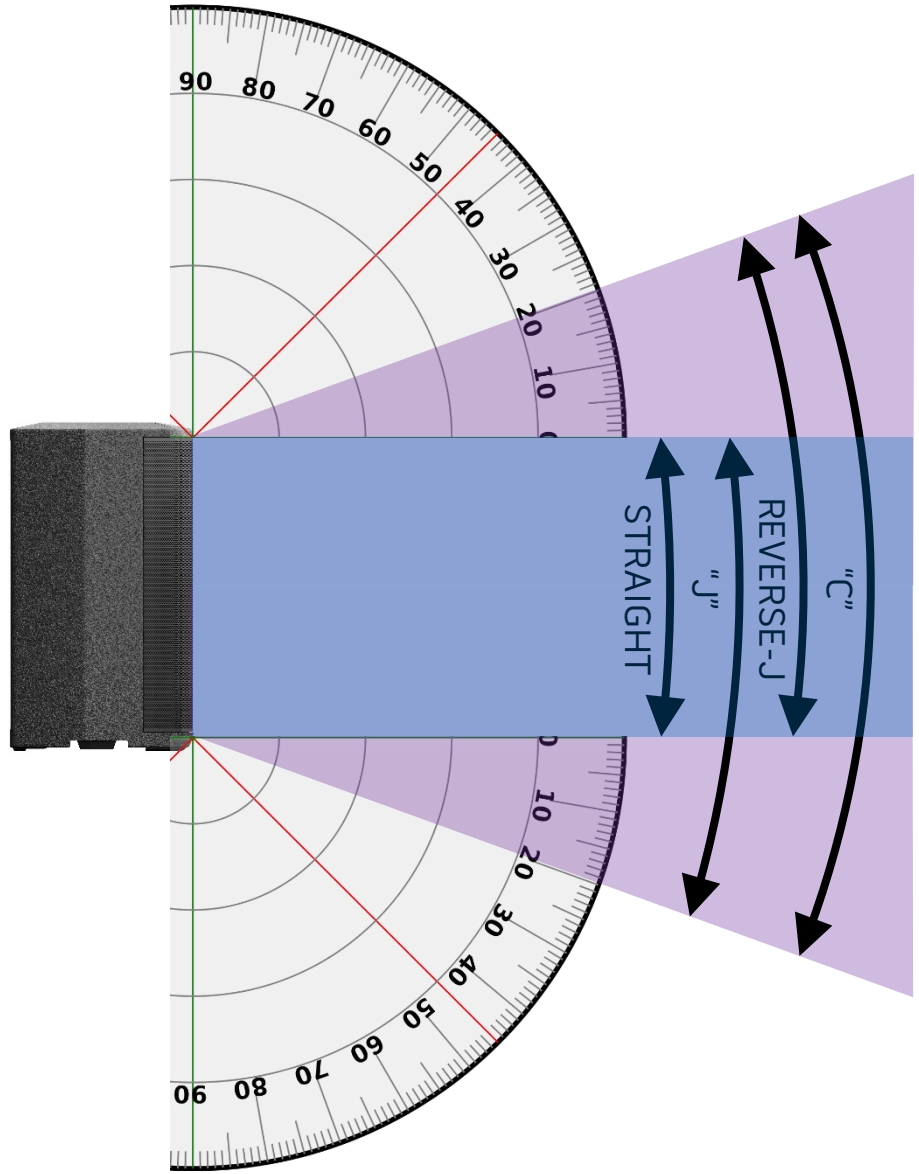
Vertical Dispersion Data

- The primary distinguishing feature of the F1 System is an adjustable vertical dispersion
- In the STRAIGHT configuration vertical dispersion is nominal (0°)
- In the “J” configuration the dispersion angle below the horizontal plane increases to 20°
- In the “REVERSE-J” configuration the dispersion angle above the horizontal plane increases to 20°
- In the “C” configuration the dispersion angle is 20° both above and below the horizontal plane



Vertical Dispersion Data

STRAIGHT	Nominal (0°)
“J”	+0/-20 degrees
“REVERSE J”	+20/-0 degrees
“C”	+20/-20 degrees



Input / Output

F1 Model 812 Input / Output Data

	INPUT 1	INPUT 2
Input	Combo Connector XLR Balanced OR ¼" Plug (TRS Balanced OR TS Unbalanced)	¼" TS/TRS, (2) RCA
Channel Gain	-Infinity to +34 dB (Line) -Infinity to +54 dB (MIC)	-Infinity to +26 dB(RCA) -Infinity to +20 dB(1/4")
Maximum Input Signal	+24 dBu (Line) +18 dBu (MIC)	+10 dBu (RCA) +18 dBu (¼" Unbalanced) +24 dBu (¼" Balanced)
Input Impedance	2.2 kΩ (MIC) 10 kΩ (Line)	10 kΩ (¼") 10 kΩ (RCA)
Controls	Volume	Volume

	OUTPUT
Output	XLR Balanced: Pin 1 (GND), Pin 2 (+), Pin 3 (-)
Nominal Signal	+2.2 dBu
Maximum Signal	+24 dBu

F1 Subwoofer Input / Output Data

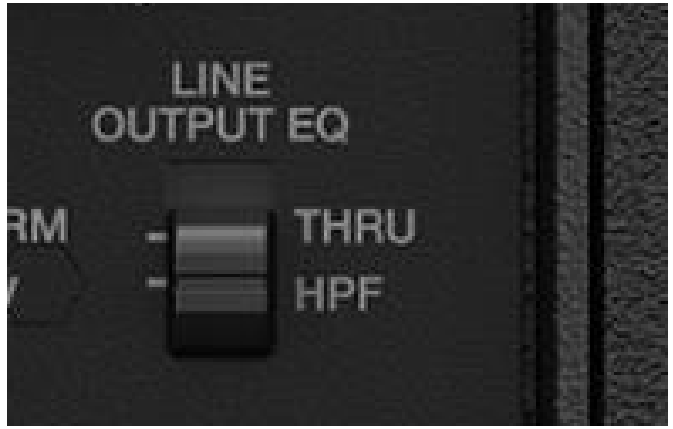
	INPUT 1 & 2
Input	Combo Connector XLR Balanced OR ¼" Plug (TRS Balanced OR TS Unbalanced)
Channel Gain	0 dB Gain: Line Input to Line Output (Not affected by Volume setting)
Maximum Input Signal	+18 dBu (Unbalanced) +24 dBu (Balanced)
Input Impedance	10kΩ
Controls	Single Volume for Combined Control

	OUTPUT 1 & 2
Output	XLR Balanced: Pin 1 (GND), Pin 2 (+), Pin 3 (-)
Nominal Signal	+2.2 dBu
Maximum Signal	+24 dBu

EQ Switches & Volume Controls

EQ Selector Switches

- F1 Model 812 EQ
  - **EQ applied to INPUT SIGNAL *ONLY***
  - FULL RANGE = No EQ
    - Performance down to 52Hz
  - WITH SUB = 100Hz High Pass Filter
- F1 Subwoofer EQ
  - **EQ applied to OUTPUT SIGNAL *ONLY***
  - THRU = No EQ
  - HPF = 100Hz High Pass Filter



F1 Model 812 EQ

Set to FULL RANGE when...

- No subwoofer in system
- Signal goes through subwoofer with High Pass Filter
- Additional bass extension

Set to WITH SUB when...

- Subwoofer in system
- Signal goes through subwoofer putting out FULL RANGE signal
- More balanced bass levels
- Independent sub level control

F1 Subwoofer Line Output EQ

Set to THRU…

- **All the time!**
  - *Except…*

Set to HPF…

- Connecting to High/Mid Loudspeaker with no HPF capability

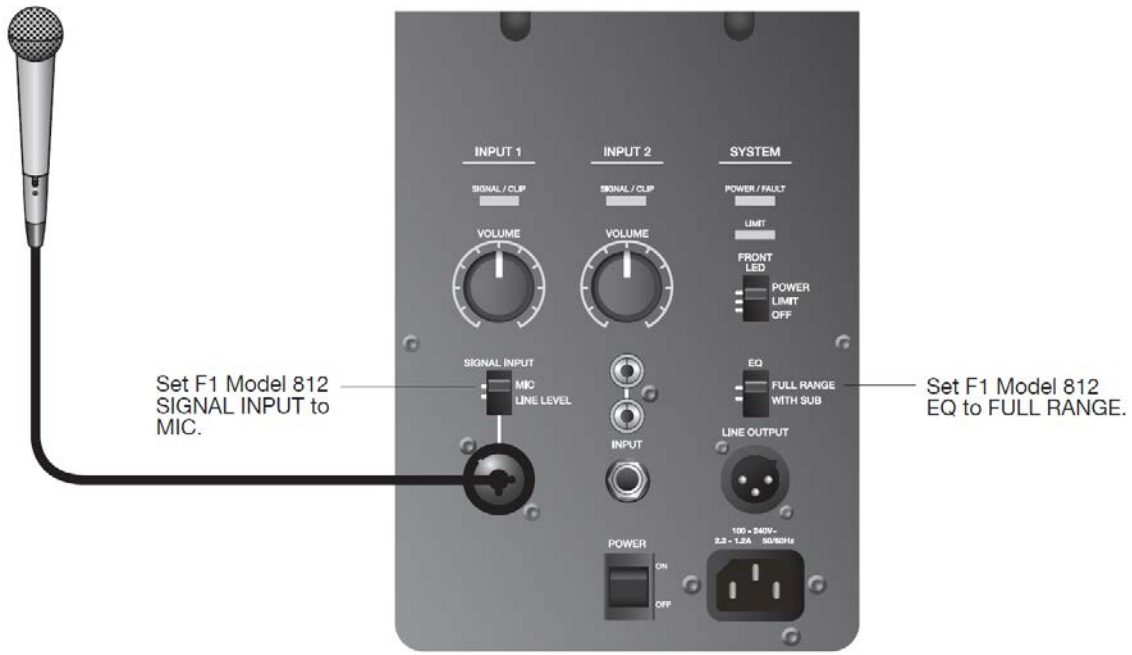
Volume Controls

- F1 Model 812 EQ
  - **Volume *DOES* affect LINE OUTPUT level**
  - Individual Volume Controls for each input
  - Knob @ 12 o'clock = 0 dB
- F1 Subwoofer EQ
  - **Volume *DOES* <u>*NOT*</u> affect LINE OUTPUT level**
  - Single Volume Control
  - Knob @ 12 o'clock = 0 dB

Example Setups

Single F1 Model 812

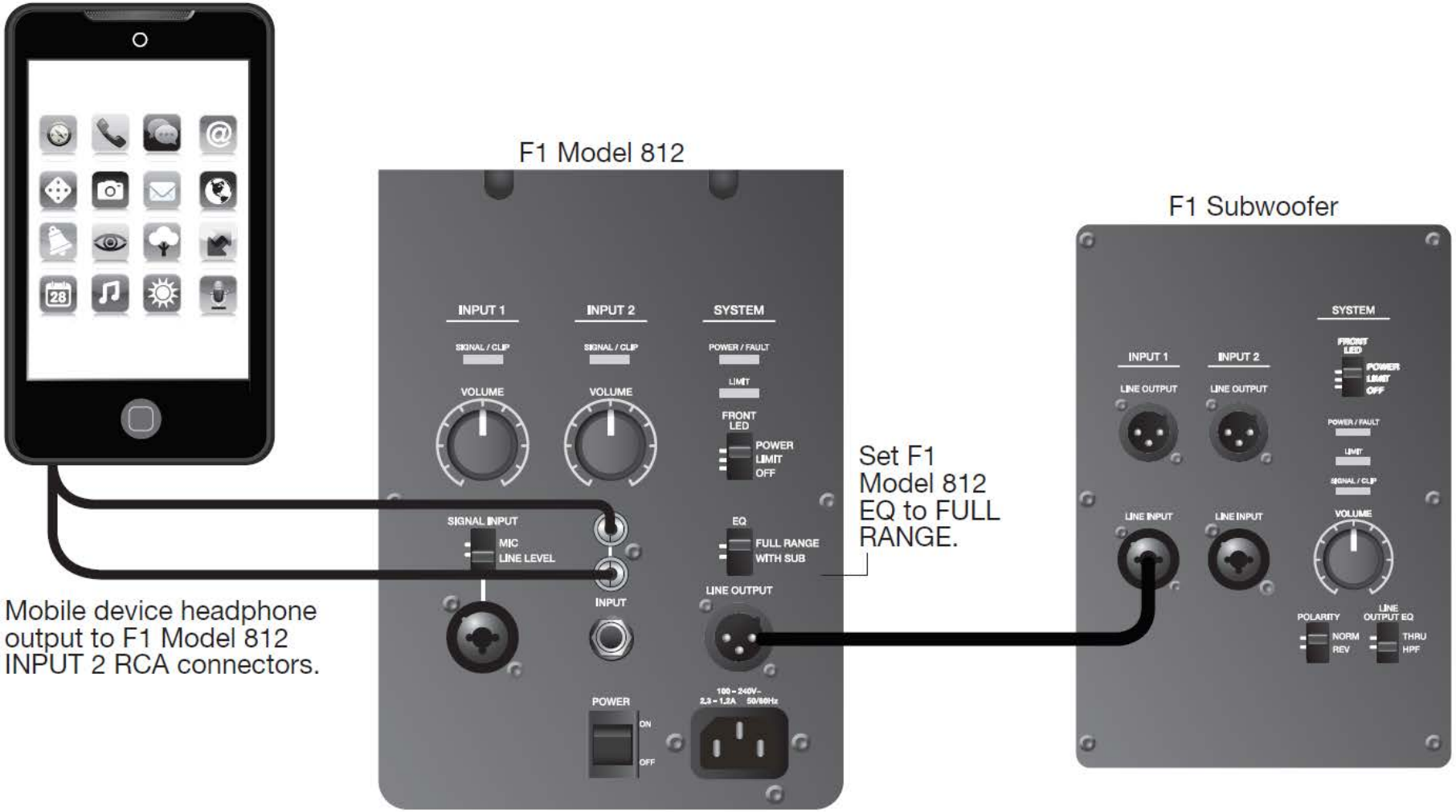
Mic to F1 Model 812 Loudspeaker INPUT 1



Mobile device to single F1 Model 812 Loudspeaker

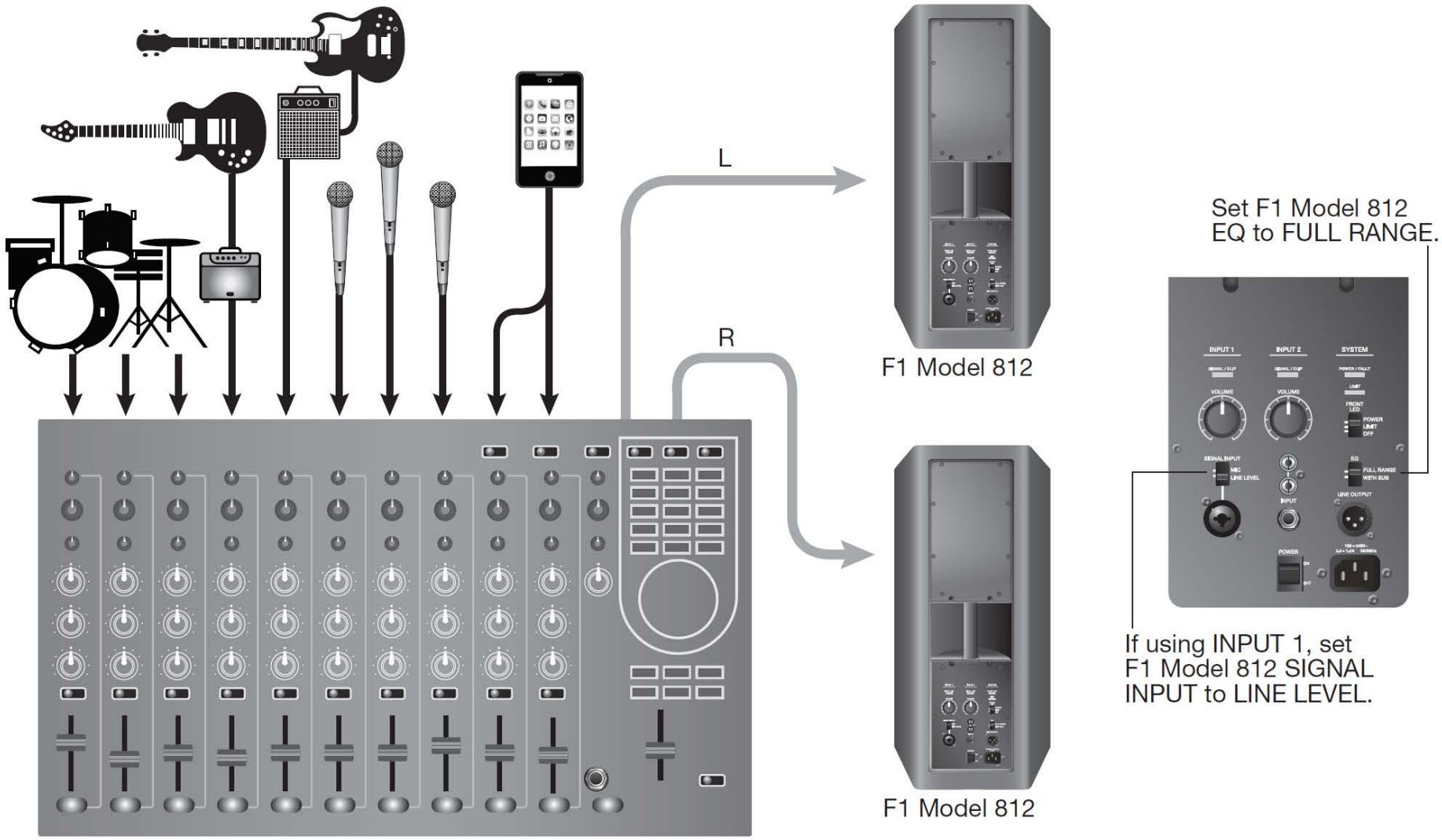
Adding the F1 Subwoofer

Mobile device to F1 Model 812 Loudspeaker and F1 Subwoofer



Stereo F1 Model 812

Full band, mixing console stereo output to L/R F1 Model 812 Loudspeakers

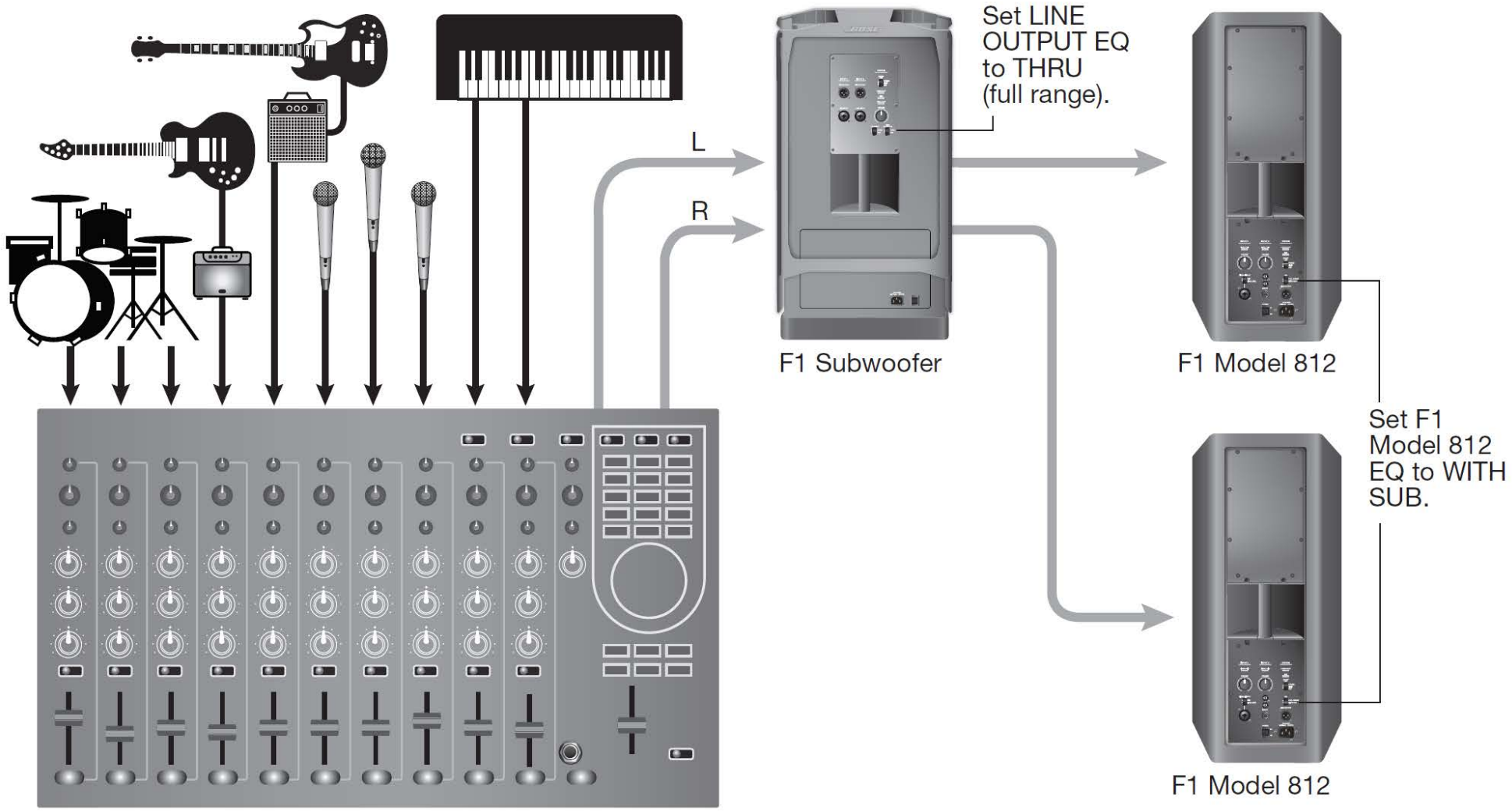


Set F1 Model 812
EQ to FULL RANGE.

If using INPUT 1, set
F1 Model 812 SIGNAL
INPUT to LINE LEVEL.

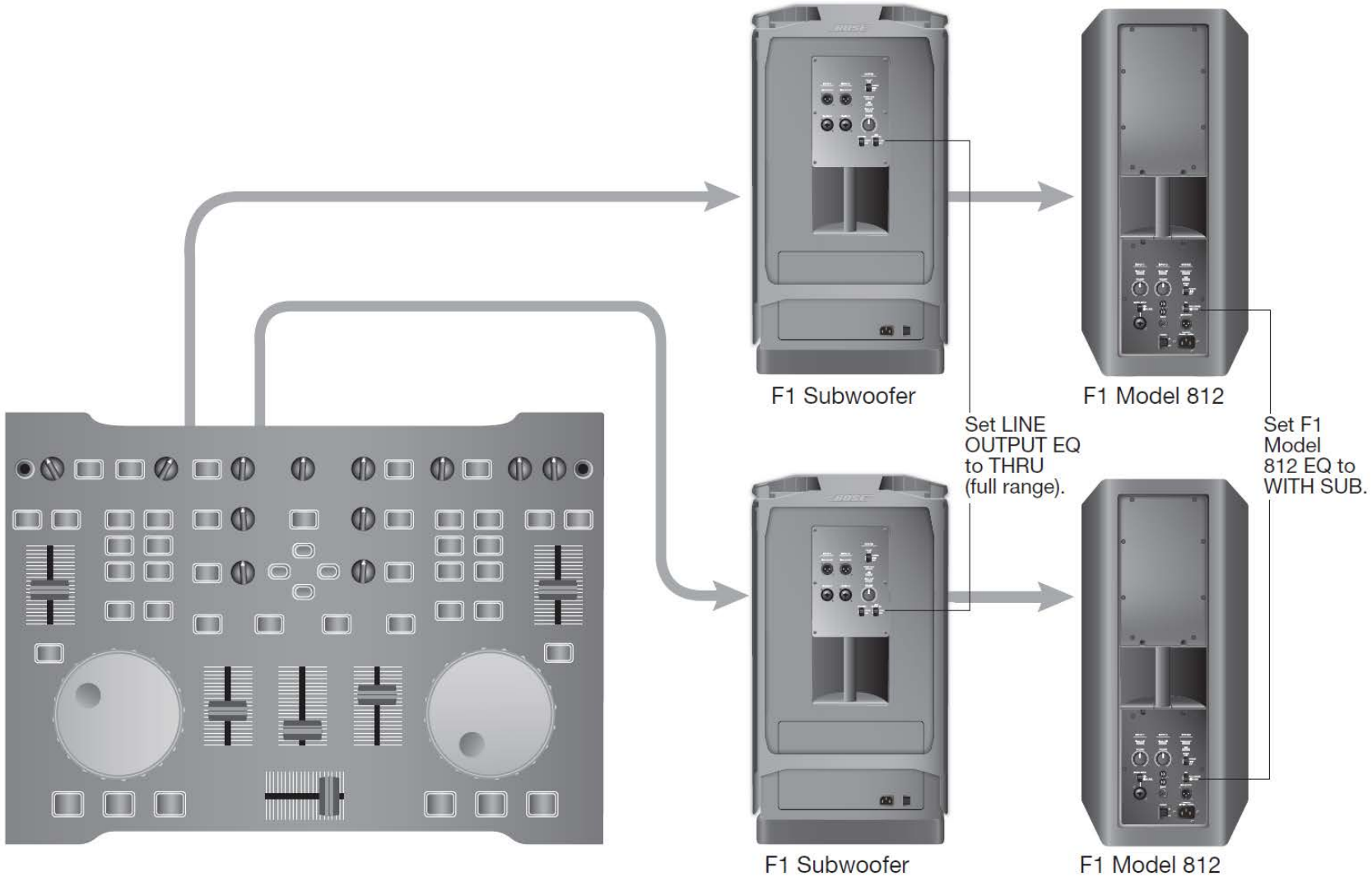
Stereo F1 Model 812 w/ Single F1 Subwoofer

Full band with mixing console, one F1 Subwoofer and two F1 Model 812 Loudspeakers



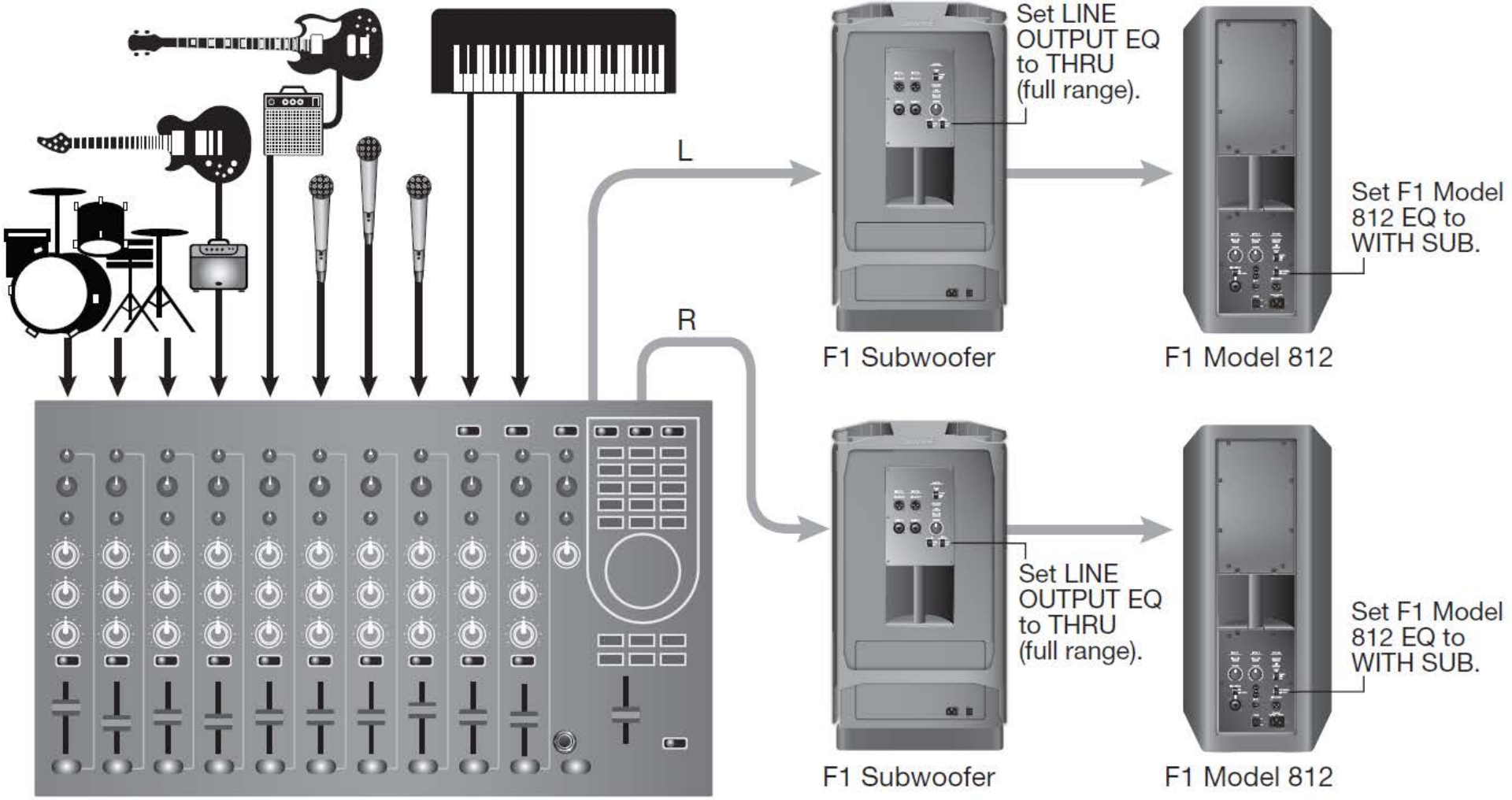
Stereo F1 System

DJ Console to two F1 Subwoofers and two F1 Model 812 Loudspeakers



Stereo F1 System

Full band with mixing console stereo output to two F1 Subwoofers and two F1 Model 812 Loudspeakers

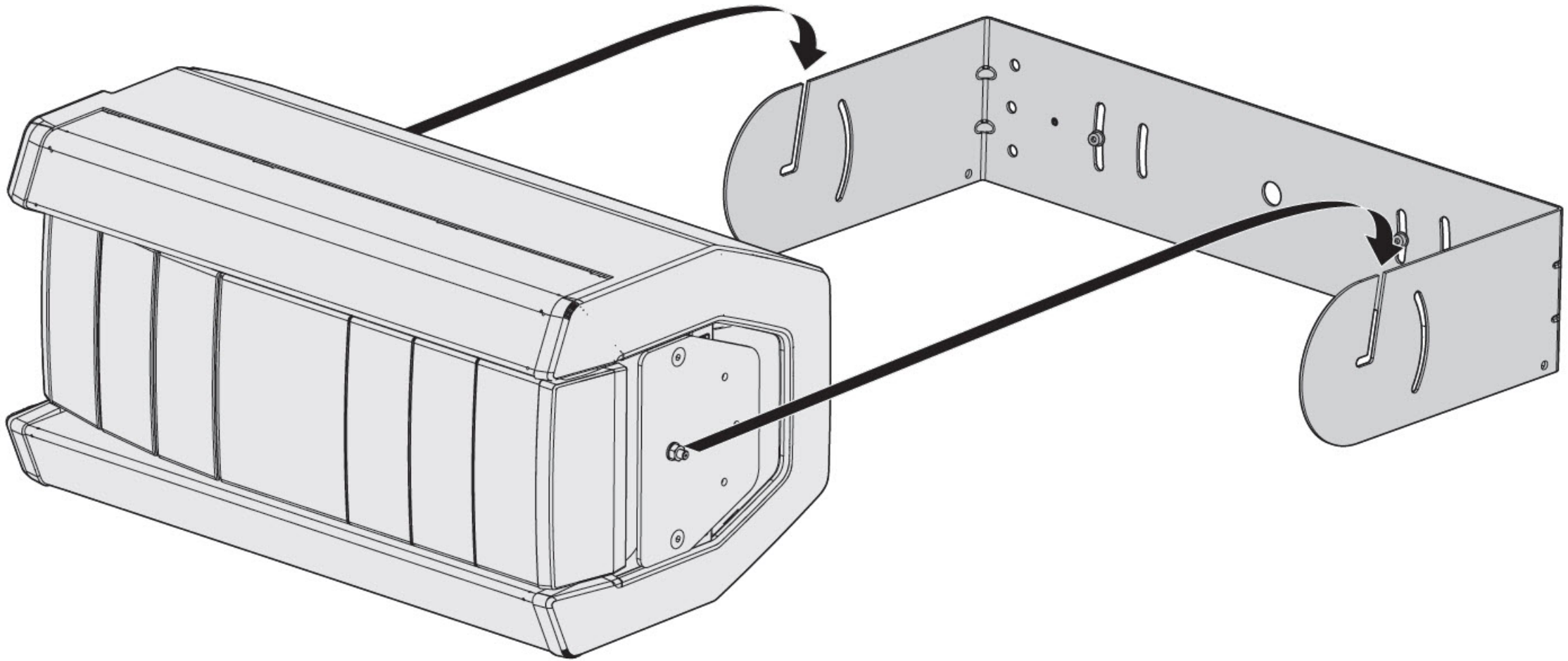


Mounting Brackets

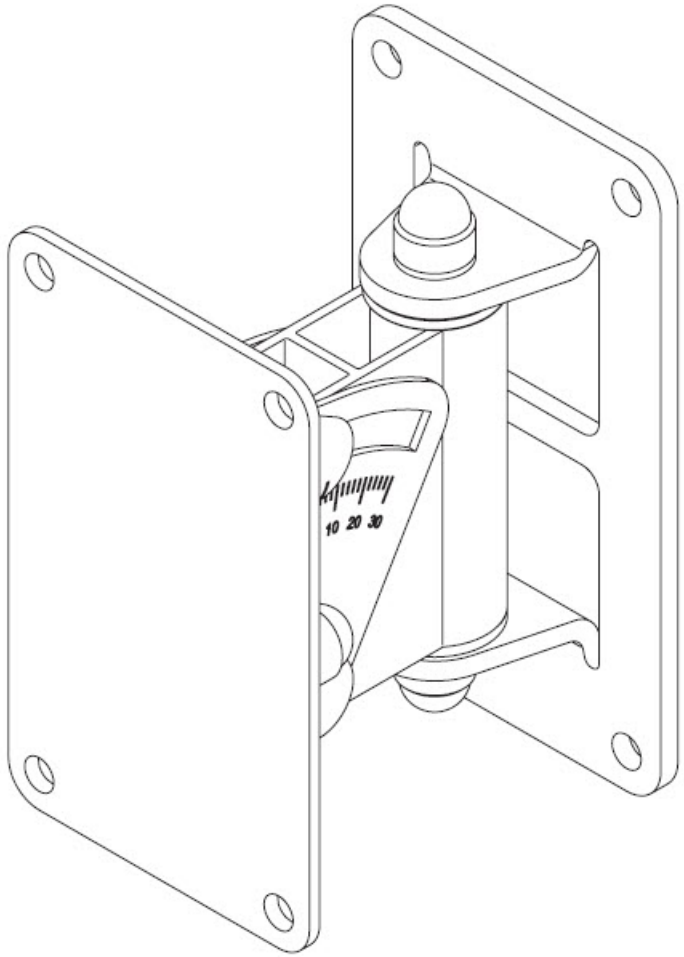
Mounting Brackets

- U-bracket
- Pan-and-Tilt bracket
- Yoke bracket

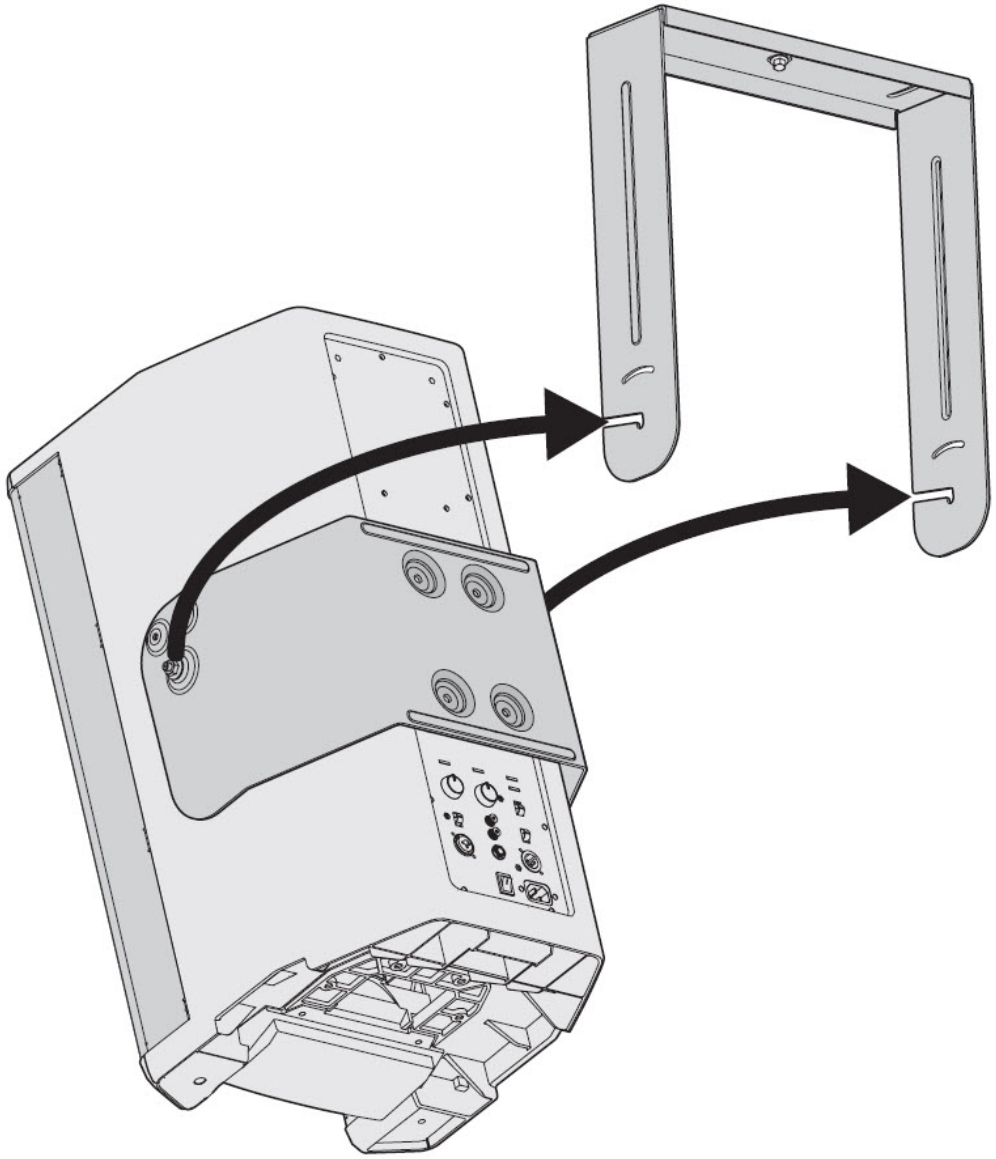
U-Bracket



Pan-and-Tilt Bracket



Yoke Bracket



Mounting Brackets

- U-bracket and Pan-and-Tilt bracket similar to brackets for RoomMatch Utility speakers
- Check pro.bose.com or the Bose Pro Education Center for the most recent versions of the installation guides

THANK YOU

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pro.Bose.com