



CLEAR-COM ENCORE

AMS-1027 AMPLIFIED MONITOR SPEAKER

I N S T R U C T I O N M A N U A L

AMS-1027 Amplified Monitor Speaker Instruction Manual
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IMPORTANT SAFETY INSTRUCTIONS

Please read and follow these instructions before operating this product.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades, with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. **WARNING:** To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.

Please familiarize yourself with the safety symbols in Figure 1. When you see these symbols on this product, they warn you of the potential danger of electric shock if the main station is used improperly. They also refer you to important operating and maintenance instructions in the manual.



This symbol alerts you to the presence of uninsulated dangerous voltage within the product's enclosure that might be of sufficient magnitude to constitute a risk of electric shock. Do not open the product's case.



This symbol informs you that important operating and maintenance instructions are included in the literature accompanying this product.

Figure 1: Safety Symbols



OPERATION

Thank you for choosing the Clear-Com AMS-1027 Amplified Speaker Station. For optimum results, please read this entire manual before installing your AMS-1027 station.

The AMS-1027 is a bi-amplified, self-contained, rack-mountable audio monitor speaker that occupies only a single rack space.

This amplified speaker station features exceptional audio quality, very low distortion, and high output power. It provides convenient, powerful, high-quality audio monitoring capability in locations where few other monitor speakers can fit. The specially designed 2-way speaker system will reach output levels of 96 dB SPL at 2 feet (0.6m) without audible distortion.

The AMS-1027's design provides high-quality audio monitoring, even in high-noise environments.

The steel enclosure is magnetically shielded, allowing the speaker station to be placed above or below a television monitor without affecting the monitor's color balance. Equipped with electronically balanced 3-pin XLR inputs or unbalanced line-level RCA inputs, the AMS-1027 enables you to easily monitor a variety of audio sources. Its input limiter minimizes speaker distortion, and separate channel volume controls allow easy adjustment of stereo signals or two discrete monophonic signals. The AMS-1027 has two multi-segment, LED bar-type level displays, adjustable from the rear panel.

To achieve the extended bass response produced by the AMS-1027, the low-frequency signals from both channels are summed into a single bass amplifier. This amplifier drives a specially developed, baffled loudspeaker, which is centered in the unit. The mid/high frequency drivers are mounted at opposite ends of the AMS-1027, providing the maximum amount of stereo image separation possible.

The Clear-Com AMS-1027 Amplified Speaker Station is a valuable accessory in a wide variety of facilities and installations, particularly where rack space is at a premium.

DESCRIPTION

The single-rackspace AMS-1027 permits convenient monitoring of one stereo or two monophonic ("mono") analog input sources, with excellent full-range fidelity.

Two front-firing midrange-tweeter speakers and a compact high-performance woofer are arranged in an efficient bi-amp design. The summed bass feature is important for audible detection of "out of phase" conditions. Speaker amp limiters prevent accidental damage to speakers from high input levels.

Front-panel volume and balance controls are standard, but can be re-configured in the field as A volume/B volume. Ten-segment LED bargraph meters with rear-panel input calibration provide an indication of input levels. Balanced

inputs are on XLR connectors, with unbalanced inputs on RCA connectors. Passive loop-through XLRs are also provided.

The AMS-1027 is completely magnetically shielded to allow interference-free operation immediately adjacent to all CRT video monitors. Its lighter weight and shallower-depth chassis (compared to similar-type units) makes it ideal for use in portable and mobile vehicle applications.



Figure 1-1: AMS-1027 Amplified Speaker Station

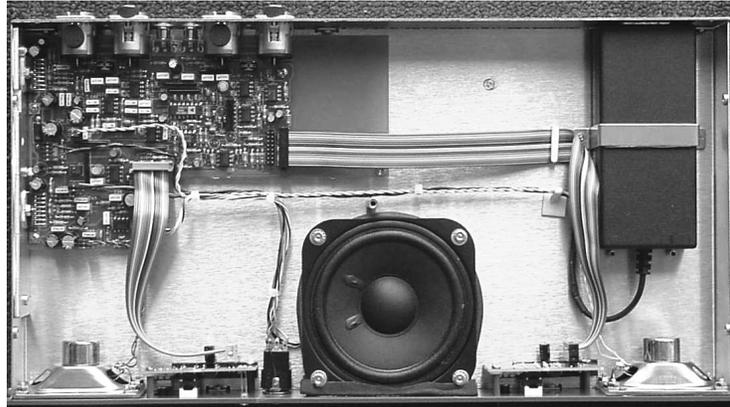


Figure 1-2: Interior of AMS-1027 Unit

FEATURES

- Selectable monitoring of one stereo analog signal in one unit
- Although only one rack space high, the AMS-1027 produces 96 dB SPL at 2 feet
- Volume/Balance controls are standard, internally configurable as A-volume/B-volume
- 10-segment level meters
- Headphone jack with speaker muting
- Accepts both balanced (XLR) and unbalanced (RCA) inputs
- XLR loop-through connectors
- Blowout-proof speakers
- Lightweight and shallow-depth chassis

- Internal universal AC mains power supply
- Thoroughly magnetically shielded

APPLICATIONS

Radio

Monitoring incoming and outgoing feeds

Television/Video Postproduction

- Confidence/cuing monitoring for all types of ATRs and VTRs in machine rooms and edit bays
- Monitoring network and transmitter feeds
- ENG, SNG and other OB vehicles and EFP systems

Commercial Industrial Sound

Monitoring audio feeds in theme parks, security installations, and teleconferencing systems

AUDIO CIRCUIT

The AMS-1027's popular bi-amp design provides high-quality audio reproduction, ideal for monitoring even in high noise environments. The two front-firing midrange-tweeter speakers and compact high-performance woofer, along with the summed bass feature, offer accurate sound reproduction and audible detection of "out of phase" conditions. Damage to speakers from high input levels are prevented by using in-circuit limiters.

For more detailed information, see the audio circuit description and the interconnect block diagram in the Maintenance Chapter of this manual.

FRONT PANEL CONTROLS AND INDICATORS

Please refer to Figure 1-3 to familiarize yourself with the AMS-1027's front-panel controls and indicators. The following sections describe the functions of each of the various controls and indicators found on the front panel and are referenced, by number, to Figure 1-3.

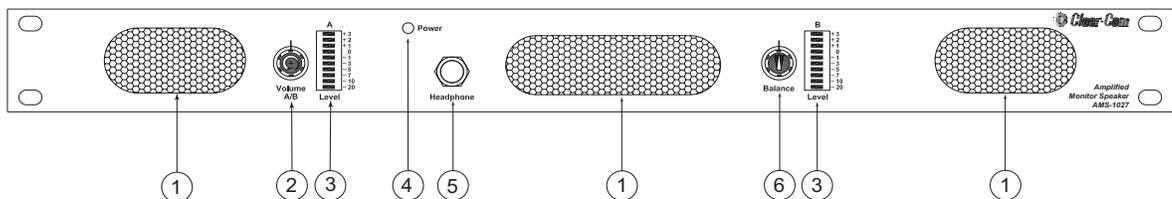


Figure 1-3: Front Panel of AMS-1027

① Internal Speakers

The AMS-1027's internal speaker system is comprised of two mid/high-range speakers (left and right) and one woofer speaker (center). The two side channel speakers reproduce, in stereo, only the mid and high frequencies, while the center woofer speaker reproduces the low frequencies summed from both the left and right channels.

② Volume Control

The volume-control knob adjusts the loudness of the audio reproduced by the internal speakers or connected headphone.

③ Audio Level Bargraph Meter Displays

Audio levels for the left and right channels are displayed via two 10-segment LED bargraph meters on the respective sides of the front panel. Dynamic range for these meters is 23 dB. Gain calibration for these meters is via two recessed trim pots on the rear panel (see “Rear Panel Connectors and Controls” later in this chapter for more information). Meters are factory set for VU mode and gain at 0 = +4 dBu.

The AMS-1027's front-panel controls and indicators are illustrated in Figure 1-3.

④ Power Indicator LED

The power indicator LED signals the operating condition of the power supply. The LED glows green to indicate the AMS-1027 is connected to mains power and an operating voltage is present.

⑤ Headphone Jack

For critical listening or for listening in high noise environments, use the stereo headphone feature rather than the internal speakers. The left and right channels are separated for stereo listening in the headphones. When you plug in headphones, the internal speakers will mute. This jack accepts the standard 1/4-inch tip-ring-sleeve stereo plug.

⑥ Balance Control

This control pans the volume balance between the left and right speakers. If the balance is adjusted hard left or right, a slight L+R channel mix is retained (only in low bass frequencies) so that phase discrepancies can be discerned.

Separate left and right volume controls may be selected via internal jumpers in lieu of a balance control. For instructions on how to perform this retrofit, see “VOL/BAL to A-VOL/B-VOL Retrofit Instructions” on page 1-6.

REAR PANEL CONNECTORS AND SETTINGS

Please refer to Figure 1-4 to familiarize yourself with the rear panel features of the AMS-1027 unit. The following sections describe the functions of each of the various features found on the rear panel and are referenced, by letter, to Figure 1-4.

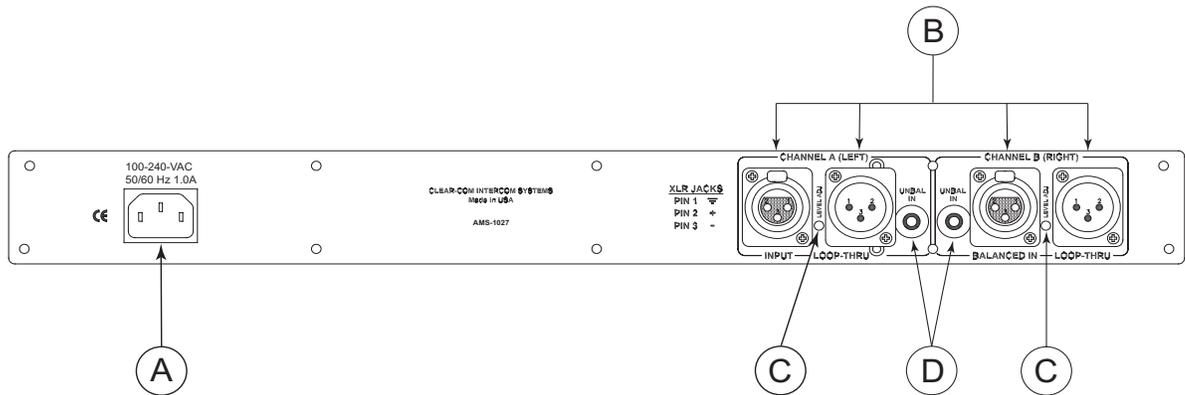


Figure 1-4: Rear Panel of AMS-1027

(A) Power Connector

Attach a standard IEC-320 power cord between this connector and mains power (100 - 240VAC, 50/60 Hz). The front panel power LED (6) will glow green to indicate operating voltages are present.

(B) XLR Connectors for Balanced Inputs and Loop-Through on Channels A and B

These inputs are meant to receive standard analog audio signals. There are two sections; Channel A (left) and Channel B (right), with each section comprised of one standard input connector and one passive loop-through connector. Both the input and loop-through connectors are configured for a balanced, high impedance connection.

The “BALANCED IN” XLR connectors are panel mounted 3-pin females and are internally terminated. The “LOOP-THRU” XLR connectors are panel mounted 3-pin males and are unterminated (for “chaining” the signal to other equipment). If unbalanced signals are applied to these connectors, they should be connected between either pin 2 or pin 3 and pin 1. In that case, a jumper must be added to connect the unused input (3 or 2) to pin 1. All balanced connections are wired with Pin 2 “hot.”

(C) Input Gain/VU Meter Level Adjust for Channels A and B

These recessed trim pots allow the adjustment of the left and right input gain levels simultaneously with the gain calibration of the left and right VU level

meters. There are two trim pots; one for Channel A (left) and one for Channel B (right). This dual adjustment configuration aids in the calibration of the meters with the input gain.

Adjustment is between -10dBu and +10dBu (nominal). Gain increases as the pots are turned clock-wise. These controls may be accessed with a small flat-blade screwdriver.

Note: Do not force the trim pots past their stop points as this will damage the unit.

D RCA Connectors for Unbalanced Inputs on Channels A and B

These inputs are meant to receive standard, unbalanced, -10 dBu line level audio signals. Both are configured for an unbalanced, high impedance connection. Panel-mounted female RCA connectors are used.

VOL/BAL TO A-VOL/B-VOL RETROFIT INSTRUCTIONS

The AMS-1027 is configured at the factory with Volume/Balance controls. To change the function of the Volume/Balance controls on the front panel to an “A” Volume/“B” Volume (left and right) configuration, follow the instructions below:

You can reconfigure the unit to give it two separate volume controls. Instructions are included in this chapter.

1. Disconnect the unit from AC and all line connections.
2. Remove the AMS-1027's top cover.
3. Locate the Vol/Bal harness (flat cable) running from the right-side front panel PCB (See Figure 1-5).
4. On the Main PCB, unplug the harness ribbon cable connector from J18 and plug it into J16 (See Figure 1-6).
5. Replace the AMS-1027's top cover and reconnect.

Remember that the front panel text will still refer to the right-side control as a balance. You may want to place a label over the old text of both knobs to indicate their new function as “A” and “B” (or Left and Right) volume controls.

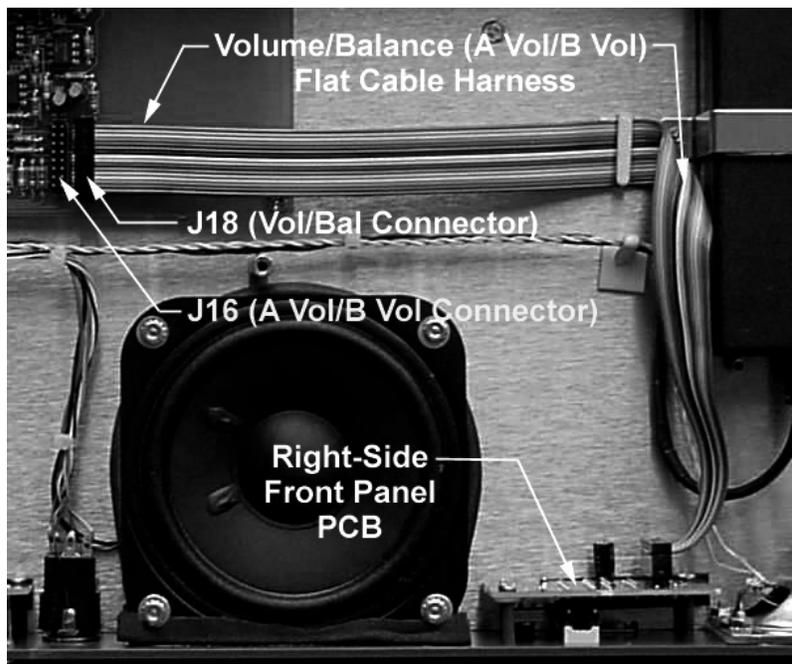


Figure I-5: Locate the volume/balance cable

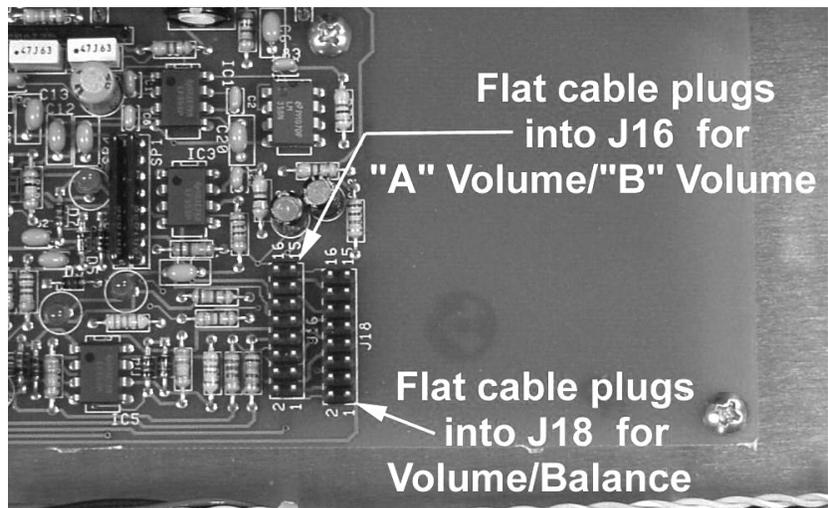


Figure I-6: Unplug the cable from jumper 18 and plug it into jumper 16

2

INSTALLATION

QUICK START

You can install the AMS-1027 in four easy steps:

1. Slide and secure the unit into the rack.
2. Connect the audio signals to the XLR or RCA input connectors.
3. Plug the unit's supplied IEC-320 power cord into the AC mains.
4. Configure volume controls and set level meters (if required).

MOUNTING

The unit should be mounted where convenient for operating, ideally at approximately ear level for best high-frequency response. Its superior magnetic shielding eliminates concerns about locating it adjacent to most types of CRT monitors, including even high-resolution color monitors.

You install the AMS-1027 in four easy steps.

HEAT DISSIPATION

Heat dissipated by the speaker amps is conducted directly to the left side of the chassis; no special considerations for cooling are necessary as long as the ambient temperature inside the rack area does not exceed approximately 60° C (140° F).

SYMPATHETIC VIBRATION

Sympathetic vibration from other equipment (cables, etc.) in the rack may be serious enough to interfere with the unit's sound quality in the listening area. The use of thin card stock and/or felt or foam weather-stripping type materials between adjacent vibrating surfaces, or tying up loose cables, and so on, may be required to stop vibrations external to the unit.

You can locate an AMS-1027 next to most types of CRT monitors because of its superior magnetic shielding.

MECHANICAL BRACING

Even though the unit is fairly heavy, the chassis is securely attached to the front panel at eight points along its surface, not just at the four corners of the chassis ears. This feature will reduce or eliminate rear bracing requirements in many mobile/portable applications. The weight of internal components are distributed fairly evenly around the unit.

AUDIO CONNECTIONS

Connection of the audio feeds is straightforward. Refer to the interconnect block diagram in the Maintenance Chapter for clarification of the general signal paths into and out of the AMS-1027 unit.

ELECTRICAL INTERFERENCE

As with any audio equipment, maximum immunity from electrical interference requires the use of balanced, shielded cable; however, satisfactory results can sometimes be obtained without it. The internal circuitry common is connected to the chassis. Unbalanced sources may also be applied to the balanced inputs. The gain is 6 dB greater with a single-ended source connected across both “hot” terminals than when connected between either pin 2 or 3 and common. Note that the unused input terminal of a balanced input should be connected to common, rather than being left floating, to insure best immunity to noise.

AC POWER

The unit's AC mains connection is via a standard IEC inlet, with safety ground connected directly to the unit's chassis. The universal AC input (100-240VAC, 50/60Hz) switching power supply is a self-resetting sealed type, with automatic over-voltage and over-current shutdown. There is no user-replaceable fuse in either the primary or secondary circuit.

3

MAINTENANCE

GENERAL MECHANICAL OBSERVATIONS

Elimination of cabinet and component sympathetic vibrations (resonances) requires considerable attention to mechanical details. Because of this, and the physical constraints of the speaker's acoustic enclosures, even minor changes to any of the mechanical details of the unit can seriously impair its acoustic performance. This especially applies to the speaker baffles. If mechanical work on the unit is necessary, be sure to make adequate notes to permit accurate reassembly.

If you disassemble the AMS-1027 unit, you may impair the unit's magnetic shielding.

Due to our unique method of shielding, the magnetic shielding is usually degraded slightly by any disassembly of the unit, except removal of the rear panel. Almost any maintenance or repair will require removal of the cover. If an immediately adjacent video monitor shows magnetic interference after reassembly of the unit, it must be returned to the factory to restore the shielding completely.

Refer to the overall unit interconnect block diagram which appears later in this chapter for assistance in tracing the signal path through the detailed schematic.

GENERAL AUDIO CIRCUITRY OBSERVATIONS

Since a single-sided power supply is used, all amplifier sections are "biased" with a 1/2-supply reference, so all opamp signal terminals on the main board should have a DC level of $12 \pm 0.7V$.

Signal inputs to the main audio board are via the balanced XLR analog inputs or unbalanced RCA inputs.

Signal feed points for level meters and the phase indicator are immediately after the input stage, and before the volume control section.

The signal pick-off for the headphones is after the volume and balance controls. Analog switches mute the speakers, controlled by circuitry, which senses connection of headphones to the jack.

The power amps are attached to an aluminum heatsink plate (which is also connected to the circuit common for these devices). The heatsink plate forms an operational module separate from the chassis, which allows access to the solder side of the circuit board while power is applied to the circuitry. To avoid thermal shutdown of the power amp(s), they should **not** be operated without their tabs being fastened to the heatsink plate.

Variations in the frequency response of different production runs of drivers has sometimes required minor adjustments in the equalization/crossover components in individual runs of units. Some of these components may have values slightly different than those indicated in the schematic, which are the nominal ones. If

any of the drivers (speakers) are replaced, it may be necessary to change some of these components to achieve maximum flatness of response.

The operating threshold of the woofer limiter is critical to both satisfactory reproduction of musical transients and preventing damage to, or destruction of, the speaker itself. The side speaker output limiter circuits are similarly important, though not as critically adjusted.

Note: The woofer power amps are arranged in a bridge configuration; care must be taken to avoid letting either speaker terminal contact the chassis (common) or the grounded lead of any test equipment so as not to short out the power amps. The side speaker outputs are single-ended, so these precautions are not as important for them.

GENERAL LEVEL METER AND LEVEL GAIN CALIBRATION OBSERVATIONS

The display driver circuit provides a total of 23 dB of visual audio level indication via a 10-segment LED bargraph.

The display driver circuit provides a total of 23 dB of visual audio level indication via a 10-segment LED bargraph. Meter calibration adjustments are via two recessed trim pots (right and left) on the rear panel labeled “LEVEL ADJ.” Please note that these trim pots also simultaneously adjust the gain at the left and right input connectors. The range of adjustment is -10dBu to +10dBu (nominal). The driver PCB connects the LEDs in the bargraph in a series string. The anode of the LED corresponding to the lowest input level (-20) is connected to V+, with the other 9 LEDs following, and the outputs of the bargraph connected to the node between each LED.

Note: Only one output of the bargraph is active (low) at any one time, so if the LED string is “broken” (open) at any point, the bargraph will go OFF whenever the input level is at or above the level corresponding to the break.

AUDIO CIRCUIT DESCRIPTION

INPUT SECTION

The balanced input is buffered by a differential input of the audio signal to dual op amp ICs 1a and 2a. The output of ICs 1b and 2b goes through P1 and P2, which simultaneously sets the input volume gain and VU meter driver levels and then proceeds to the input of the quad VCA (U4) after receiving a slight treble boost. The output from the quad VCA (U4) then goes to a dual rectifier (IC5), used to drive the VU meters. This setup also allows the inclusion of unbalanced signals via the RCA jacks on the rear panel.

VOLUME CONTROLS

Volume controls are implemented through a quad VCA chip (U4). The control potentiometer for each VCA is buffered by IC3 and IC4. Sections A and B of the dual IC each buffer one volume control. Counter-clockwise rotation of the volume pot decreases the wiper voltage causing the IC3A and IC4A output to

rise, which decreases the audio level of the VCA. For the standard volume/balance configuration, the right hand control board is plugged into J18.

To implement the optional A volume/B volume configuration, the right hand control board is plugged into J16. For instructions, see “Vol/Bal to A-Vol/B-Vol Retrofit Instructions” on page 1-6.

LIMITING CIRCUITRY

The output of the four VCAs are summed into IC8A and IC8B where the audio waveform's conversion to voltage takes place, and the rectified output from each of these stages is the input to a corresponding non-inverting section of IC3A and IC4A. These non-inverting sections develop limiting control voltages for each VCA section. A voltage above 2 volts across D2 and D6 will cause a lower gain in the corresponding section of the VCA.

HEADPHONE AND SPEAKERS

The output of the four VCAs (IC8A and IC8B) is also the input circuitry for the headphone amplifier as well as the input of the speaker amplifiers, through IC7. Signals from IC8 are passed through IC10 (highpass filters A and B) for the side speaker amps, IC12A and IC11B. The input and output of these filters are summed through resistor packs SP9 and SP8 into the VCA (U4) on pin 10. Due to the inversion of the highpass filters, this allows a corresponding lowpass to be derived. The control signal for this phase is derived from IC4B, which is rectified from the output of IC9, which is used as the bass summing amp. The output of the driver stage goes to IC11A and IC12B to drive the center woofer speaker.

AMS-1027 INTERCONNECT BLOCK DIAGRAM

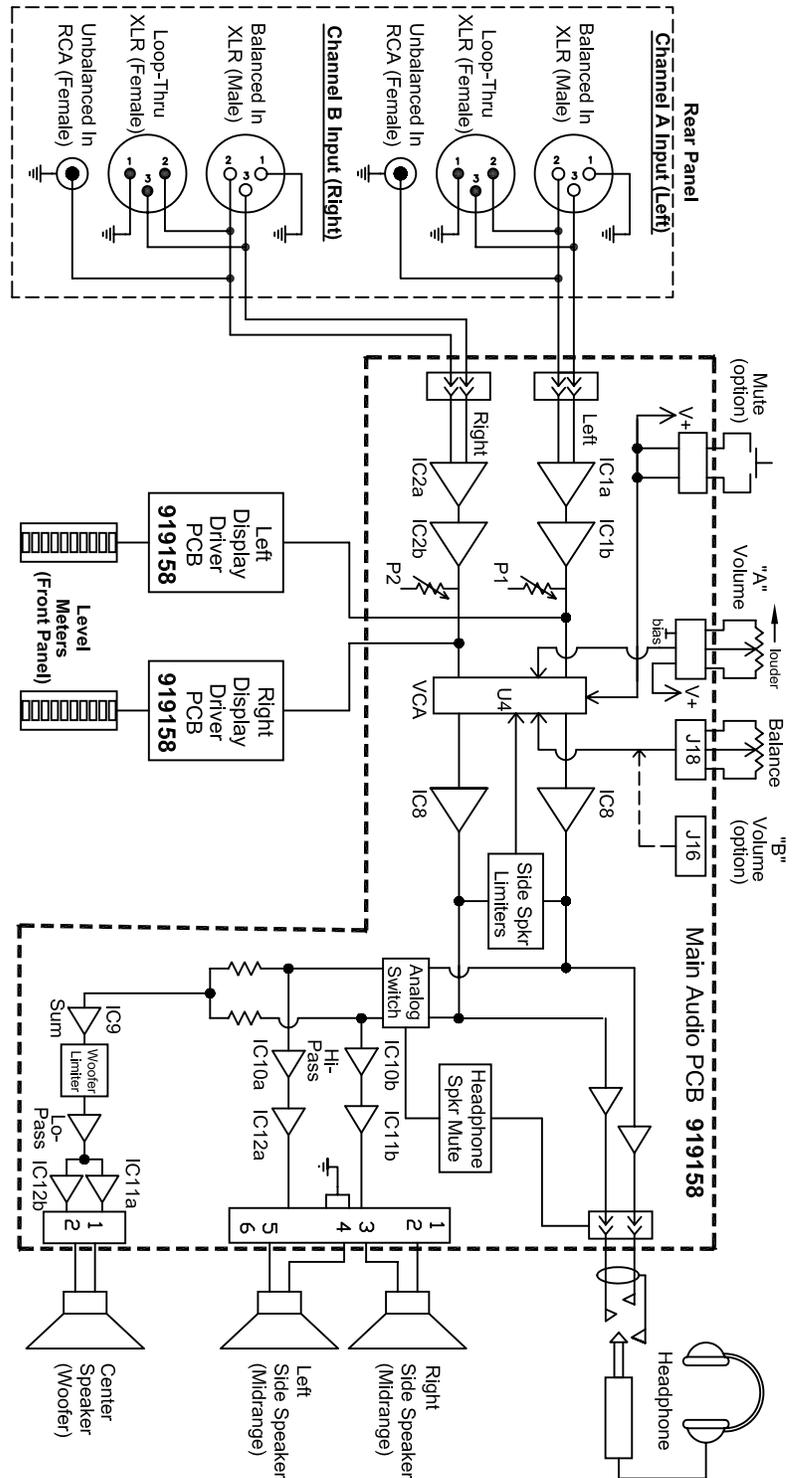
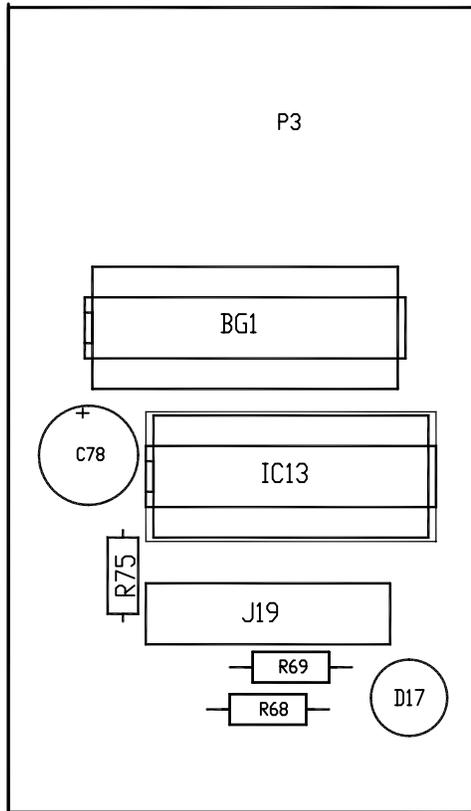
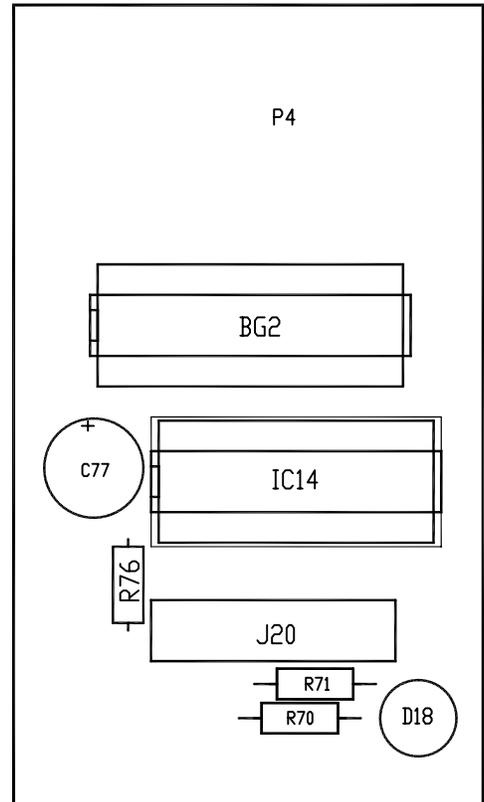


Figure 3-1: Interconnect Block Diagram

LEFT AND RIGHT METER DRIVER PCA COMPONENT LAYOUT DRAWINGS



Left Meter Driver PCA Layout Drawing



Right Meter Driver PCA Layout Drawing

Figure 3-2: Left and Right Meter Driver PCA Component Layout Drawings

AMS-1027 LEFT AND RIGHT METER DRIVER PCA SCHEMATIC

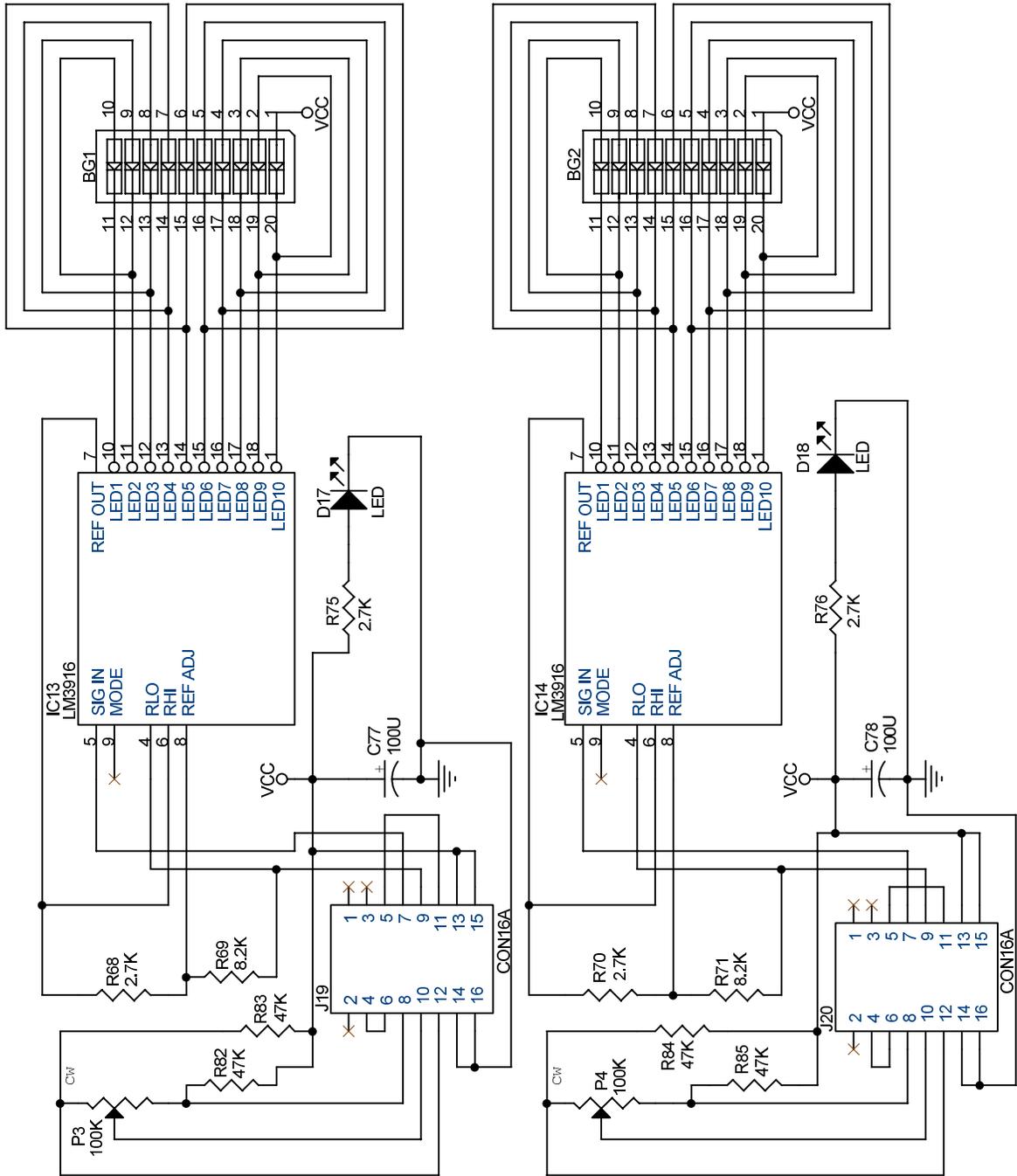


Figure 3-3: Left and Right Meter Driver Schematic

AMS-1027 MAIN AUDIO PCA COMPONENT LAYOUT DRAWING

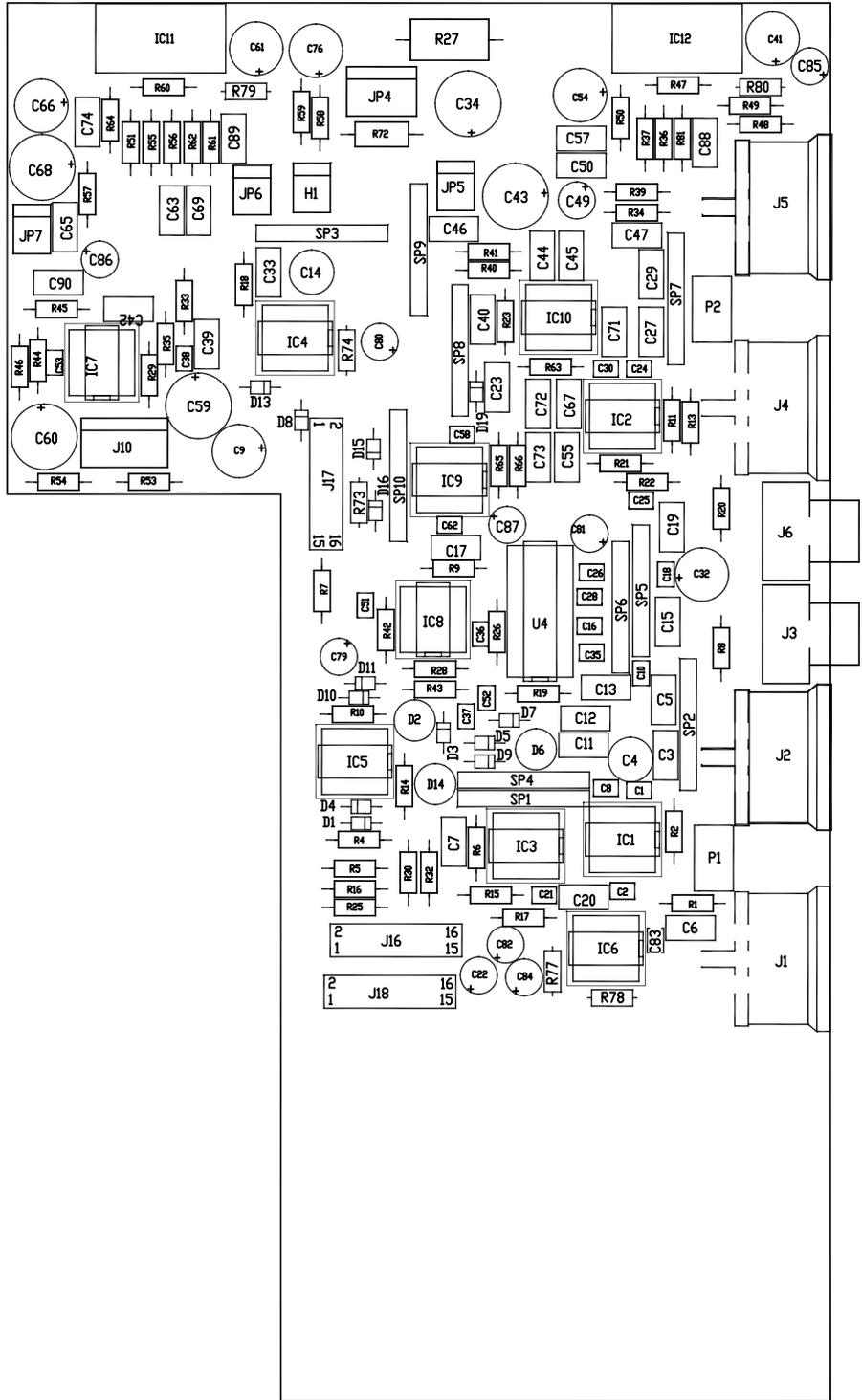
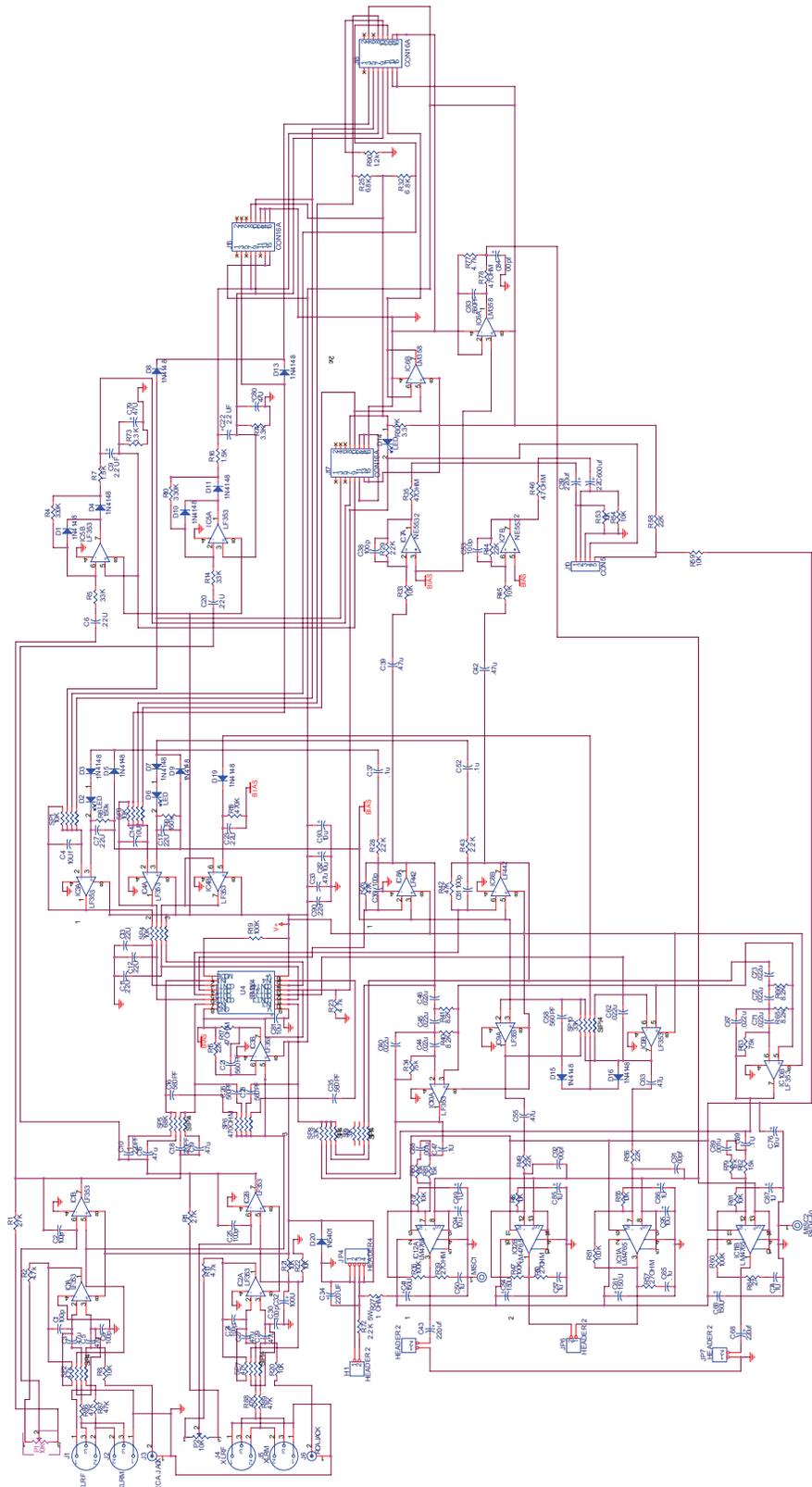


Figure 3-4: AMS-1027 Main Audio PCA Component Layout Drawing



AMS-1027 Main Audio PCA Schematic

4 SPECIFICATIONS

AMS-1027 AMPLIFIED SPEAKER STATION

0 dBu is referenced to 0.775 volts RMS

Input impedance	100K Ω balanced
Input level for full output (volume full on)	0dBu balanced, -10dBu unbalanced
Meter calibration range	-10 to +10dBu for "0" reading
Hum and noise	Better than -70dB below full output
Acoustic freq. response	60 Hz to 16 KHz (\pm 6dB)
Maximum acoustic output	96dB SPL at 2 feet
Electrical distortion	Less than 0.3% at any level below limiting threshold
Acoustic distortion (speaker outputs)	Typically <2% at any level below limiting, 100 Hz-15 KHz
Magnetic shielding	Less than 0.3 Gauss any adjacent surface
Power Amp Output to Speakers	Average 5 watts per L/R channel; 10 watts woofer
Channel Separation	Better than 70dB @ 1 KHz
Power Supply	Universal AC input (100-240 V) UL/CSA approved

Power Consumption

40 watts

Operating Temperature RangeDoes not exceed approximately 60° Celsius
(140° Fahrenheit)**Connectors**Balanced: XLR (with loop-through)
Unbalanced: RCA**Chassis dimensions (H x W x D)**1.75 x 19 x 9 inches
(44.5 x 483 x 229 mm)**Weight**

7.5 lbs. (3.4 kg)

Notice About Specifications

While Clear-Com makes every attempt to maintain the accuracy of the information contained in its product manuals, that information is subject to change without notice. Performance specifications included in this manual are design-center specifications and are included for customer guidance and to facilitate system installation. Actual operating performance may vary.

LIMITED WARRANTY

Vitec Group Communications (VGC) warrants that at the time of purchase, the equipment supplied complies with any specification in the order confirmation when used under normal conditions, and is free from defects in workmanship and materials during the warranty period.

During the warranty period VGC, or any service company authorized by VGC, will in a commercially reasonable time remedy defects in materials, design, and workmanship free of charge by repairing, or should VGC in its discretion deem it necessary, replacing the product in accordance with this limited warranty. In no event will VGC be responsible for incidental, consequential, or special loss or damage, however caused.

VGC offers 24 x 7 customer support if you have an Extended Warranty or Service Contract.

Return Material Authorization (RMA) numbers are required for all returns.

Both warranty and non-warranty repairs are available.

WARRANTY PERIOD

The product may consist of several parts, each covered by a different warranty period. The warranty periods are:

- Cables, accessories, components, and consumable items have a limited warranty of 90 days.
- Headsets, handsets, microphones, and spare parts have a limited warranty of one year.
- UHF wireless IFB products have a limited warranty of one year.
- UHF wireless intercom systems have a limited warranty of three years.
- All other Clear-Com and Drake brand systems and products, including belt packs, have a limited warranty of two years.

The warranty starts at the time of the product's original purchase. The warranty start date for contracts which include installation and commissioning will commence from the earlier of date of the Site Acceptance Test or three months from purchase.

TECHNICAL SUPPORT

To ensure complete and timely support to its customers, VGC's User Support Center is staffed by qualified technical personnel. Telephone and email technical support is offered worldwide by the User Support Center.

The User Support Center is available to VGC's customers during the full course of their warranty period. Telephone support during the warranty period will be offered at no charge between 09:00 and 17:00 according to the customer's local time zone.

In addition, for customers who purchase an Extended Warranty or Service Contract, 24-hour customer support is offered immediately upon purchase of

such agreement. For more information, contact your authorized dealer, distributor, or sales representative.

Instructions for reaching VGC's User Support Centers are given below.

Telephone for Europe, Middle East and Africa: +49 40 6688 4040

Telephone for the Americas and Asia: +1 510 337 6600

Email: vitec.support@AVC.de

Once the standard warranty period has expired, the User Support Center will continue to provide telephone support if you have purchased an Extended Warranty or Service Contract. In these cases, you will have access to telephone support 24 hours per day, 7 days per week.

WARRANTY REPAIRS AND RETURNS

Before returning equipment for repair, contact a User Support Center to obtain a Return Material Authorization (RMA). VGC representatives will give you instructions and addresses for returning your equipment. You must ship the equipment at your expense, and the support center will return the equipment at VGC's expense.

For out-of-box failures, use the following contact information:

Europe, Middle East and Africa

Tel: +44 1223 815000 Email: customerservicesEMEA@vitecgroup.com

North America, Canada, Mexico, Caribbean & US Military

Tel: +1 510 337 6600 Email: customerservicesUS@vitecgroup.com

Asia Pacific & South America

Tel: +1 510 337 6600 Email: customerservicesAPAC@vitecgroup.com

VGC has the right to inspect the equipment and/or installation or relevant packaging.

NON-WARRANTY REPAIRS AND RETURNS

For items not under warranty, you must obtain an RMA by contacting the User Support Center. VGC representatives will give you instructions and addresses for returning your equipment.

You must pay all charges to have the equipment shipped to the support center and returned to you, in addition to the costs of the repair.

EXTENDED WARRANTY

If you purchase an Extended Warranty, you are also given access free of charge to the User Support Center 24 hours a day, 7 days a week.

You can purchase an extended warranty at any time during the first two years of ownership of the product. The purchase of an extended warranty extends to five

years the warranty of any product offered with a standard two-year warranty. The total warranty period will not extend beyond five years. Any purchase of an extended warranty provides 24 x 7 customer support in addition to the warranty immediately upon purchase of the warranty extension.

Note: VGC does not offer warranty extensions on UHF wireless intercom systems, or on any product with a 1-year or 90-day warranty.

SERVICE CONTRACT

VGC also offers service contracts that provide 24 x 7 telephone support, advance replacements, training, proactive maintenance, on-site visits, and no charge for repair or replacement of equipment. For more information, contact your authorized dealer, distributor, or sales representative.

LIABILITY

THE FOREGOING WARRANTY IS VGC'S SOLE AND EXCLUSIVE WARRANTY. THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY OTHER REQUIRED IMPLIED WARRANTY SHALL EXPIRE AT THE END OF THE WARRANTY PERIOD. THERE ARE NO OTHER WARRANTIES (INCLUDING WITHOUT LIMITATION WARRANTIES FOR CONSUMABLES AND OTHER SUPPLIES) OF ANY NATURE WHATSOEVER, WHETHER ARISING IN CONTRACT, TORT, NEGLIGENCE OF ANY DEGREE, STRICT LIABILITY OR OTHERWISE, WITH RESPECT TO THE PRODUCTS OR ANY PART THEREOF DELIVERED HEREUNDER, OR FOR ANY DAMAGES AND/OR LOSSES (INCLUDING LOSS OF USE, REVENUE, AND/OR PROFITS). SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR THE LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. IN ANY EVENT, TO THE MAXIMUM EXTENT PERMITTED UNDER APPLICABLE LAW, VGC'S LIABILITY TO CUSTOMER HEREUNDER SHALL NOT UNDER ANY CIRCUMSTANCES EXCEED THE COST OF REPAIRING OR REPLACING ANY PART(S) FOUND TO BE DEFECTIVE WITHIN THE WARRANTY PERIOD AS AFORESAID.

This warranty does not cover any damage to a product resulting from cause other than part defect and malfunction. The VGC warranty does not cover any defect, malfunction, or failure caused beyond the control of VGC, including unreasonable or negligent operation, abuse, accident, failure to follow instructions in the manual, defective or improperly associated equipment, attempts at modification and repair not approved by VGC, and shipping damage. Products with their serial numbers removed or defaced are not covered by this warranty.

This warranty does not include defects arising from installation (when not performed by VGC), lightning, power outages and fluctuations, air conditioning failure, improper integration with non-approved components, defects or failures

of customer furnished components resulting in damage to VGC provided product.

This limited warranty is not transferable and cannot be enforced by anyone other than the original consumer purchaser.

This warranty gives you specific legal rights and you may have other rights which vary from country to country.