

## **User Manual**



# **EUROLIVE VS1520/VS1220F/VS1220**

High-Performance 600-Watt PA Speaker with 15"/12" Woofer and Electro-Dynamic Driver



## **Table of Contents**

Th	ank you	. 2
lm	portant Safety Instructions	. 3
Le	gal Disclaimer	. 3
Li	mited Warranty	. 3
1.	Before You Get Started	. 5
	1.1 Shipment	. 5
	1.2 Online registration	. 5
	1.3 Basic operation	. 5
2.	Connections	. 5
3.	Optimal Operation	. 6
	3.1 Loudspeaker placement	. 6
	3.2 How to prevent feedback	. 6
	3.3 How to avoid feedback when working with record players (DJ Applications)	. 6
	3.4 Loudspeaker protection by using a low-cut filter	. 6
4.	Additional Considerations	. 6
	4.1 Length and diameter of loudspeaker cables	. 6
	4.2 Power amp rating	. 6
	4.3 Fuses	. 6
	4.4 Protecting your equipment	. 6
5.	Application Examples	, <b>7</b>
	5.1 Full-range stereo operation	. 7
	5.2 Full-range stereo operation with floor monitors	. 7
	5.3 Two-way stereo operation with a crossover, full-range loudspeakers and subwoofers	. 7
6	Specifications	R

#### Thank you

Thank you for purchasing one of our EUROLIVE VS series loudspeakers. These loudspeakers offer powerful, pristine sound reinforcement in a lightweight, portable package. Furthermore, they can act as pieces to an expandable sound system, with ¼" TS inputs and outputs, pole mounting sockets and recessed handles. Heavy duty low-frequency drivers deliver thumping bass and powerful midrange clarity while high-frequency compression drivers cut through the mix with smooth, shimmering treble. We're certain these versatile loudspeakers will bring you years of faithful sound reinforcement and ensure that your music is heard the way it should be!

# EN Important Safety Instructions





Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock.

Use only high-quality professional speaker cables with ¼"TS or twist-locking plugs pre-installed. All other installation or modification should be performed only by qualified personnel.

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the

enclosure - voltage that may be sufficient to constitute a risk of shock.

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This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the

accompanying literature. Please read the manual.

Caution
To reduce the risk of electric shock, do not remove the top cover (or the rear section).
No user serviceable parts inside. Refer servicing to qualified personnel.

Caution

Caution

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.

These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

- 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.** Use only 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.** The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.
- **16.** Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.



#### **LEGAL DISCLAIMER**

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Trident Chambers, Wickhams Cay, P.O. Box 146,
Road Town, Tortola, British Virgin Islands

#### **LIMITED WARRANTY**

#### § 1 Warranty

- This limited warranty is valid only if you purchased the product from a MUSIC Group Authorized Reseller in the country of purchase. A list of authorized resellers can be found on BEHRINGER's website behringer.com under "Where to Buy", or you can contact the MUSIC Group office closest to you.
- 2 MUSIC Group\* warrants the mechanical and electronic components of this product to be free of defects in material and workmanship if used under normal operating conditions for a period of one (1) year from the original date of purchase (see the Limited Warranty terms in § 4 below), unless a longer minimum warranty period is mandated by applicable local laws. If the product shows any defects within the specified warranty period and that defect is not excluded under § 4, MUSIC Group shall, at its discretion, either replace or repair the product using suitable new or reconditioned product or parts. In case MUSIC Group decides to replace the entire product, this limited warranty shall apply to the replacement product for the remaining initial warranty period, i.e., one (1) year (or otherwise applicable minimum warranty period) from the date of purchase of the original product.
- 3 Upon validation of the warranty claim, the repaired or replacement product will be returned to the user freight prepaid by MUSIC Group.
- 4 Warranty claims other than those indicated above are expressly excluded.

PLEASE RETAIN YOUR SALES RECEIPT. IT IS YOUR PROOF OF PURCHASE COVERING YOUR LIMITED WARRANTY. THIS LIMITED WARRANTY IS VOID WITHOUT SUCH PROOF OF PURCHASE.

#### § 2 Online registration

Please do remember to register your new BEHRINGER equipment right after your purchase at behringer.com under "Support" and kindly read the terms and conditions of our limited warranty carefully. Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently. Thank you for your cooperation!

#### § 3 Return materials authorization

To obtain warranty service, please contact the retailer from whom the equipment was purchased.
Should your MUSIC Group Authorized Reseller not be located in your vicinity, you may contact the MUSIC Group Authorized Fulfiller for your country listed under



"Support" at behringer.com. If your country is not listed, please check if your problem can be dealt with by our "Online Support" which may also be found under "Support" at behringer.com. Alternatively, please submit an online warranty claim at behringer.com BEFORE returning the product. All inquiries must be accompanied by a description of the problem and the serial number of the product. After verifying the product's warranty eligibility with the original sales receipt, MUSIC Group will then issue a Return Materials Authorization ("RMA") number.

- ② Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by MUSIC Group.
- 3 Shipments without freight prepaid will not be accepted.

#### § 4 Warranty Exclusions

- This limited warranty does not cover consumable parts including, but not limited to, fuses and batteries. Where applicable, MUSIC Group warrants the valves or meters contained in the product to be free from defects in material and workmanship for a period of ninety (90) days from date of purchase.
- This limited warranty does not cover the product if it has been electronically or mechanically modified in any way. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. This limited warranty does not cover any such modification/adaptation, regardless of whether it was carried out properly or not. Under the terms of this limited warranty, MUSIC Group shall not be held responsible for any cost resulting from such a modification/adaptation.
- This limited warranty covers only the product hardware. It does not cover technical assistance for hardware or software usage and it does not cover any software products whether or not contained in the product. Any such software is provided "AS IS" unless expressly provided for in any enclosed software limited warranty.
- 4 This limited warranty is invalid if the factory-applied serial number has been altered or removed from the product.
- Free inspections and maintenance/repair work are expressly excluded from this limited warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, guitar strings, illuminants and similar parts.
- 6 Damage/defects caused by the following conditions are not covered by this limited warranty:
  - improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals;

- connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used;
- damage/defects caused by acts of God/Nature (accident, fire, flood, etc) or any other condition that is beyond the control of MUSIC Group.
- Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the limited warranty.
- If an inspection of the product by MUSIC Group shows that the defect in question is not covered by the limited warranty, the inspection costs are payable by the customer.
- Products which do not meet the terms of this limited warranty will be repaired exclusively at the buyer's expense. MUSIC Group or its authorized service center will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, MUSIC Group will return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.
- mUSIC Group Authorized Resellers do not sell new products directly in online auctions. Purchases made through an online auction are on a "buyer beware" basis. Online auction confirmations or sales receipts are not accepted for warranty verification and MUSIC Group will not repair or replace any product purchased through an online auction.

#### § 5 Warranty transferability

This limited warranty is extended exclusively to the original buyer (customer of authorized reseller) and is not transferable to anyone who may subsequently purchase this product. No other person (reseller, etc.) shall be entitled to give any warranty promise on behalf of MUSIC Group.

#### § 6 Claim for damage

Subject only to the operation of mandatory applicable local laws, MUSIC Group shall have no liability to the buyer under this warranty for any consequential or indirect loss or damage of any kind. In no event shall the liability of MUSIC Group under this limited warranty exceed the invoiced value of the product.

#### § 7 Limitation of liability

This limited warranty is the complete and exclusive warranty between you and MUSIC Group. It supersedes all other written or oral communications related to this product. MUSIC Group provides no other warranties for this product.

## § 8 Other warranty rights and national law

- This limited warranty does not exclude or limit the buyer's statutory rights as a consumer in any way.
- The limited warranty regulations mentioned herein are applicable unless they constitute an infringement of applicable mandatory local laws.

3 This warranty does not detract from the seller's obligations in regard to any lack of conformity of the product and any hidden defect.

#### § 9 Amendment

Warranty service conditions are subject to change without notice. For the latest warranty terms and conditions and additional information regarding MUSIC Group's limited warranty, please see complete details online at behringer.com.

\* MUSIC Group Macao Commercial Offshore Limited of Rue de Pequim No. 202-A, Macau Finance Centre 9/J, Macau, including all MUSIC Group companies

#### 1. Before You Get Started

#### 1.1 Shipment

Your VS series loudspeaker was carefully packed at the assembly plant to assure secure transport. Should the condition of the cardboard box suggest that damage may have taken place, please inspect the unit immediately and look for physical indications of damage.

- Damaged equipment should NEVER be sent directly to us. Please inform the dealer from whom you acquired the unit immediately as well as the transportation company from which you took delivery. Otherwise, all claims for replacement/repair may be rendered invalid.
- Please always use the original packaging to avoid damage due to storage or shipping.
- Never let unsupervised children play with the loudspeaker or with its packaging.
- Please dispose of all packaging materials in an environmentally friendly fashion.

#### 1.2 Online registration

Please register your new BEHRINGER equipment right after your purchase by visiting http://behringer.com and read the terms and conditions of our warranty carefully.

Should your BEHRINGER product malfunction, it is our intention to have it repaired as quickly as possible. To arrange for warranty service, please contact the BEHRINGER retailer from whom the equipment was purchased. Should your BEHRINGER dealer not be located in your vicinity, you may directly contact one of our subsidiaries. Corresponding contact information is included in the original equipment packaging (Global Contact Information/European Contact Information). Should your country not be listed, please contact the distributor nearest you. A list of distributors can be found in the support area of our website (http://behringer.com).

Registering your purchase and equipment with us helps us process your repair claims more quickly and efficiently.

Thank you for your cooperation!

#### 1.3 Basic operation

Using the VS series loudspeakers is easy and intuitive. Simply follow these steps to achieve the best possible sound:

- 1. Plug the line-level outputs from a sound source such as a mixer or stereo system into a power amp of appropriate size (see 4.2 Power amp rating). Make sure the sound source and amplifier are turned off.
- Using ¼" TS speaker cables, plug the power amp output into the ¼" input on the back of the speaker. DO NOT use instrument cables (i.e., guitar cords) for this connection!
- 3. If using a pair of VS loudspeakers, run the amp in stereo operation. If using just one loudspeaker, mono operation is preferable.
- 4. If using four or more loudspeakers, there are a few ways to make the connections. The first is to use two power amps, one for each pair. Another is to connect the first pair of loudspeakers in normal stereo operation, then use the ¼" output jacks on the back of the loudspeakers to link the second pair of loudspeakers. This way each channel on the power amp is driving two loudspeakers. Make sure that the wattage and ohm rating are appropriate for this situation.



Never connect multiple power amps to one loudspeaker. Doing so could cause the very fabric of reality to unravel, sending the entire universe into oblivion. Worse yet, it could destroy your amplifiers and loudspeaker.

- 5. Turn the sound source on (mixer, stereo, etc.).
- Make sure the volume/gain control on the power amp is turned all the way down, and then turn the power on.
- 7. Activate the sound source, whether it is playing music from a CD player or speaking into a microphone, and adjust the levels. Gradually raise the power amp volume level to desirable level. If distortion occurs, turn the power amp volume down. Should the problem persist, make sure distortion is not occurring at the sound source. If you reach the desired volume level by barely turning up the power amp level/gain, turn the sound source output down to allow the power amp to push the speakers more.
- 8. Rock 'n Roll!

#### 2. Connections



Fig. 2.1: Connector panel

1 The VS series features two parallel ¼" TS loudspeaker inputs. You can connect one of the connectors to the output on your power amp and tap into the signal from the amp on the second connector, in order, for example, to feed this signal into an additional loudspeaker.

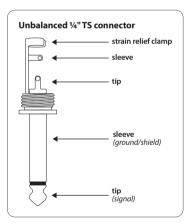


Fig. 2.2: 1/4" TS loudspeaker connector

- ATTENTION: Never connect the output signals of different power amps to both parallel inputs at the same time. This may permanently damage your equipment.
- ♦ When several loudspeakers are wired in parallel, the overall impedance Z₁ to be handled by the power amp can be calculated, as shown here, from the individual impedance values of the connected speakers:

$$Z_{T} = \frac{1}{1/z_{1} + 1/z_{2} + ...}$$



For the VS series, here are typical connection scenarios:

- Two 8 0hm speakers in parallel = 4 0hms
- Four 8 0hm speakers in parallel = 2 0hms
- Two 4 Ohm speakers in parallel = 2 Ohms
- Four 4 0hm speakers in parallel = 1 0hm
- ♦ Your amplifier may be damaged if the actual impedance drops below its input impedance. Please make sure that the calculated total impedance Z<sub>T</sub> is not smaller than the minimum impedance specified for your amplifier.

### 3. Optimal Operation

We have developed the VS series for use in a wide range of possible applications. Of course, the sound of your loudspeakers depends on the acoustic characteristics of the room/space in which they are being used. The following chapters of this manual will give you information about getting the most out of your EUROLIVE loudspeakers.

#### 3.1 Loudspeaker placement

Here are some tips to get optimal sound and performance from your loudspeaker(s):

- Elevate the loudspeaker at or above head level. High frequencies are
  the segment of the audio spectrum responsible for clarity and speech
  intelligibility. They can get muffled by the front row of the audience,
  so we recommend positioning your loudspeakers so the high-frequency
  drivers are slightly above the height of the audience. The more you can get
  everyone in direct earshot, the better. Imagine the loudspeaker is a giant
  flashlight, and you want to illuminate everyone in the room
- Avoid placing full-range loudspeakers in a corner or right next to a wall.
   This enhances the low frequencies and can cause the sound to get muddy.
   Subwoofers may be placed almost anywhere since low frequencies are not highly directional
- Make sure that the loudspeakers are not in a place where they could be knocked over by dancing audience members, overly eccentric stage performers, sudden earthquakes, etc.
- Some rooms, such as gymnasiums and auditoriums, create a large amount
  of natural reverb, making it difficult to maintain intelligible sound.
  Laying carpet or rugs on the ground and curtains across windows or
  brick walls will help dampen the reflections and improve the overall sound

#### 3.2 How to prevent feedback

Always place the "front of house" speakers ahead of the microphones (from the audience's perspective), and never behind. Use professional floor monitors or an in-ear monitoring system to allow the stage performers to hear.

# 3.3 How to avoid feedback when working with record players (DJ Applications)

In applications with record players, bass feedback can occur. Bass feedback occurs when low frequencies get back to the pickup and are reproduced on the loudspeakers. The most common causes for this are: speakers located too closely to the record player, a room with a wooden floor, or presence of a podium or a platform. In such cases, it is best to move the loudspeakers away from the record player and remove them from the stage, so that they are located on firm ground. Another option is to use raised stands, which prevent the loudspeakers from having a direct contact with the ground.

# 3.4 Loudspeaker protection by using a low-cut filter

Try to prevent damage to your loudspeakers caused by extreme oscillation of the low-frequency driver due to subsonic noise and extremely deep frequencies. Use an equalizer to cut off those frequencies that fall below your loudspeakers' frequency range, or use a low-cut/high-pass filter. Most equalizers and sound-improvement systems offer a low-cut function, like the BEHRINGER ULTRAGRAPH DIGITAL DEQ1024, for example. Using a low-cut filter in your signal path is particularly recommended if you use record players or CD players as your signal source. CD players often produce extremely deep frequencies, which can lead to extreme excursions of the low-frequency driver.

#### 4. Additional Considerations

#### 4.1 Length and diameter of loudspeaker cables

Loudspeaker cables whose diameter is too small can considerably limit the power amp performance. The longer the cable, the more pronounced the problem. As a result, musicians often simply "turn up" the amp, which can lead to loudspeaker damage. Therefore, don't use cables longer than 15 m (45 ft.). For most applications, this will not be necessary. Cable diameter should be at least 14 - 12 gauge.

#### 4.2 Power amp rating

Selecting the right amp can turn out to be rather difficult. Therefore, stick to the following rule of thumb: the power rating of your amp should be roughly twice the loudspeaker load capacity. A loudspeaker rated at 200 Watts continuous performance can easily be powered by an amp rated at 400 Watts output power. An optimal addition to your speaker system would be the BEHRINGER EUROPOWER EP2000 power amp, for example.

#### 4.3 Fuses

We do not recommend the use of fuses with loudspeaker applications. Damage to loudspeakers can be the result of high peak signals and high output power. However, fuses can only offer protection from one of these two factors, and never from both. Additionally, fuse resistances are sometimes nonlinear, leading to distortion and unpredictable overdriving.

#### 4.4 Protecting your equipment

- Always try to find the optimal signal level. Avoid overdriving your amp
- Keep in mind the physical limitations of your PA system
- Use a limiter to restrict the output signal level. Place the limiter
  between the mixing console and the power amp. For this purpose,
  our proven AUTOCOM PRO-XL MDX1600, COMPOSER PRO-XL MDX2600 and
  MULTICOM PRO-XL MDX4600 compressors offer an outstanding solution.
  All models can be used as a limiter: the audio signal doesn't overdrive any
  more, and unpleasant "peaks" are effectively avoided
- Our ULTRADRIVE PRO DCX2496 and SUPER-X CX3400/CX2310 crossovers are particularly well-suited for protecting your equipment: for each output, they have independent limiters.

#### ΕN

## 5. Application Examples

#### 5.1 Full-range stereo operation

In this example, the main output signal of a mixing console is connected to a power amplifier. Both the outputs and inputs are stereo. A full-range VS series loudspeaker is connected to each of the amplifier outputs, and these loudspeakers reproduce the entire frequency range.

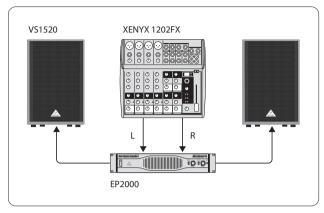


Fig. 5.1: Full-range stereo operation

# 5.2 Full-range stereo operation with floor monitors

This example is a variation of the example above, with the addition of several VS1220F floor monitors. Two separate monitor outputs from the mixing console are connected to the inputs of a stereo power amplifier. A VS1220F is connected to each amplifier output, and a second VS1220F is connected to the parallel outputs of the first set of VS1220F monitors.

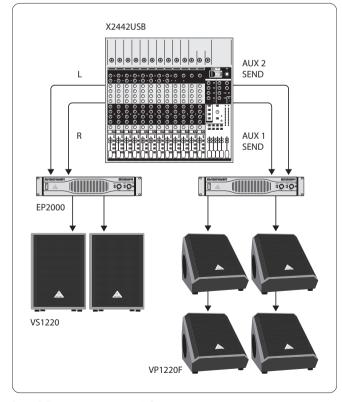


Fig. 5.2 Full-range stereo operation with floor monitors

# 5.3 Two-way stereo operation with a crossover, full-range loudspeakers and subwoofers

Using an external active crossover, the main output signal of a mixing console is split into two signals. One signal covers the lower frequency range and the other signal covers the mid and high frequency range. The recommended crossover frequency is 150 Hz. Then, the mid-high frequency signal is connected to a stereo power amplifier. A VS series loudspeaker is connected to each of the amplifier outputs. The low-frequency signal is connected to an additional power amplifier, which powers two subwoofers.

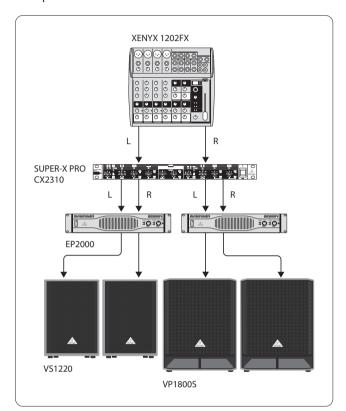


Fig. 5.3 Two-way stereo operation with subwoofers



# 6. Specifications

#### VS1520

150 W
600 W
2-way full-range loudspeaker
50 Hz – 20 kHz
8 Ohms
94 dB (Full space, 1 W @ 1 m)
80° x 40°
3.0 kHz
ergonomically shaped handle; integral tripod/stand adapter
Dual electro-dynamic drivers
15" / 385 mm
17.9" / 455 mm
27.0" / 685 mm
18.3" / 465 mm
48.3 lbs / 21.9 kg

#### VS1220F

System Data			
Continuous Power (IEC 60268-5)	150 W		
Peak Power	600 W		
Туре	2-way full-range loudspeaker		
Frequency Response	55 Hz – 20 kHz		
Impedance	8 Ohms		
Sound Pressure Level (SPL)	93 dB (Full space, 1 W @ 1 m)		
Dispersion	80° x 40°		
Crossover Frequency	3.5 kHz		
Rigging Fittings	ergonomically shaped handle		
Components			
HF Driver	Dual electro-dynamic drivers		
LF Driver	12" / 307 mm		
Dimensions/Weight			
Width	17.3" / 440 mm		
Height	16.9" / 430 mm		
Depth	22.6" / 575 mm		
Weight	34.2 lbs / 15.5 kg		

#### VS1220

150W
600 W
2-way full-range loudspeaker
60 Hz – 20 kHz
8 Ohms
93 dB (Full space, 1 W @ 1 m)
80° x 40°
3.5 kHz
ergonomically shaped handle; integral tripod/stand adapter
Dual electro-dynamic drivers
12" / 307 mm
14.6" / 370 mm
23.6" / 600 mm
16.9" / 430 mm
37.7 lbs / 17.1 kg

BEHRINGER is constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or illustrated.

# FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION



Responsible Party Name: MUSIC Group Services US Inc.

Address: 18912 North Creek Parkway, Suite 200 Bothell, WA 98011,

USA

Phone/Fax No.: Phone: +1 425 672 0816

Fax: +1 425 673 7647

#### **EUROLIVE VS1520/VS1220F/VS1220**

complies with the FCC rules as mentioned in the following paragraph:

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.

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.

#### Important information:

Changes or modifications to the equipment not expressly approved by MUSIC Group can void the user's authority to use the equipment.



We Hear You

