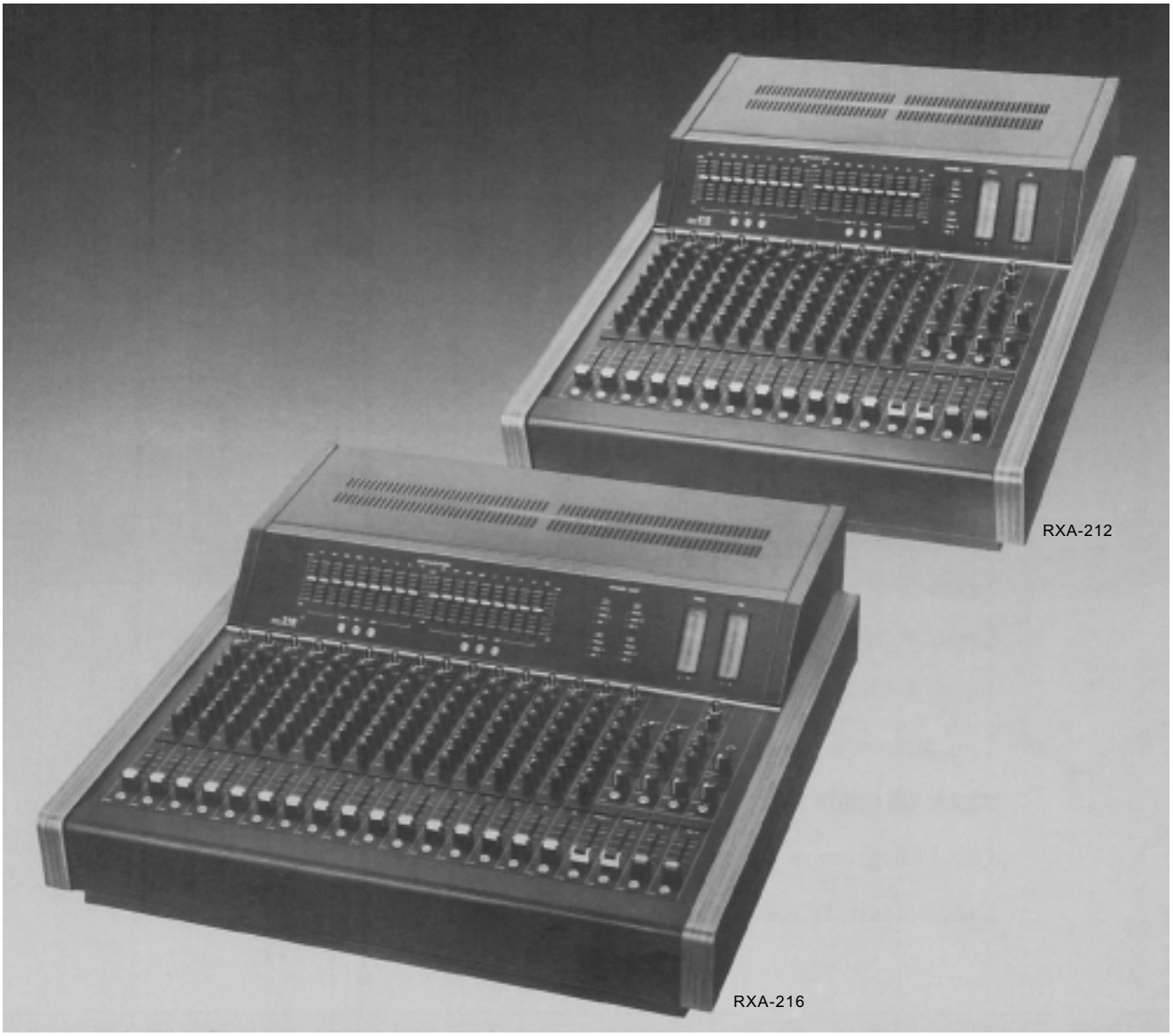
Operating Instruction Manual

TOA POWERED CONSOLE

Model RXA-212, RXA-216



TOA ELECTRIC CO., LTD.
KOBE, JAPAN

Contents

Precautions

1. Power Switch
The power switch should be on after all connections have been completed.

2. XLR (Cannon) Connectors
The connectors are wired in the following manner: Pin 1 is ground (shield); pin 2 is cold (low, minus); pin 3 is hot (high, plus).

3. Description of components and functions on the RXA-212 and RXA-216.
In our Operating and Instruction Manual explanation of components and functions is made according to our usage for them.

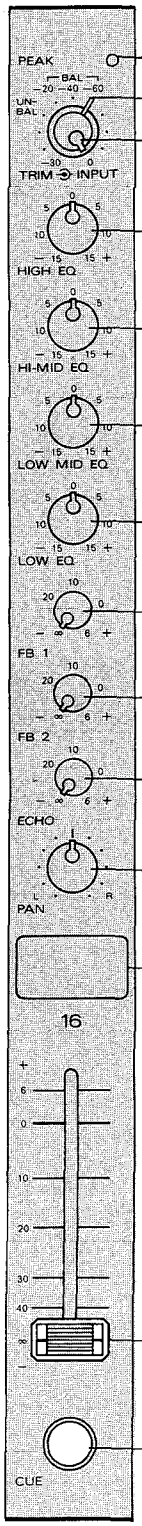
General Description

The RXA-212 is a self-powered console with 12 input channels, 2 program outputs, 2 foldback outputs, 1 echo output, and 2 built-in power amplifiers of 120 watts each into 8 ohms. The RXA-216 is a self-powered console with 16 input channels, 2 program outputs, 2 foldback outputs, 1 echo output, and 4 built-in power amplifiers of 120 watts each into 8 ohms. Each input channel has a balanced, low impedance, transformer-isolated, XLR connector, and a high impedance, unbalanced, 1/4" jack. An input level switch and trim control on each input channel are provided to permit optimum gain settings. A four-band equalizer is included on each input channel. A peak indicator LED on each input detects excessive inputs and helps avoid clipping. A pan control on each input channel assigns the fader output signal of the channel to program L and R. A cue switch on each input channel, stereo input, aux-echo input, program output, foldback output and echo send allows monitoring the respective, pre-fader (pre-volume) signals through the phones output. All faders are log-linear type with 60mm travel. Two additional stereo inputs are used to connect stereo playback decks, disk players and other auxiliary equipment. Two independent foldback outputs are included, (pre-fader, pre-EQ) signals. An analog, electronic echo is built in, but can be bypassed (via Echo Send/Return) for external delay, reverb or special effects. Dual Graphic Equalizers (1/1 octave, 9 bands) are switchable to program outputs, foldback outputs, or "off". A fluorescent bargraph peak meter (2-color, vertical type) monitors the outputs of program L and R, and foldback 1 and 2. Each power amplifier is switchable to either program or foldback outputs or can be connected to external input sources. The RXA-212 and 216 are designed for use in professional sound reinforcement systems, and provide the versatility necessary to meet a wide range of requirements. The high performance and modular construction assures reliability, easy maintenance, and serviceability.

Features

1. 2 built-in power amplifiers of 120 watts each into 8 ohms (RXA-212). 4 built-in power amplifiers of 120 watts each into 8 ohms (RXA-216).
2. Internal power amplifiers may be used for either program outputs or foldback outputs, or can be used independently with external sources.
3. Balanced, low impedance, (transformer-isolated) XLR connector plus unbalanced high impedance 1/4 inch jack, on each input channel.
4. Input level switch and trim control on each input channel.
5. Peak indicator LED on each input channel.
6. Four-band equalizer on each input channel.
7. Cue switch on each input channel, stereo input, AUX echo input, program output, foldback output and echo send for permitting monitoring the respective pre-fader (pre-volume) signals through the phones output.
8. All faders are log-linear type with 60mm travel.
9. Two additional, stereo inputs for connecting stereo playback decks, disk players and other auxiliary equipment.
10. Built-in, electronic analog echo unit.
11. Dual graphic equalizers (1/1 octave, 9 bands) are switchable to either the program or foldback outputs.
12. Fluorescent bargraph peak meters for monitoring the program L and R, and foldback 1 and 2.

Front Panel, Input Section (RXA-212, RXA-216)



Peak Indicator
The peak indicator lights if clipping occurs in the pre-amp stage of the corresponding input channel. When the light comes on, an adjustment must be made with the Input Level Selector Switch and/or the Input Trim control.

Input Level Selector Switch (INPUT)
Selection is made in accordance with the output of the microphone or other equipment connected to each input channel (XLR connector and phone jack). (-20, -40 and -60) dB indicates the input sensitivity of the XLR connector input when the trim control is set at the "0" position. The "UN-BAL" position permits using the phone jack input. The unbalanced input sensitivity is -30dB when the trim control is set at the "0" position.

Input Trim Control (TRIM)
The input trim varies the gain of the pre-amplifier stage of each input channel, providing a continuously variable control of gain in the range of 0 to -30dB from the input level switch position. For instance, with the input level selector switch set at -60dB, the variable range is between -60dB and -30dB.

High Equalizer Control (HIGH EQ)
The high control in each input channel alters the frequency response of the channel input, allowing a variety of high frequency characteristics. The high control provides ±15dB of continuously variable shelving equalization at 10kHz, having flat audio response at the detented "0" position.

High-Mid Equalizer Control (HI-MID EQ)
The high-mid control provides ±15dB of continuously variable peaking equalization at 3kHz. The detented "0" position is flat.

Low-Mid Equalizer Control (LOW MID EQ)
The low-mid control provides ±15dB of continuously variable peaking equalization at 300Hz, having flat audio response at the detented "0" position.

Low Equalizer Control (LOW EQ)
The low control provides ±15dB of continuously variable shelving equalization at 100Hz, having flat audio response at the detented "0" position.

Foldback Control 1 (FB 1)
The Foldback 1 control assigns the pre-equalizer, pre-fader input signal to the foldback 1 mixing bus. This control is used to route the input signal to stage monitor systems.

Foldback Control 2 (FB 2)
The Foldback 2 control assigns the pre-equalizer, pre-fader signal to the foldback 2 mixing bus.

Echo Control (ECHO)
The echo control assigns the post-equalizer, post-fader signal to the echo bus.

Pan Pot (PAN)
This control assigns the fader output signal of the channel to the Program L, R mixing busses. At the center position, the pan pot routes the signal equally to the L and R mixing busses. Panning from one side to the other gradually assigns the input signal to either the Program L or R mixing busses exclusively.

Writing Block
The name of the input equipment or microphone setting can be written in with an eraseable felt pen or a wax pencil.

Input Fader
The fader provides continuously variable adjustment of the channel's output to the program L and R mixing busses, and to the echo mixing bus. The nominal level is at the "0" position, with the fader retaining a 6dB margin.

Cue Switch (CUE)
The cue switch is for monitoring the post-EQ, pre-fader signal in each input channel through headphones. The switch is a "push-on push-off" type. When more than two switches are "on", the signals are combined.

Front Panel, Output Section (RXA-212, RXA-216)

FB 1 Volume Control (FB1)
This control attenuates the echo-return signals from the built-in echo or an external echo unit and assigns them to the FB 1 mixing bus.

FB 2 Volume Control (FB2)
This control attenuates the echo-return signals from the built-in echo or an external echo unit and assigns them to the FB 2 mixing bus.

Stereo Input Switches (INPUT)
Each switch has two positions, aux and phono. The aux position accepts line level signals such as tape recorders. The phono position provides direct input and RIAA equalization for a turntable.

FB 1 Volume Control (FB1)
This control attenuates the stereo input signals, mixes them to a monaural signal, and assigns them to the FB 1 mixing bus.

FB2 Volume Control (FB2)
This control attenuates the stereo input signals, mixes them to a monaural signal, and assigns them to the FB 2 mixing bus.

Balance Control (BALANCE)
This control adjusts the level balance of the stereo input signals fed to the program L & R mixing busses.

Writing Block
The name of the input equipment can be written in with an eraseable felt pen or a wax pencil.

Stereo Input Volume Controls (STEREO 1, STEREO 2)
These controls adjust the level of the stereo in 1 and 2 signals to be fed to the program L and R mixing busses.

Cue Switch (CUE)
The cue switch is for monitoring the pre-fader signal in each stereo input channel through headphone. This feature is useful for cueing the start of a tape or record.

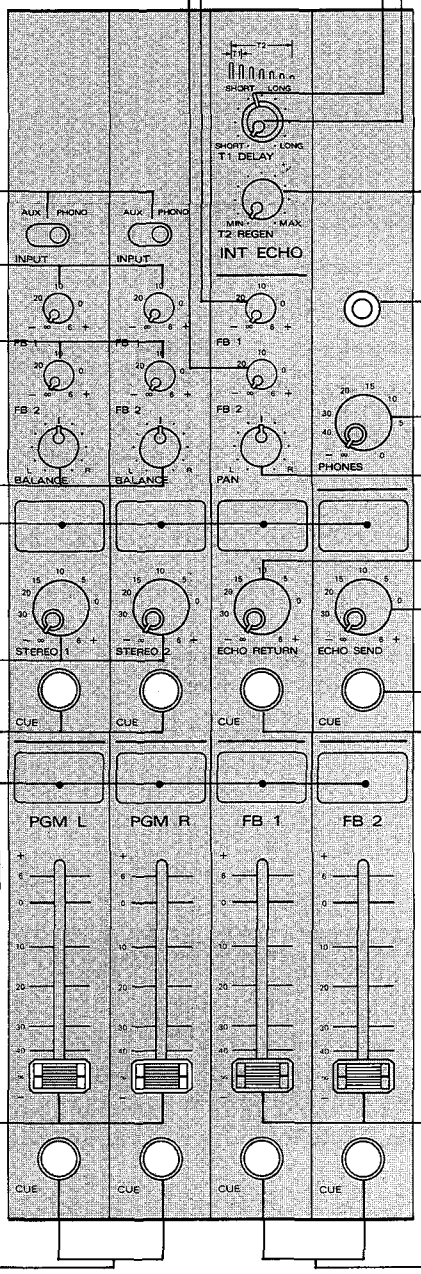
Writing Block
The name of the input equipment or microphone setting can be written in with an eraseable felt pen or a wax pencil,

Program Fader L and R (PGM L, PGM R)
The program faders control the overall signal level of the program mixes which are fed to the program L & R outputs, and thus the output level of the assigned internal power amplifier.

Cue Switches (CUE)
The cue switch is for monitoring the pre-fader program signals through headphone. This is useful for independent audition of the program mixes.

Echo Time Control (T1 DELAY)
This control permits continuously variable adjustment of the echo time in either short or long ranges. The short range is from 14m to 40m seconds; the long range is from 40m to 140m seconds.

Echo Time Switch (SHORT, LONG)
The switch changes the echo time to either the short or the long range.



Regeneration Control (T2 REGEN)
The T2 control is provided to adjust the echo pattern (number of repeats) of the internal analog delay.

Headphone Jack
The headphone jack will accept any stereo headphone with 8 ohms impedance, or higher.

Phones Level Control (PHONES)
The phones level control adjusts both the program L and R signals fed to the phones output and permits stereo monitoring when the cue switch is off. When the cue switch is on, the control adjusts the corresponding cue signal. When two or more of the cue switches are on, the control adjusts the corresponding combined cue signals.

Pan Pot (PAN)
The pan pot control assigns the signals from the built-in echo or external echo unit to the program L and R.

Echo Return Volume Control (ECHO RETURN)
This control sets the signal level from the built-in echo or from an external echo unit and sends it (through the pan control) to the program L and R.

Echo Send Volume Control (ECHO SEND)
This control is provided to adjust the overall signal level of the echo mix to the echo send output, or to the internal analog delay.

Cue Switch (CUE)
The cue switch is used for monitoring the signal prior to the Echo/Send volume control.

Cue Switch (CUE)
The cue switch is used for monitoring the signal prior to the Echo/Return volume control.

FB Fader 1 and 2 (FB1, FB2)
These faders control the overall signal level of the mixes which are fed to FB outputs 1 and 2.

Cue Switch (CUE)
The cue switch is used for monitoring the signals prior to the FB 1 and 2 outputs.

Meter Panel (RXA-212, RXA-216)

RXA-212

Graphic Equalizer (EQUALIZATION)
Two channel, 1/1 octave graphic equalizer with 9 bands (filters) enables 12dB of boost and attenuation at each center frequency with the "0" position of each filter providing flat response. The graphic equalizer is switchable to either the program or foldback outputs, or "off" for A-B comparison.

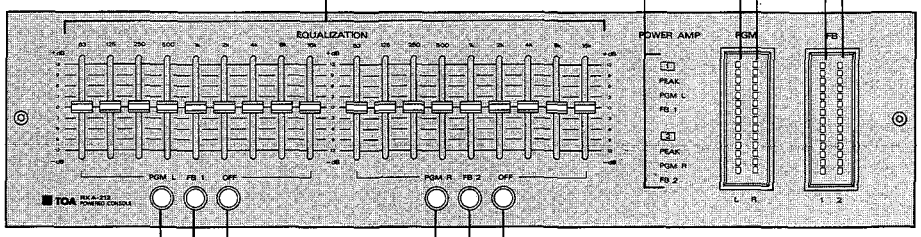
Power Amplifier Indicators (POWER AMP 1, 2)
Green LED's indicate that each amplifier is connected to either the FB output or program output; red LED indicates that the output of each amplifier is near clipping. The power amplifier assignment switch is located on the rear panel.

Program L Output Meter (PGM L)
The meter indicates the program L output level.

Program R Output Meter (PGM R)
The meter indicates the program R output level.

FB 1 Output Meter (FB 1)
The meter indicates the FB 1 output level.

FB 2 Output Meter (FB 2)
The meter indicates the FB 2 output level.



Graphic Equalizer Selector Switch (PGML, FB1, OFF)
The 3-position switch assigns the equalizer to either the program L or FB 1 circuits, with the "off" position completely removing the equalizer from the signal flow path.

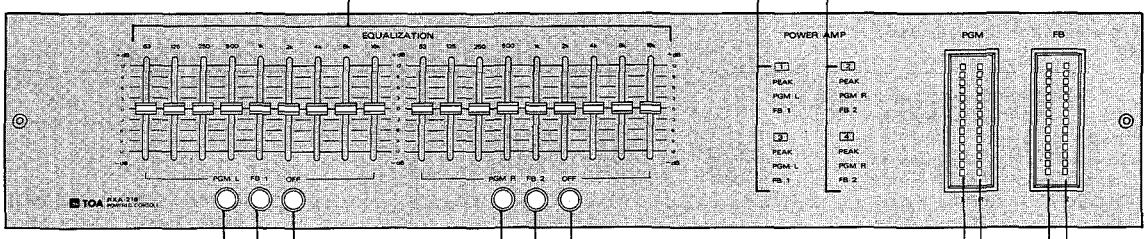
Graphic Equalizer Selector Switch (PGM R, FB 2, OFF)
The 3-position switch assigns the equalizer to either the program R or FB 2 circuits, with the "off" position completely removing the equalizer from the signal flow path.

RXA-216

*The RXA-216 is the same in its meter panel functions as the RXA-212, except for the Power Amplifier Indicators.

Power Amplifier Indicators, 1, 2, 3 and 4 (POWER AMP 1, 2, 3, 4)
Green LED's indicates that the corresponding amplifier is connected to either the FB output or program output; red LED indicates that the output of the corresponding amplifier is near clipping.

Graphic Equalizer (EQUALIZATION)



Graphic Equalizer Selector Switch (PGM R, FB 2, off)

Program L Output Meter

Program R Output Meter

FB 1 Output Meter

FB 2 Output Meter

Graphic Equalizer Selector Switch (PGM L, FB 1, off)

Rear Panel (RXA-212)

Power Fuse (FUSE)

Power Switch (POWER)
This switch provides AC power to the mixer. Power should only be applied after all audio connections have been completed.

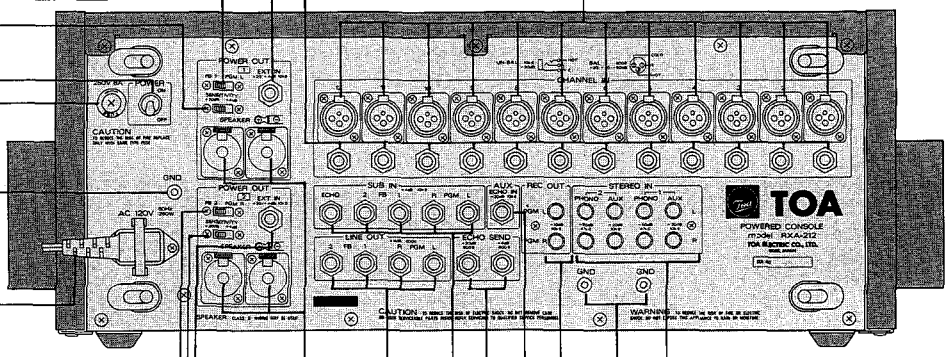
Power Amplifier 1 Sensitivity Switch (SENSITIVITY)
This switch changes the input sensitivity of built-in amplifier 1 to either +20dB or +4dB.

Power Amplifier 1 Input Selector Switch
This switch assigns built-in amplifier 1 to either FB1 or PGM L mix.

Power Amplifier 1 Input Jack (EXT IN)
The jack is provided to independently drive power amplifier 1 with external equipment. When a plug is inserted, the amplifier is automatically "switched" out or the internal mixing circuitry.

Channel Input, Unbalanced Jacks (CHANNEL IN 1—12)
These 12 standard 1/4" phone jacks are unbalanced with an input level of –30dB and input impedance of 10k ohms. They will accept low or high impedance sources. When plugs are inserted into these jacks, the input level switch must be set to the "UN-BAL" position.

Channel Input, Balanced Connectors (CHANNEL IN 1—12)
The XLR connectors are balanced, transformer-isolated, floating, with an input impedance of 600 ohms, and will accept low impedance microphones as well as other impedance sources. When the XLR connectors are employed, the input level switch on the front panel must be set at the "BAL" positions. Proper adjustment of both input level switch and trim control make it possible to provide the optimum setting for each input.



Ground Terminal (GND)
The chassis must be grounded.

Power Cord

Power Amplifier 2 Input Jack (EXT IN)
The jack is provided to independently drive power amplifier 2 with external equipment.

Power Amplifier 2 Sensitivity Switch (SENSITIVITY)
The switch changes the input sensitivity of the built-in amplifier 2 to either +20dB or +4dB.

Power Amplifier 2 Input Selector Switch
This switch assigns the built-in amplifier 2 to either FB 2 or PGM R mix.

Speaker Output Jacks (SPEAKER)
Each built-in amplifier will drive speaker systems with an impedance of 8 ohms. When more than two speakers are connected to each paired speaker jack, the total impedance of the speaker systems may be 8 ohms. These jacks are locking type, so that press the stopper on the plug when taking off the jacks.

Line Output Jacks (LINE OUT, PGM L, R, FB1, 2)
These jacks are the outputs of the console deriving the signals prior to the built-in power amplifiers. The jacks are provided for connection to external power amplifiers, and can be also for output cascading. The output impedance and level are 600 ohms and +4dB, respectively.

Sub Input Jacks (SUB IN PGM L, R, FB 1, 2, ECHO)
These five jacks are directly connected to the corresponding mixing busses (program L, R, FB1, 2, and echo), and are provided for cascade connection to expand the input capacity.

Stereo Input Pin jacks (STEREO IN 1, 2)
Each stereo input has both AUX input and PHONO input connectors that are switchable on the front panel. RIAA equalization is provided on the phono input for accepting turntables with magnetic cartridges.

Ground Terminals (GND)
These may be used to provide ground connection for tape decks or turntables.

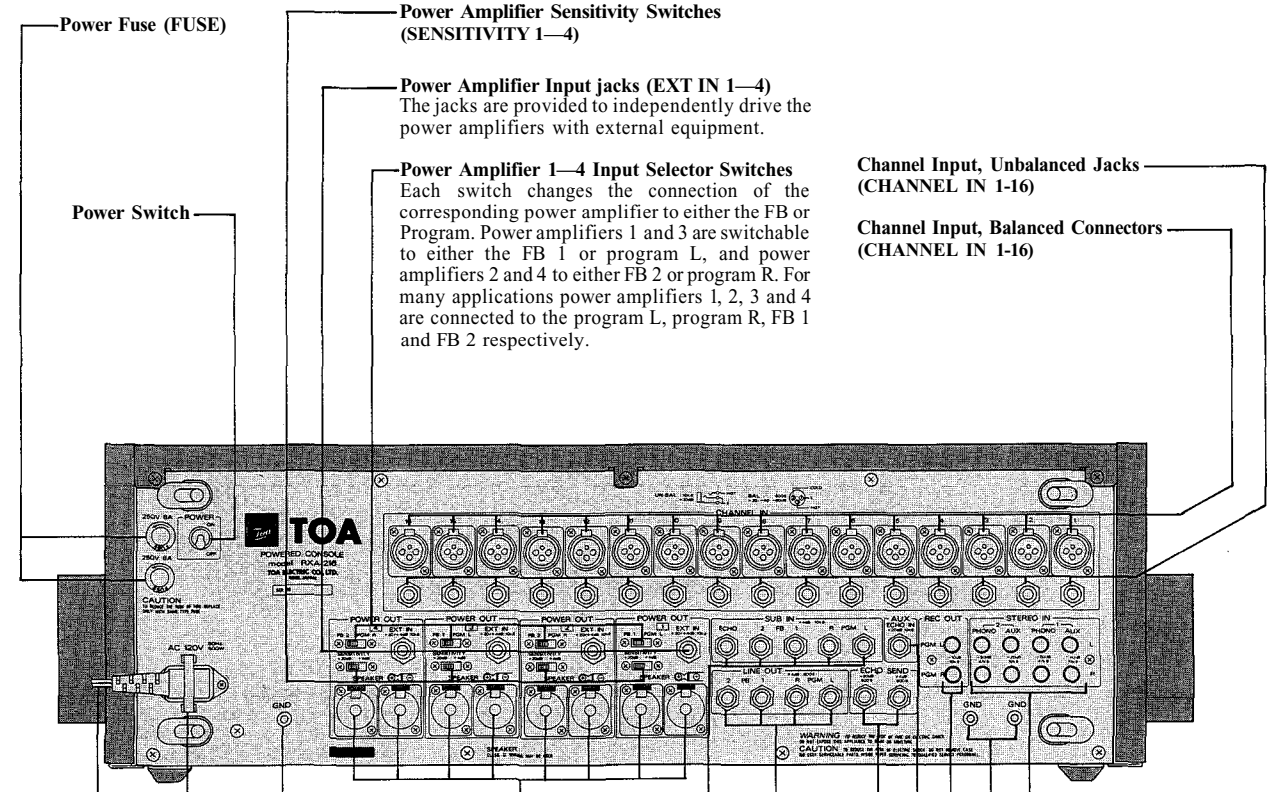
Recording Output Pin Jacks (REC OUT, PGM L, R)
The jacks are unbalanced and provide pre-graphic EQ, pre-program fader signals for connection to tape recorders.

Auxiliary Echo Input Jack (AUX ECHO IN)
This standard phone jack is unbalanced and accepts low or high impedance sources at nominal —20dB level. The jack sends an echo or reverb return signal directly to the program L and R mixing busses. Inserting a plug in the jack interrupts the return signal from the built-in echo unit. The echo or reverb return signal can be controlled by the echo return volume on the front panel.

Echo Output Jacks (ECHO SEND)
These jacks are unbalanced, with an output impedance of 600 ohms. One jack is for +4dB output and the other is for —20dB output. The jacks are provided for connection to external echo machines. The +4dB jack can be used for output cascading.

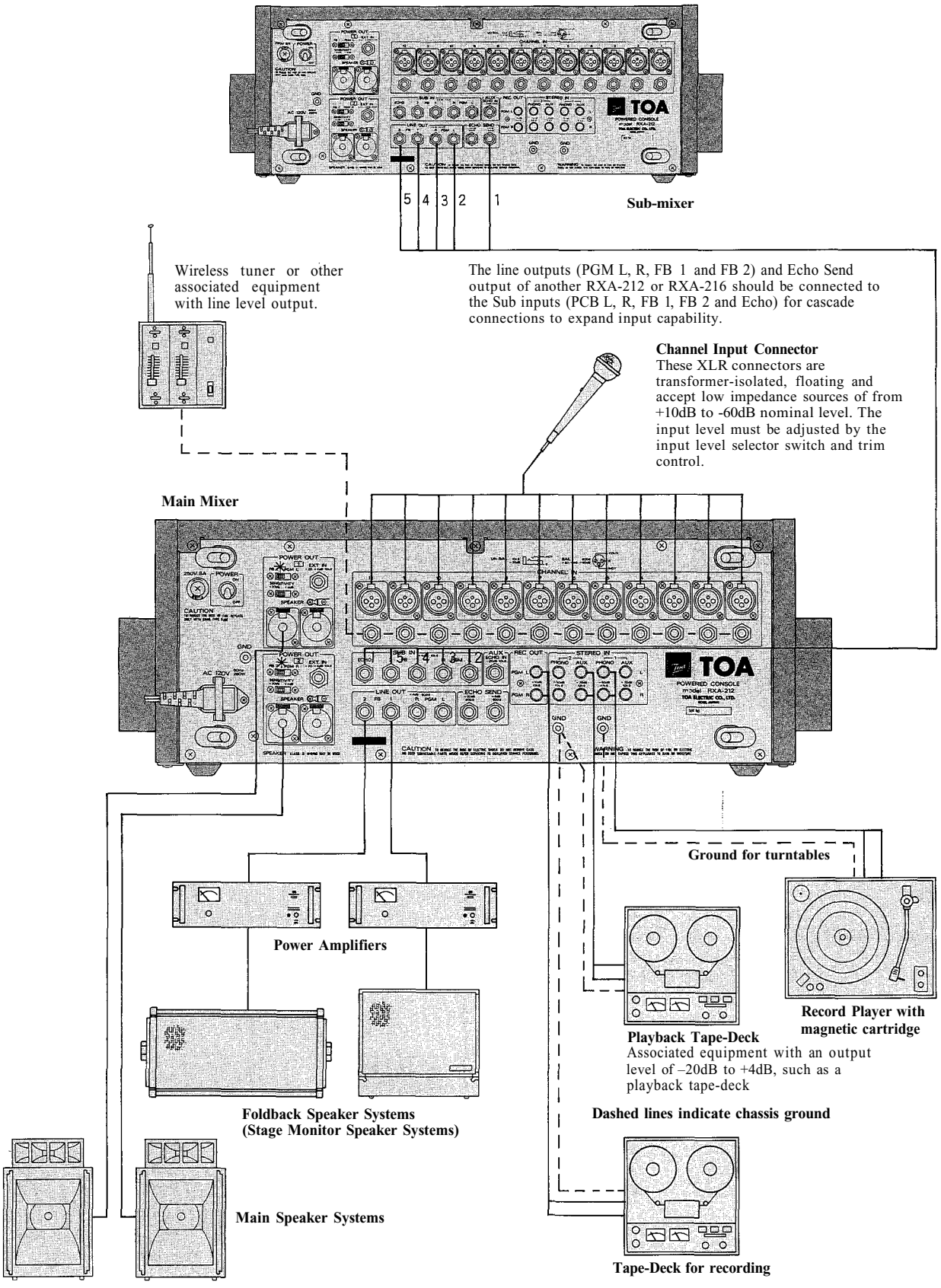
Rear Panel (RXA-216)

The RXA-216 is the same as the RXA-212 in functions, except that the RXA-216 has 16 inputs and 4 built-in amplifiers.



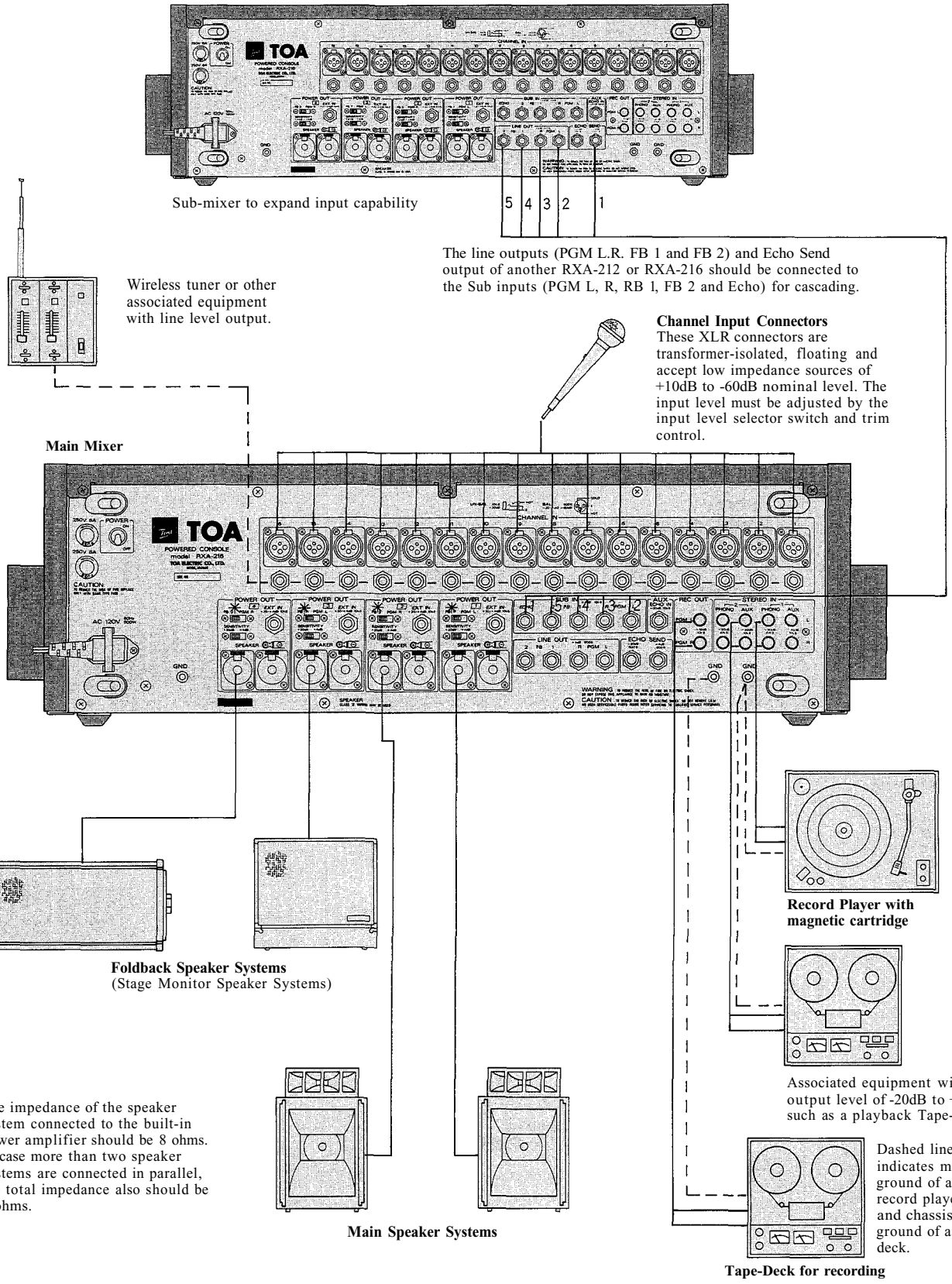
Connection Example (RXA-212)

When the built-in power amplifiers are used to drive the speaker systems for main speaker systems, the power amplifier input selectors shown by "*" mark should be set to the PGM L and R.



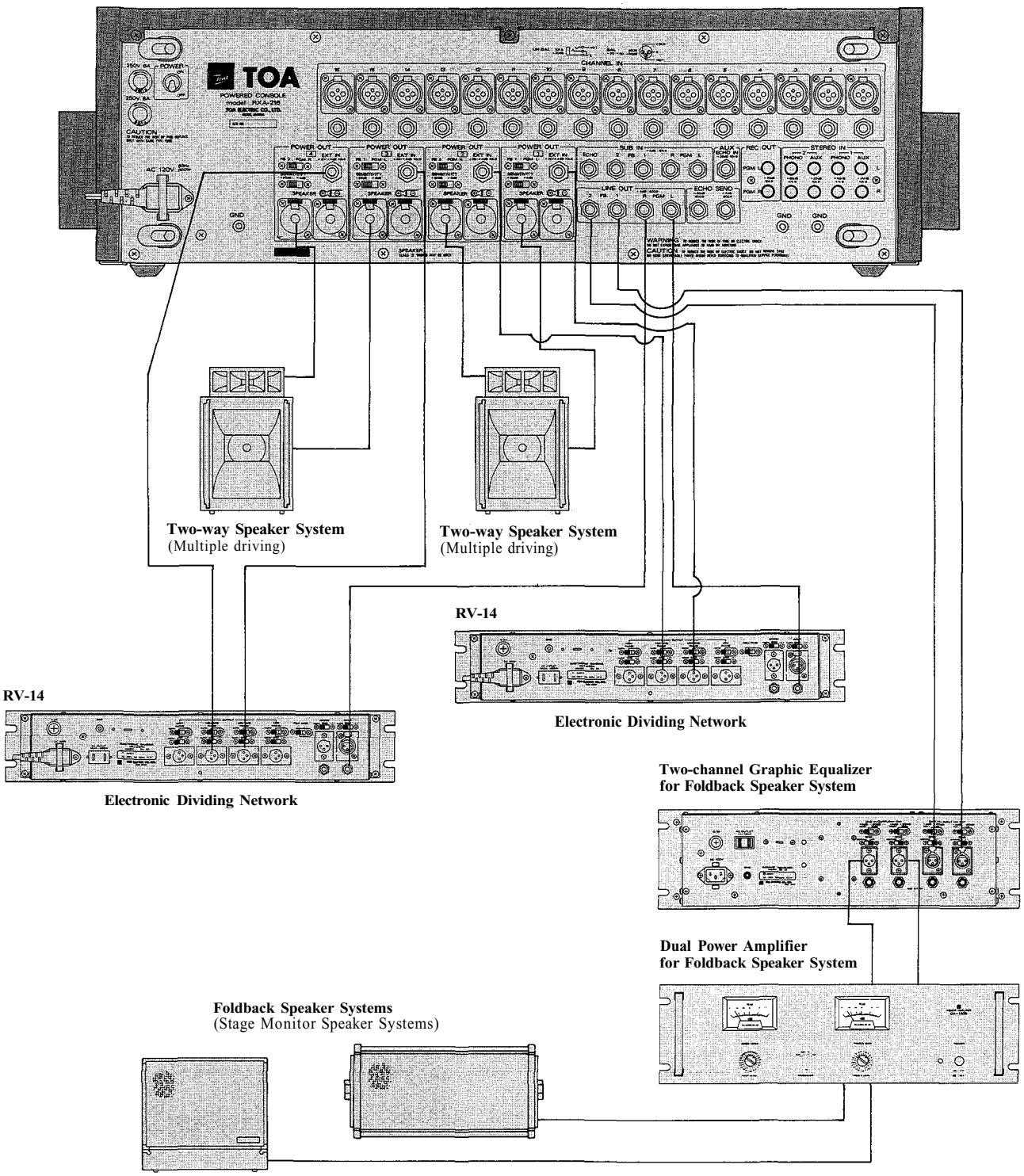
Connection Example (RXA-216)

When the 4 built-in power amplifiers are used to drive the main speaker systems and monitor speaker systems, the power amplifier input selectors shown by "*" mark should be set properly.

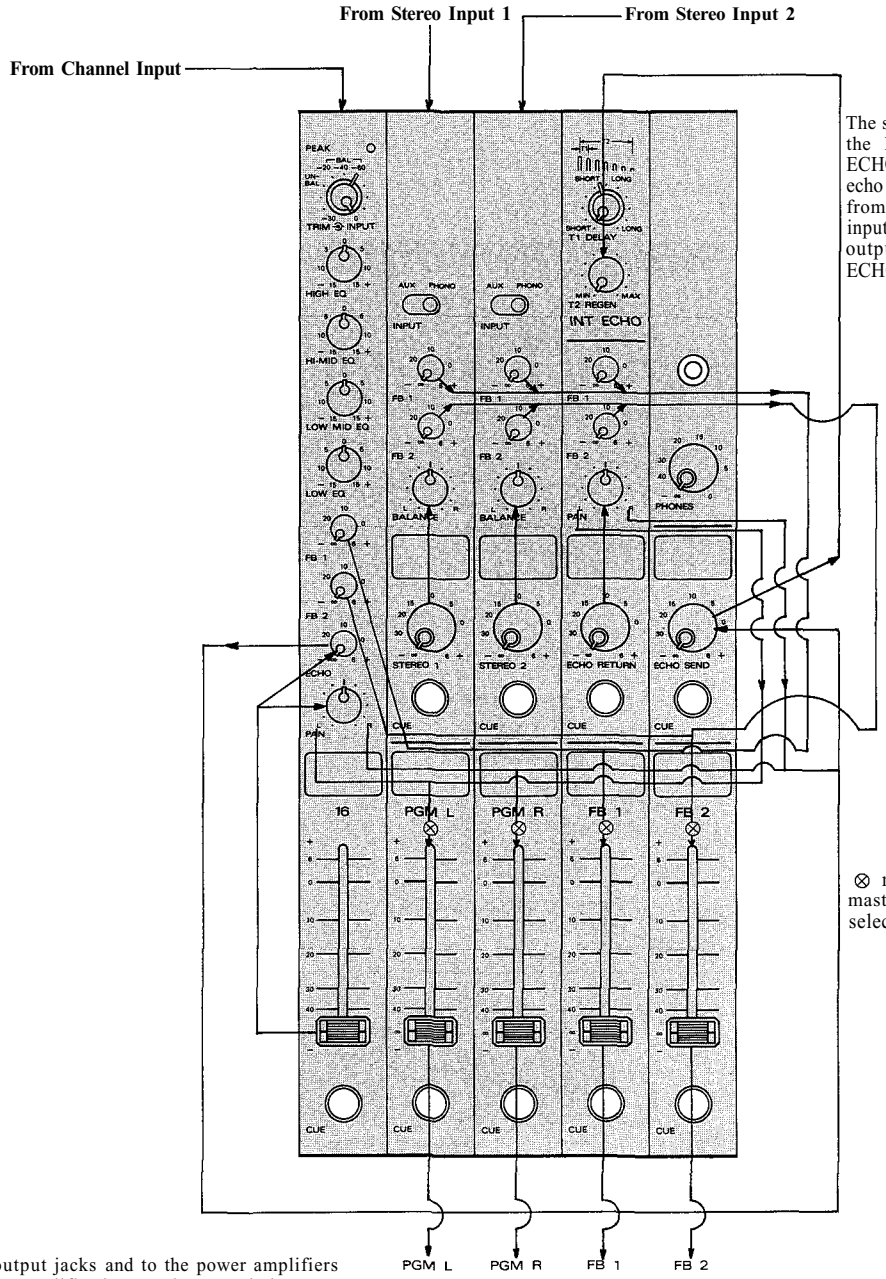


Connection Example (RXA-216)

The following connection example indicates that the 4 built-in power amplifiers are used for multiple amplification of speaker systems. The built-in graphic equalizers are connected to the program L and R.



Signal Flow on Output Section (RXA-212, RXA-216)



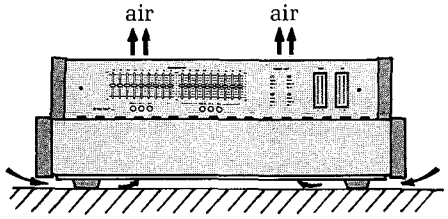
The signal from the built-in echo unit is fed to the ECHO RETURN VOL via the AUX ECHO jack. When connecting an external echo machine, a connection must be made from the ECHO SEND of the console to the input of the echo machine and from the output of the echo machine to the AUX ECHO input of the console.

⊗ mark indicates the signal flow to the master fader via the graphic equalizer selector switch on the meter panel.

To the line output jacks and to the power amplifiers via the power amplifier input selector switches.

Caution on installation

- Do not cover over the ports on both top and bottom panels as the RXA-212 and RXA-216 incorporates high power amplifiers. Covering over will cause damage or trouble.



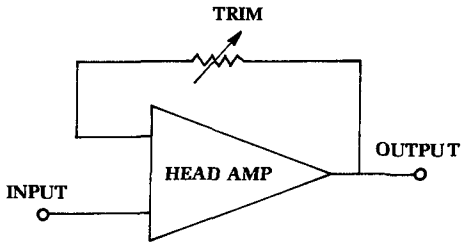
- Do not put drink on the top panel. Spilling drink will cause damage or trouble.

- Care must be taken to assure that the speaker cables and microphone cables keep a distance between them as the RXA-212 and RXA-216 have high gain. Keeping them near will cause trouble like oscillation.

How to get a good mixing

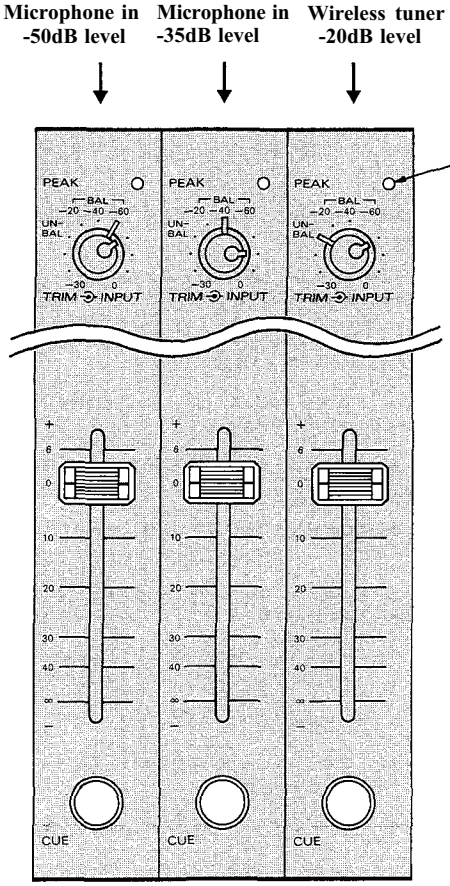
- Before connecting the equipment to the self-powered console, check the impedance and level of both. If the impedances and levels do not match, mixing will be very difficult and the S/N ratio will also be adversely affected.

- Each input channel of the RXA-212 and RXA-216 is provided with a Trim control. Thorough understanding of the function of a Trim control will make mixing easier.



- The function of the Trim control is that the negative feedback volume of the head amp is changed so that the gain of the head amp can also be changed. Because of this, enough dynamic range even for the high level signals is ensured. Also, S/N ratio will be better by decreasing the gain of the head amp proper.

For example, 2 microphones with output levels of -50dB, -35dB respectively, and a wireless tuner with an output level of –20dB can be connected to the console.



First the Trim control must be turned down so that the peak indicator will not be lit if an excessive signal comes in. Nevertheless, if it is still on, the input level switch must be rotated to the left 1 step. This can be applied to the "BAL" inputs only, not to the "UN-BAL" inputs.

The input selector switch is set as shown in the left figure. Trim control is set as shown in the left figure. Also, if the volume balance of each instrument (microphone) is kept by the Trim control the position of each channel fader will be uniform, thus mixing becomes easier.

The faders in each channel are used in general between 0 and 10. If the hall is full and there is not enough volume, the master fader must be turned up.

The level meter will not almost light up when the output volume is low therefore making it difficult to take an accurate reading. To correct this the sensitivity switch of a power amplifier must be changed from +4dB to +20dB position and the program fader must be turned up, then the level meter is easier to read. (Please refer to the function explanation of the rear panel on page 6 or 7.)

Equalization for music

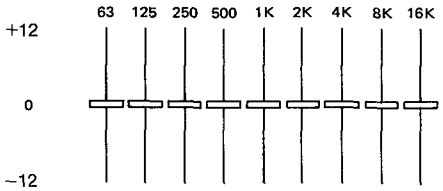
The Graphic Equalizer is designed not only for use in preventing feedback and equalizing uneven room frequency response to be flat, but also for equalizing frequency response to your tastes and producing favourable sound for you. Fig. 1 shows each frequency band and its corresponding auditory feeling. Fig. 2 and Table 1 show the relation between each musical instrument and its frequency band. They can be of great help in the equalizer operation. (They are referenced from a book entitled "Practical Guide for Concert".)

EQUALIZATION CHART

20Hz–150	150–300	300–2k	2k–5k	5k–10k	10k–15k
These sounds are felt more than really heard. They give a sense of power. Too much produces a muddy sound.	The rhythm section appears here. Either a fat or thin sound can be heard by mis-EQ here. Too much becomes boomy. Bass guitar-Snare-Toms.	Probably the most important of all. Most all instruments contain harmonics here. 300Hz boosting can cause horn-like sounds. 1k to 2k sounds tinny. Too much here sounds like the telephone.	Upper vocal region. Too much here will cause great fatigue, and loss of speech intelligence. Reducing 3k can bring vocals on top.	Presence range. Great achievement in overall level can be had here. Too little causes a "far away" sound.	Sibilance levels can be controlled here. Bright, clean definition.

Figure 1

INSTRUMENT CHART



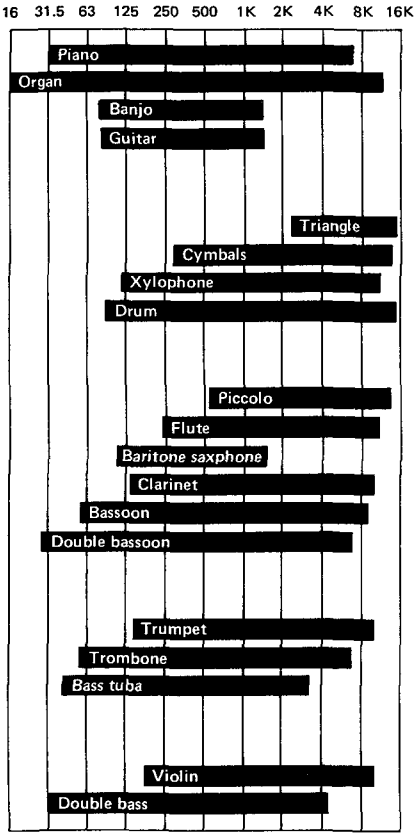


Figure 2

INSTRUMENT EQUALIZATION CHART

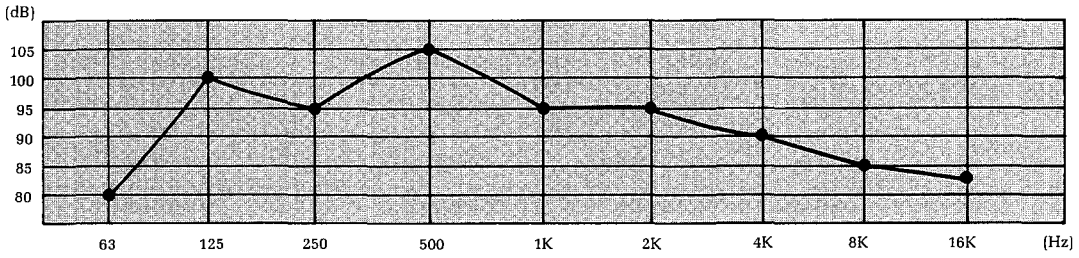
Acoustic guitar	Bass strings resonate between 70 to 120Hz, body around 300Hz. Avoid boosting these to stop feedback. 3kHz and 5kHz give great "clarity".
Electric guitar	Resonances differ—depending on type. Good full sounds around 300 to 500Hz. Clarity at 3kHz.
Bass guitar	Extreme lows are at 60 to 90Hz. "Pick" or "pluck" sounds are around 800 to 1200Hz. Upper harmonics clarified about 3kHz.
Human voice	Good fullness at 150Hz. Watch for "boominess" around 250Hz. Mid-range 10kHz.
Piano (Acoustic)	Bass strings resonate around 100Hz, Watch for sub-harmonics at 30 to 50Hz.
Piano (Electric)	Good mid-clarity at 3kHz to 5kHz thins out rapidly in high end. Be careful around 1.5kHz to 2.5kHz to avoid the "bar room sound."
Organ	Usually dies under 200Hz. Has great mid-sounds around 1200 to 2000Hz. Top end cuts off at 6kHz.
Violin	Rich fullness at 400Hz. Natural mids around 1500 to 2500Hz. Avoid "scratch" sounds at 8kHz.
Brass instruments	Watch for "hot" mids around 2kHz. Low end boost around 400Hz. Top end clarity at 6kHz.
Bass drum	Great low "kick" at 40Hz. The mids at 2kHz gives the familiar "punch."
Snare drum	Good fullness at 100Hz. The "crack" is boosted at 2kHz. The snares extend to above 4kHz.
Tom Tom	The main fullness is around 200Hz. The mid punch extends to 4kHz.
Floor Tom	Same as torn, but extends down to 80Hz.
Hi Hat	Watch for the "gong" sound around 300Hz. Good "shimmer" sounds are around 8kHz to 10kHz.
Cymbal overhead	About the same as hi-hat but has more low end around 150Hz.
Talk Box	Depending on the guitar sound driving it and the resonance of each player's mouth, should have great "bite" around 1200Hz and dies above 6kHz.

Table 1

Channel and Graphic Equalizers

Feedback Prevention

When the overall gain of a sound system is increased, feedback will occur at frequencies where the system response has peaks. Suppose the system has uneven frequency response like that shown in the following diagram.



The frequency at which feedback will occur when gain is increased is about 500Hz. In this case, feedback may be prevented by attenuating levels at 500Hz by 3dB to 5dB with an equalizer. If the overall gain is again gradually increased, feedback will occur next at about 125Hz. It may be stopped by attenuating the levels 3dB to 5dB at that frequency. In this procedure, sufficient gain in the sound system is obtained before feedback.

General Specifications (RXA-212, RXA-216)

Frequency Response (Measurement of source impedance 150 ohms)
- LINE OUT (CH IN — LINE OUT) at +4dB*
  - +0dB, –0.5dB 50Hz to 15kHz
  - +0dB, –2dB 20Hz to 30 kHz
- SPEAKER OUT (EXT IN — SPEAKER OUT) at 1W
  - +0dB, –0.5dB 30Hz to 30kHz
  - +0dB, –1.5dB 20Hz to 60kHz

Total Harmonic Distortion
- LINE OUT
  - 0.3% (+4dB*/600 ohms at 1kHz)
  - 0.05% (+20dB*/600 ohms at 1kHz)
- SPEAKER OUT
  - 0.025% (120W/8 ohms at 1kHz)
  - 0.3% (120W/8 ohms 20Hz to 20kHz)

Power Output
- 120W/8 ohms

Hum and Noise
- LINE OUT (Input termination of 150 ohms, Input level sw at BAL -60, Trim at "0", output termination of 600 ohms)
  - Equivalent Input Noise
    - -126dB* (20Hz — 20kHz)
    - -128dB* (IHF-A weighted)
  - S/N (Program fader and one input fader at nominal)
    - 66dB (20Hz — 20kHz)
    - 68dB (IHF-A weighted)
- SPEAKER OUT (EXT Input short circuit, sensitivity switch at "+4dB", output termination of 8 ohms)
  - Equivalent Input Noise
    - -104dB* (20Hz — 20kHz)
    - –111dB* (IHF-A weighted)
  - S/N
    - 108dB (20Hz — 20kHz)
    - 115dB (IHF-A weighted)

Maximum Voltage Gain
- 104dB CH IN to SPEAKER OUT
- 76dB CH IN to LINE OUT (PGM, FB)
- 82dB CH IN to ECHO SEND (+4)
- 56dB CH IN to REC OUT

Channel Equalizer (+15dB maximum)

LOW	100Hz	Shelving
LOW MID	300Hz	Peaking
HI-MID	3kHz	Peaking
HIGH	10kHz	Shelving

Graphic Equalizer (±12dB maximum)
- Center Frequency
  - 63Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, 16kHz

Crosstalk
- 60dB at 1kHz, input to output

Internal Echo Unit
- Delay Time SHORT 12msec—40msec
  - LONG 40msec—140msec

Peak Indicator
- LED built into each input channel turns on when the pre-fader, post EQ signal reaches 6dB before clip.
- LED built into each built-in power amplifier turns on when the output level reaches 3dB before nominal.

Meter ("0" = +4dB* output at LINE OUT)
- 2 pairs of fluorescent bargraph meter for PGM L, R AND FB 1,2.

Power Consumption

RXA-212	260W
RXA-216	500W

Finish
- Black panel, rosewood trim

Dimensions (W×D×H)
- RXA-212
  - 574 × 751 × 206 mm 22-5/8" × 29-5/8" × 8-1/8"
- RXA-216
  - 694 × 751 × 206 mm 27-3/8" × 29-5/8" × 8-1/8"

Weight

RXA-212	29kg (64 lbs)
RXA-216	40kg (88 lbs)

Accessory
- Fuse

*0dB is referenced to 0.775V RMS

Input & Output Specifications

INPUT SPECIFICATIONS

Input		Actual Load Impedance	For Use With Nominal	Sensitivity*	Input Level (Trim 0 to Trim –30)		Connector *
					Nominal	MAX Before Clip	
CHANNEL IN	BAL –60 BAL –40 BAL –20	550 ohms 800 ohms 900 ohms	50 to 600 ohms	–72dB (0.2mV) –52dB (2mV) –32dB (20mV)	–60dB (0.78mV) to –30dB (25mV) –40dB (7.8mV) to –10dB (250mV) –20dB (78mV) to +10dB (2.5V)	–40dB (7.8mV) to –10dB (250mV) –20dB (78mV) to +10dB (2.5V) 0dB (775mV) to +30dB (25V)	XLR-3-31 type
	UN-BAL	25k ohms	10k ohms	-42dB (6.2mV)	-30dB (25mV) to 0dB (775mV)	–10dB (250mV) to +20dB (7.8V)	PHONE JACK
STEREO IN	AUX	10k ohms	10k ohms	-32dB (20mV)	-20dB (78mV)	+10dB (2.5V)	RCA PIN JACK
	PHONO	50k ohms	47k ohms	-62dB (0.62mV)	–50dB (2.5mV)	-20dB (78mV)	
AUX ECHO IN		10k ohms	10k ohms	-32dB (20mV)	-20dB (78mV)	0dB (775mV)	PHONE JACK
SUB IN		10k ohms	10k ohms	-2dB (615mV)	+4dB (1.23V)	+24dB (12.3V)	PHONE JACK
EXT IN	+4 +20	12k ohms 14k ohms	10k ohms	+4dB (1.23V) +20dB (7.8V)	+4dB (1.23V) +20dB (7.8V)	— —	PHONE JACK

OUTPUT SPECIFICATIONS

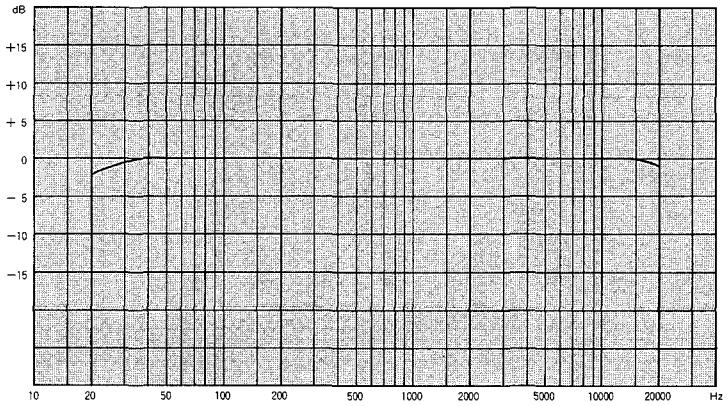
Output		Actual Source Impedance	For Use With Nominal	Output Level		Connector**
				Nominal	MAX Before Clip	
SPEAKER OUT		0.5 ohms	8 ohms	120W/8 ohms, +32dB (31V)	—	PHONE JACK
LINE OUT		220 ohms	600 ohms	+4dB (1.23V)	+20dB (7.8V)	PHONE JACK
ECHO SEND	+4 -20	180 ohms 64 ohms	600 ohms	+4dB (1.23V) –20dB (78 mV)	+20dB (7.8V) -4dB (490mV)	PHONE JACK
REC OUT		1k ohms	10k ohms	–10dB (250mV)	+10dB (2.5V)	RCA PIN JACK
PHONES		18 ohms	8 ohms or higher	75mW/8 ohms, 0dB (775mV)	370mW/8 ohms, + 7dB (1.7V)	STEREO PHONE JACK

0dB is referenced to 0.775V RMS.
*Sensitivity is the level required to produce a nominal speaker output level.
**All XLR type connectors are floating, balanced and transformer-isolated.
Stereo phone jack is wired: Tip=Left, Ring=Right and Sleeve=Common

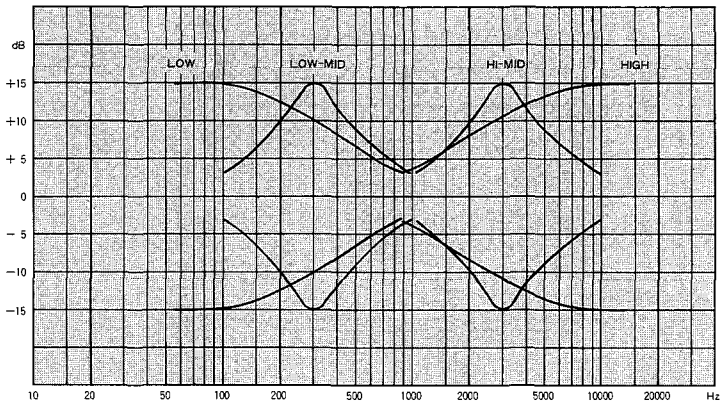
Note:
As is described in the beginning of the operation manual, the XLR type connectors of the RXA-212 and RXA-216 are wired as follows.
Pin No. 1 — Ground
Pin No. 2 — Cold (Low)
Pin No. 3 — Hot (High)
Specifications are subject to change without notice.

Characteristic Diagrams

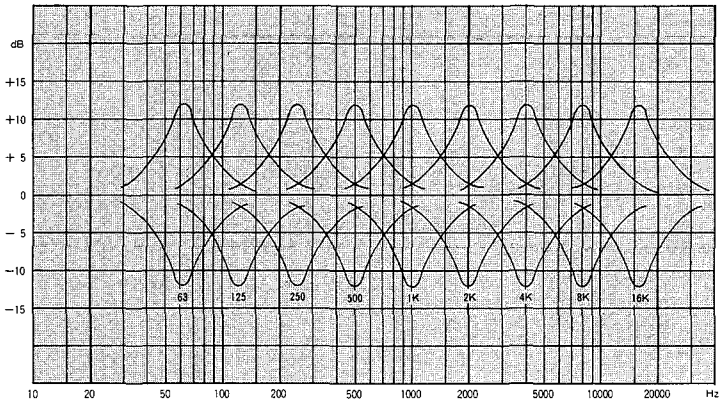
Frequency Response



Input EQ Characteristics

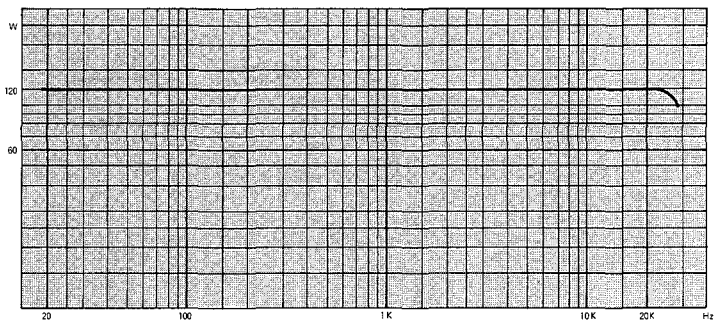


Graphic EQ Characteristics



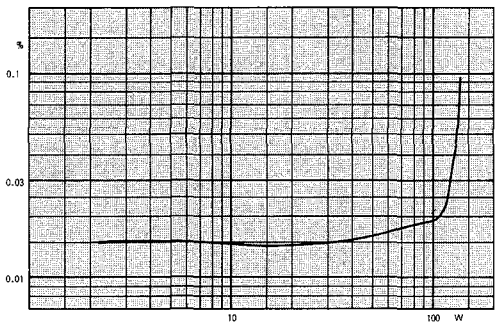
Power Band Width (Power Amplifier Section)

8Ω 0.3%

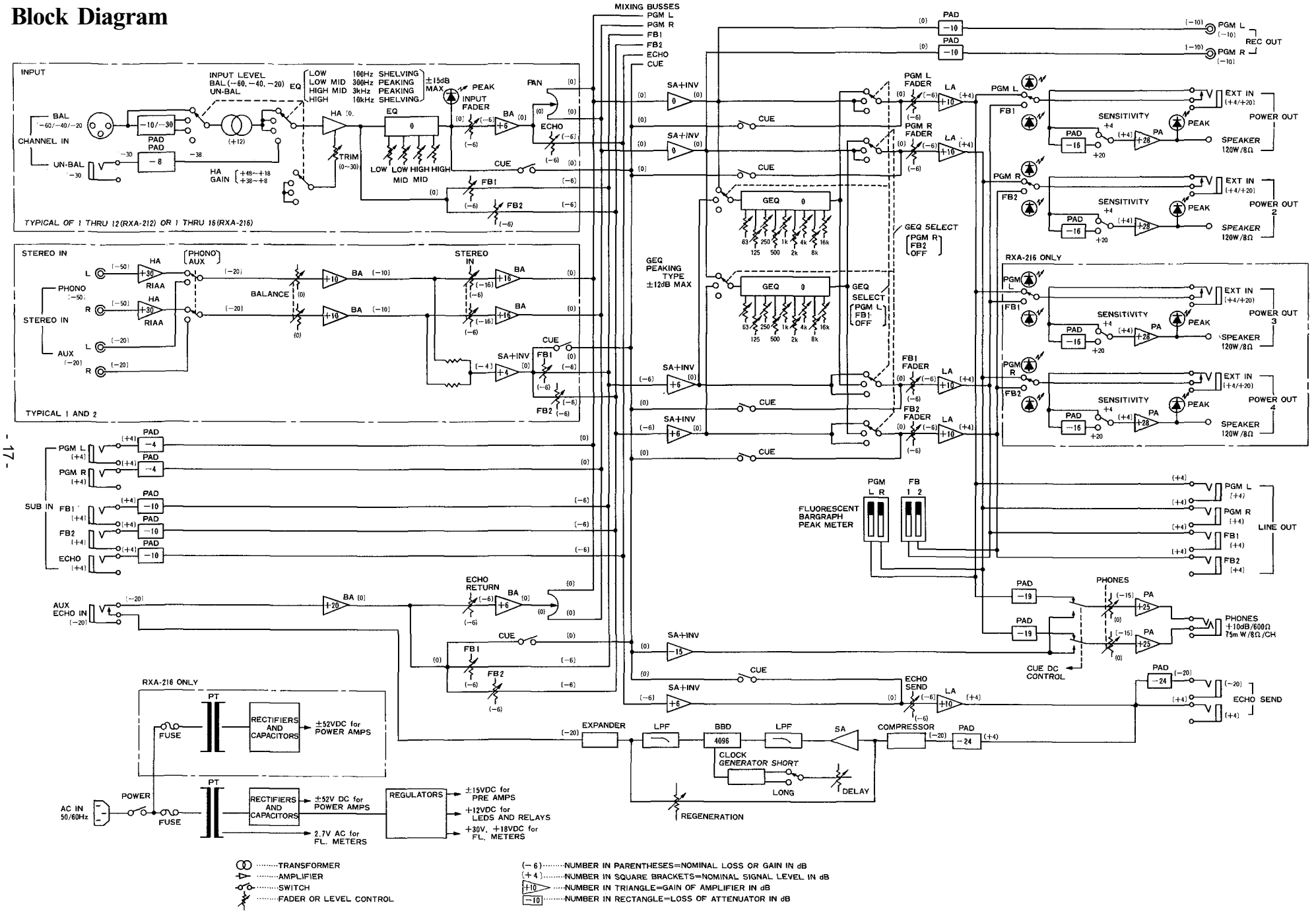


Total Harmonic Distortion (Power Amplifier Section)

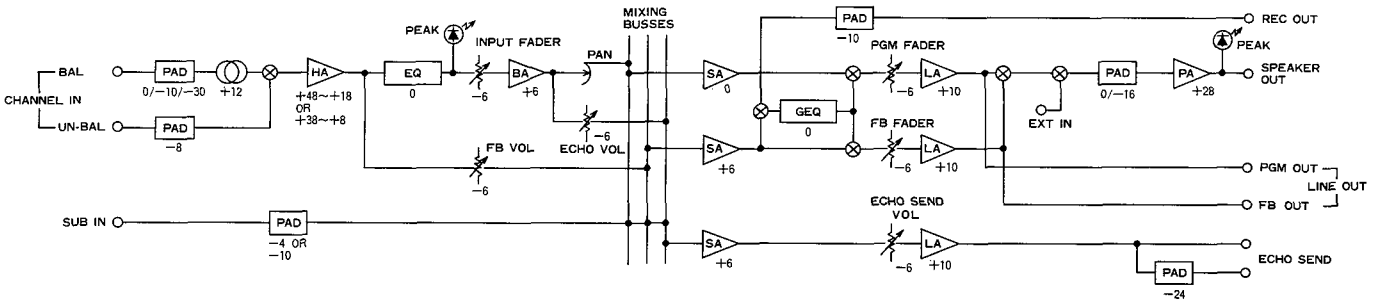
8Ω 1kHz

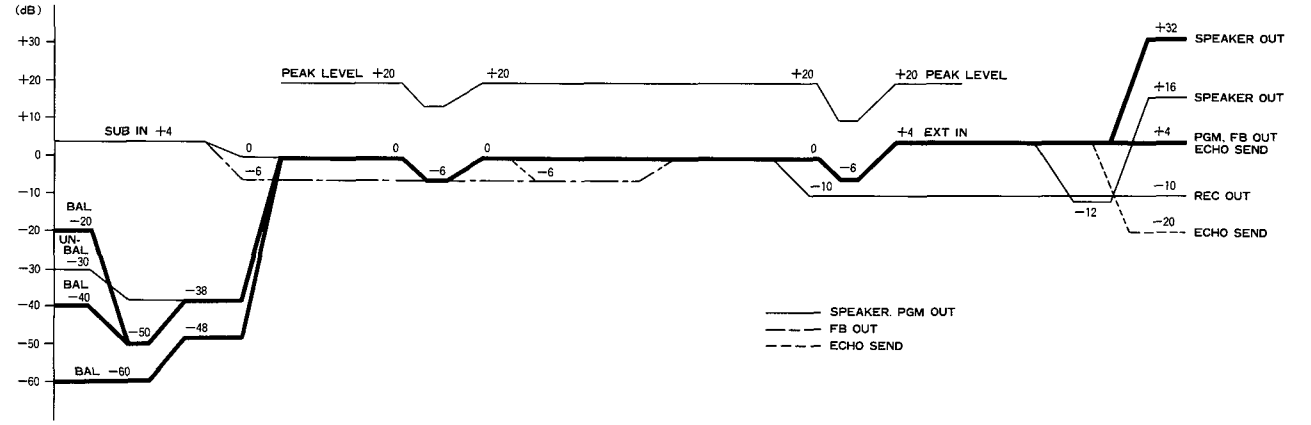


Block Diagram



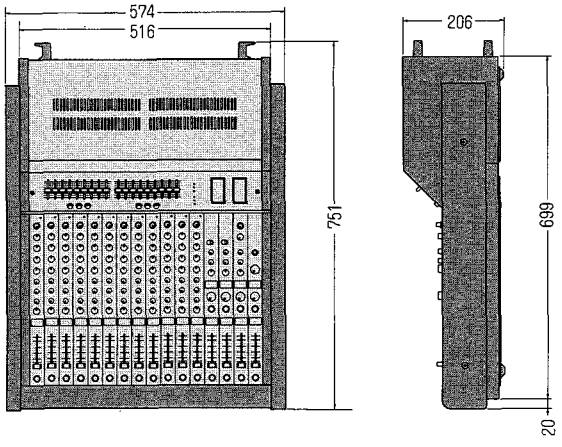
Level Diagram



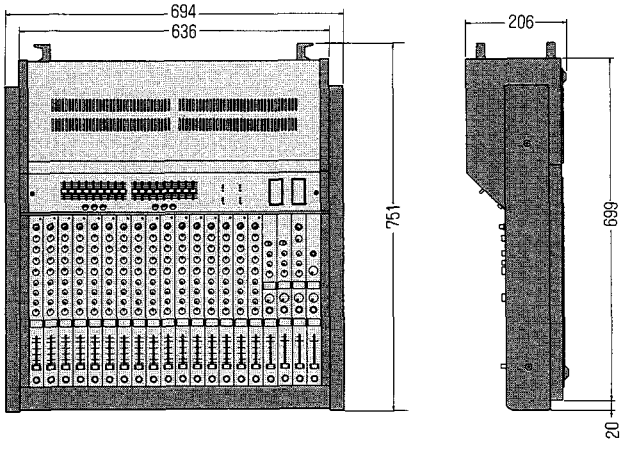


Dimensional Diagrams

RXA-212



RXA-216



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