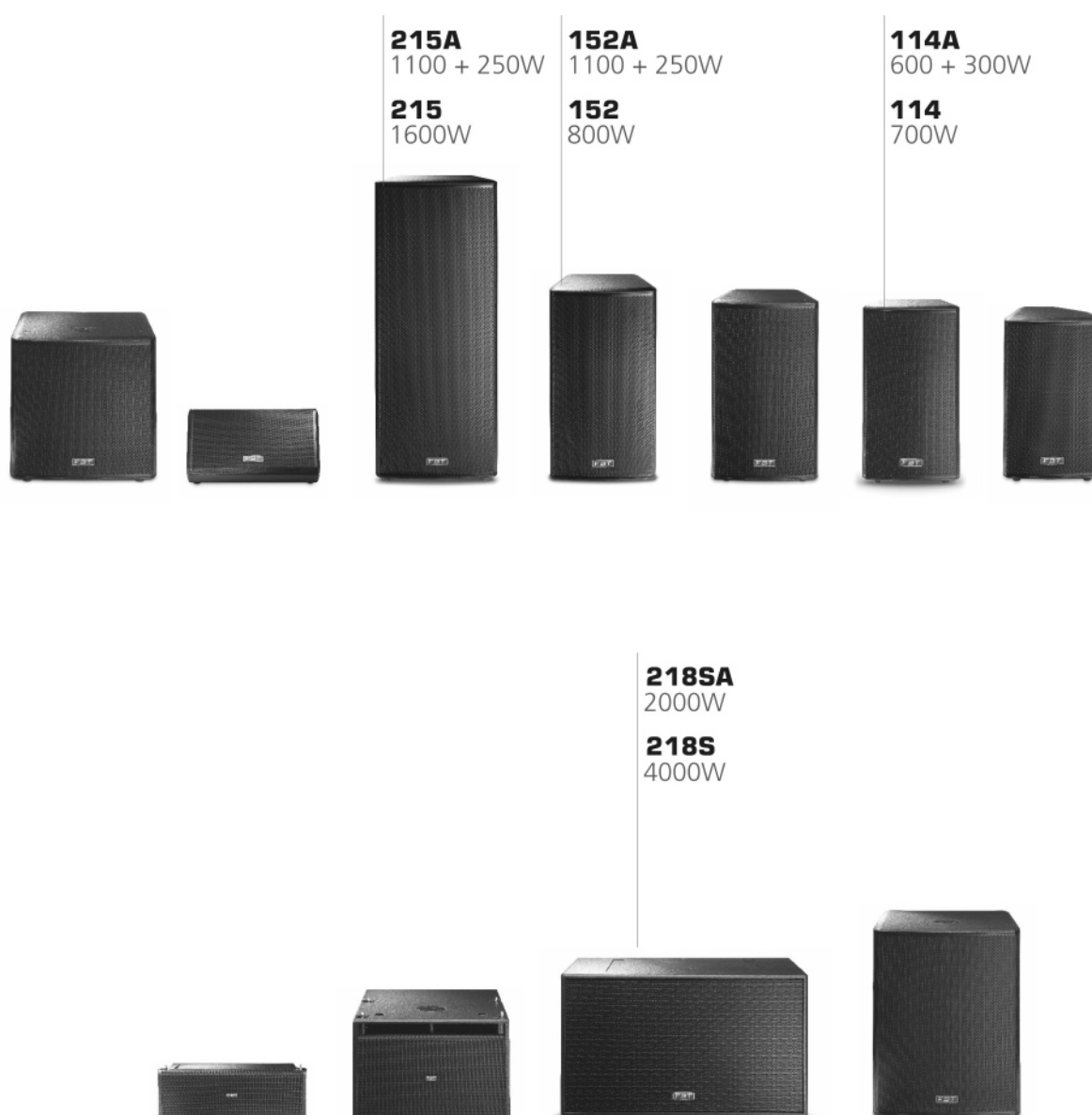




MITUS

Sound Reinforcement Speaker Series



Operating Manual

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WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN



**TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL**

**TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE**



WHERE MARKED, THIS SYMBOL INDICATES A DANGEROUS NON-ISOLATED VOLTAGE INSIDE THE LOUDSPEAKER:
SUCH VOLTAGE COULD BE SUFFICIENT TO RESULT IN THE RISK OF ELECTRIC SHOCK.



WHERE MARKED, THIS SYMBOL INDICATES IMPORTANT USAGE AND MAINTENANCE INSTRUCTIONS IN THE ENCLOSED DOCUMENTS. PLEASE REFER TO THE MANUAL.

IMPORTANT SAFETY INSTRUCTIONS

- 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.



THE DEVICE MUST BE CONNECTED TO THE MAIN POWER OUTLET THROUGH A POWER OUTLET WITH A PROTECTIVE EARTH C

This device features a power outlet ; install the device so that the outlet for the power cord is easily accessible .

PRECAUTIONS

- ° For proper air ventilation please make sure to leave sufficient clearance (min 11 inc.) on all sides of the device.
- ° Please do not cover the ventilation slots with papers, table cloths, curtains, etc. in order not to prevent ventilation of the device.
- ° Please do not place any naked flame source, such as lighted candles, on the device.
- ° Please keep the device away from water springs and splashes and please do not place any objects containing liquids, such as vases, on the device.

The **MITUS** sound reinforcement series is the result of FBT's experience and passion for excellence. A comprehensive range of 2-way speakers for FOH applications, subwoofers, stage monitor and line arrays in passive and bi-amplified designs. Whether in live or touring applications or in permanent installations, they will be appreciated by any musicians and professionals looking for the finest sound quality.

The **MITUS 206** is the flagship model of the range: a line array with 2 x 165mm woofers and a driver with 36mm exit throat coupled to a waveguide, engineered to meet the physical criteria of the ideal cylindrical wave source for the whole audio range. With a gas injection moulded polypropylene cabinet and built-in suspension system, MITUS 206 is a great result of the mechanical and electronic engineering of FBT. Through use of the FBT aiming software program for PCs it is possible to simulate the SPL distribution and frequency response of the listening.

MITUS 212 is a 2x320mm compact subwoofer with built-in suspension system, ideal to extend the low frequencies of MITUS 206 in flying or ground-stacked line arrays.

MITUS 118, MITUS121 and MITUS 218 complete the subwoofer range with respectively 460mm, 530mm and 2x460mm woofers. They are a perfect complement for MITUS satellites in live or permanent applications where they reinforce and extend the low frequency range with the high SPL they can offer. They are all made of birch plywood with black scratch resistant paint finish.

MITUS 115, MITUS 112, MITUS 114, MITUS 152 and MITUS 215 are 2-way bi-amplified FOH speakers suitable for a wide range of applications, especially when matched along with the MITUS subs. They guarantee stunning sound quality in live events or permanent installations.

With a low and elegant profile enclosure design, the **MITUS 210** is undoubtedly the most technologically advanced stage monitor of its own category. Two 250mm woofers – one of whom is coaxial – with 36mm drivers guarantee the highest fidelity and headroom for any live performances of TV broadcasts.

The whole MITUS series is equipped with:

- High quality B&C neodymium magnet woofers custom manufactured for FBT
- The latest generation of B&C compression drivers
- High efficiency class D power amp modules with switch mode power supplies fixed to a die-cast aluminum chassis
- DSP with A/D - D/A low noise converters
- Neutrik Powercon IN & LINK out power receptacles
- A wide range of accessories makes the MITUS range extremely flexible for live or permanent installations
- New aluminum die-cast carrying handles
- Heavy duty metal grille with anti-resonance spacers and exclusive synthetic cloth

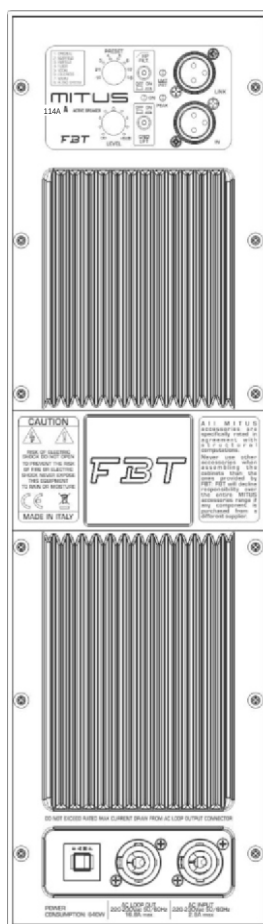
GENERAL FEATURES

114A	114	2 WAY BI-AMPLIFIED BASS REFLEX DESIGN: > 14" B&C neodymium magnet woofer with 3" voice coil > 1x1.4" exit B&C neodymium magnet HF driver with 2.5" voice coil > Frequency response from 46Hz to 20kHz > Class D amplifiers, 600W RMS to the LF and 300W RMS to the HF, switch mode power supply > DSP with 8 eq. presets > Control panel with XLR input e link, volume, presets, HP filter, ground lift. > 70°H x 50°V rotatable horn > 5/8" birch plywood enclosure, scratch resistant black paint finish > 12 x M10 fly points, 1.38" speaker stand socket and two FBT design aluminum handles > Ideal for live sound reinforcement applications as both front of house main PA and as a stage monitor > Weight 54.8 lb Passive version: > Recommended amplifier 700W RMS / 8 Ohm. > Hi-grade passive internal crossover featuring " soft trip " circuitry protection of WF and TW transducers > Neutrik Speakon NL4 IN & LINK out connectors.
152A	152	2 WAY BI-AMPLIFIED BASS REFLEX DESIGN: > 15" B&C neodymium magnet woofer with 3" voice coil > 2" exit B&C neodymium magnet HF driver with 2.5" voice coil > Frequency response from 45Hz to 20kHz > Class D amplifiers, 1100W RMS to the LF and 250W RMS to the HF, switch mode power supply > DSP with 6 eq. presets > Control panel with XLR input e link, volume, presets, HP filter, ground lift. > 60°H x 40°V rotatable horn > 5/8" birch plywood enclosure, scratch resistant black paint finish > 12 x M10 fly points, 1.38" speaker stand socket and two FBT design aluminum handles > Ideal for live sound reinforcement applications as both front of house main PA and as a stage monitor > Weight 80.46 lb PASSIVE VERSION: > Recommended amplifier 800W RMS / 8 Ohm. > Hi-grade passive internal crossover featuring " soft trip " circuitry protection of WF and TW transducers > Neutrik Speakon NL4 IN & LINK out connectors.
215A	215	2 WAY BI-AMPLIFIED BASS REFLEX DESIGN: > 2x15" B&C neodymium magnet woofer with 3" voice coil > 2" exit B&C neodymium magnet HF driver with 2.5" voice coil > Frequency response from 47Hz to 20kHz > Class D amplifiers, 1100W RMS to the LF and 250W RMS to the HF, switch mode power supply > DSP with 6 eq. presets > Control panel with XLR input e link, volume, presets, HP filter, ground lift. > 60°H x 40°V rotatable horn > 5/8" birch plywood enclosure, scratch resistant black paint finish > 12 x M10 fly points, 1.38" speaker stand socket and two FBT design aluminum handles > Ideal for live sound reinforcement applications as both front of house main PA and as a stage monitor > Weight 105.82 lb PASSIVE VERSION: > Recommended amplifier 1600W RMS / 4 Ohm. > Hi-grade passive internal crossover featuring " soft trip " circuitry protection of WF and TW transducers > Neutrik Speakon NL4 IN & LINK out connectors.
218SA	218S	LARGE VENTED BASS REFLEX SUBWOOFER: > 2 x 18" custom B&C neodymium high excursion woofer with 4" coil > Frequency response from 30Hz to 100Hz. > Class D amplifiers delivering 2000W RMS > DSP with 6 presets, cardioid and infra configurations, delay. > Control panel with XLR input e link, volume preset, delay, phase 0°-180°. > 3/4" birch plywood enclosure with large reflex vent free from turbulence, scratch resistant black paint > M20 stand socket and six FBT design aluminum handles > 4 swivel-mount casters 3.15" (optional) > Perfect low-frequency extension for the MITUS range PASSIVE VERSION: > Recommended amplifier 4000W RMS / 4 Ohm. > Speakon NL4 IN & OUT connectors. > External digital processor required



THE MITUS 218S IS NOT EQUIPPED WITH INTERNAL PASSIVE CROSSOVER; A CONNECTION TO THE POWER UNIT WITHOUT PROCESSOR WILL DAMAGE THE SPEAKER.

114A



PRESET: Selects 8 presets, each of whom corresponds to a different equalization according to users' personal preferences and to the acoustics of the listening area (see PRESET section.)

LEVEL: Adjusts the signal general level.

GND LIFT: A switch for the electric separation between the ground and earth circuits; this can be useful in order to remove the irritating noises caused by ground loops.

ON: Indicates that the system is on.

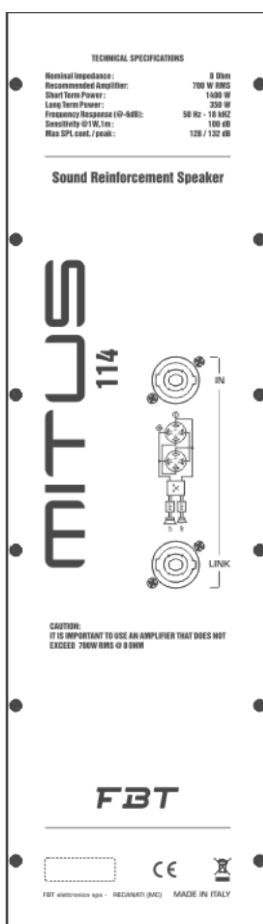
HP FILTER: This switch activates the low-cut filter which lets only the frequencies above the cut-off frequency pass at the output.

PEAK: When this LED lights up, it indicates that the signal is reaching saturation.

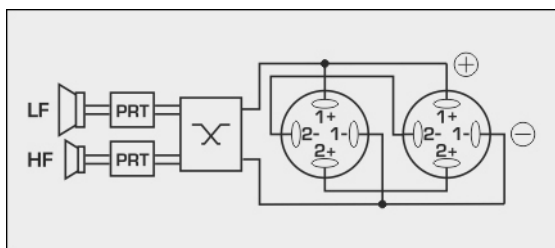
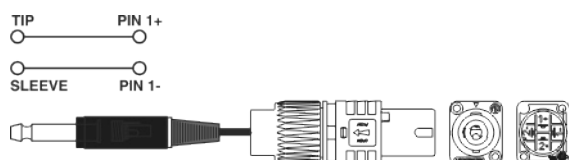
LMT/PRT: If this LED lights up, there is a system malfunction due to an internal amplifier failure or to the intervention of current limiting circuits against thermal overload.

IN-LINK: Balanced input/output sockets; "IN" allows to connect a pre-amplified signal such as that coming, for instance, from mixer output. "LINK" allows to connect multiple speakers to the same signal.

114



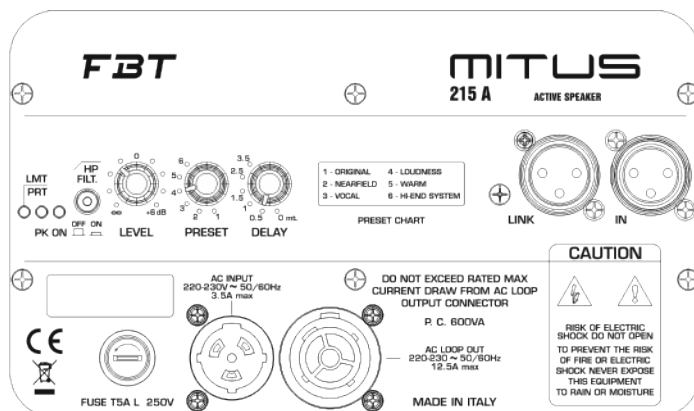
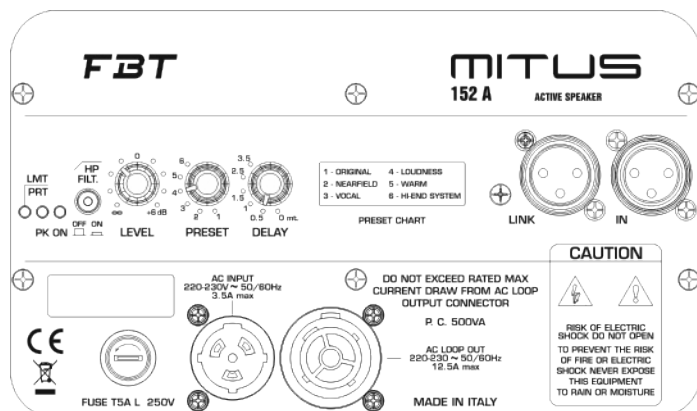
Speakon connectors are connected in parallel mode. One connector can be used to connect the box to the output of a power amplifier, the other to connect to a second box. Loudspeaker cables shall have the adequate diameter, depending on the overall length of the connection. The resistance introduced by an inadequate wiring towards the loudspeakers would reduce both the power output and the damping factor of the loudspeaker.



CONTROLS AND FUNCTIONS

152A

215A



LMT/PRT: If this led lights up there is a system malfunction due to an internal amplifier failure or to the intervention of current limiting circuits against thermal overload.

PEAK: When this led lights up it indicates that the signal is reaching saturation

ON: Indicates that the system is on.

HP FILTER: This switch activates the low-cut filter which lets only the frequencies above the cut-off frequency pass at the output.

LEVEL: Adjusts the signal general level.

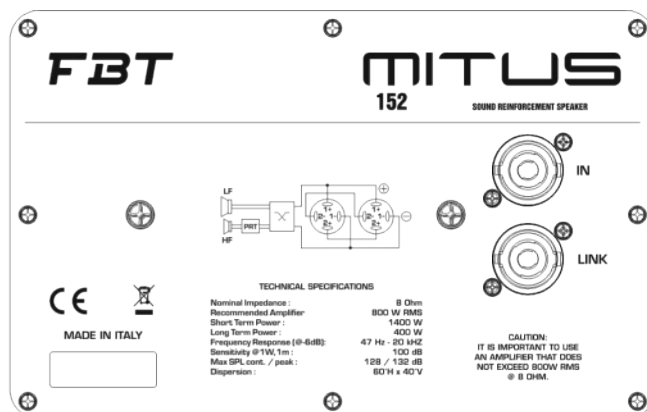
PRESET: Selects 6 presets, each of whom corresponds to a different equalization according to users' personal preferences and to the acoustics of the listening area (see PRESET section).

DELAY: Control of a digital delay line acting on the input signal; in this way it is possible to make up for the vertical misalignment of sub and satellite.

IN-LINK: Balanced input/output sockets; "IN" allows to connect a pre-amplified signal such as that coming, for instance, from mixer output. "LINK" allows to connect multiple speakers to the same signal.

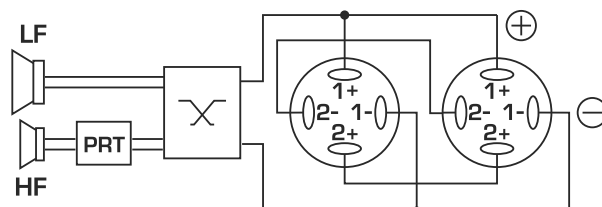
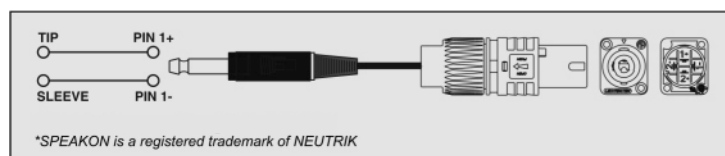
152

215

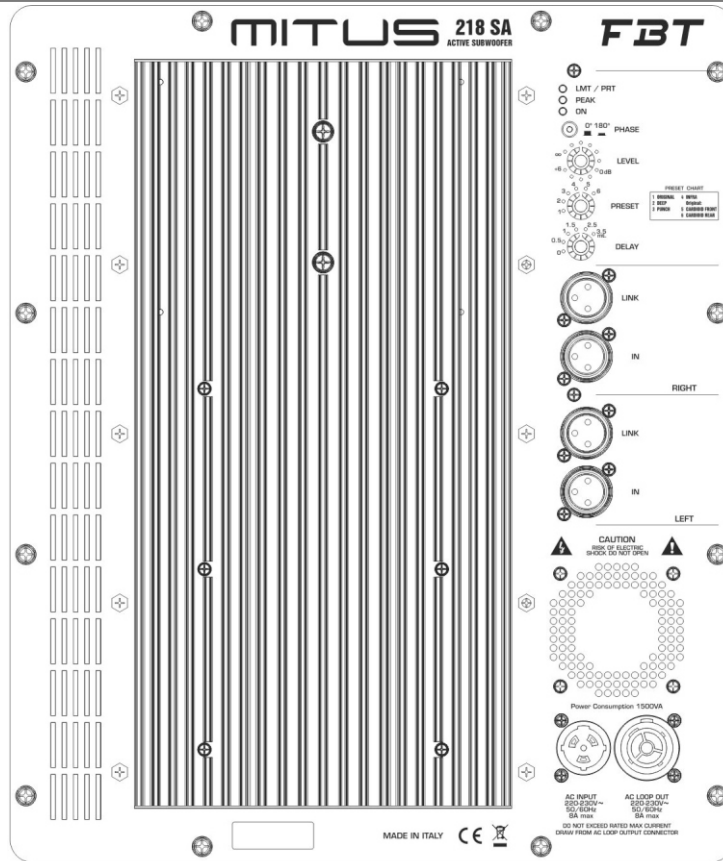


Speakon connectors are connected in parallel mode. One connector can be used to connect the box to the output of a power amplifier, the other to connect to a second box.

Loudspeaker cables shall have the adequate diameter, depending on the overall length of the connection. The resistance introduced by an inadequate wiring towards the loudspeakers would reduce both the power output and the damping factor of the loudspeaker.



218SA



LMT/PRT: If this led lights up there is a system malfunction due to an internal amplifier failure or to the intervention of current limiting circuits against thermal overload.

PEAK: When this led lights up it indicates that the signal is reaching saturation.

ON: Indicates that the system is on.

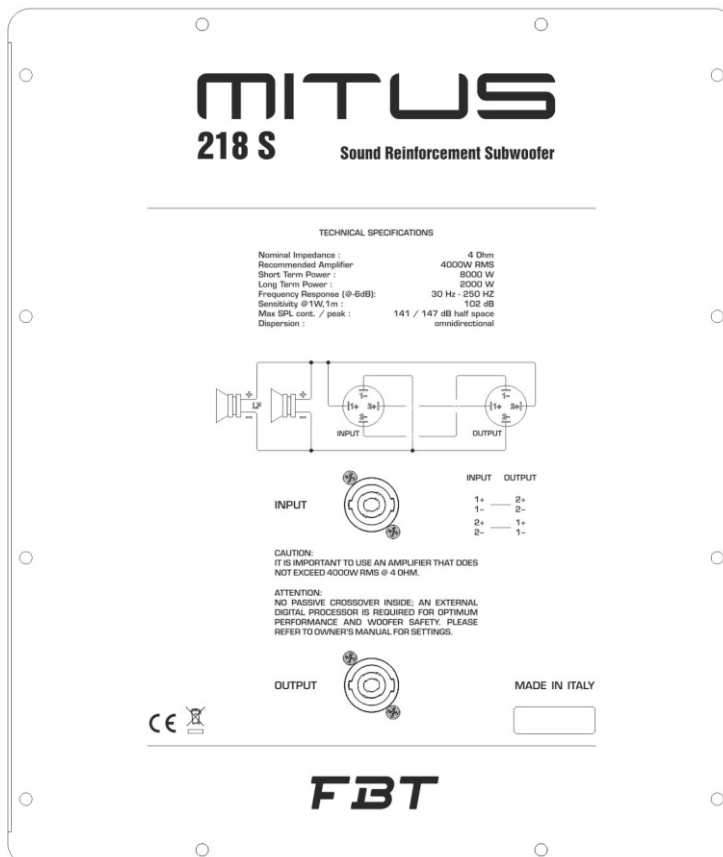
PHASE: The Phase control allows to optimize phase alignment, i.e. to obtain a uniform frequency response in the crossover area between the sub and the satellite. When it is set at 0° the sound emission is in phase with the input signal; when it is set at 180° the sound emission is in counterphase with the input signal. Thanks to this control subwoofer adjustment will be even more flexible with a consequent performance optimization.

LEVEL: It adjusts the signal general level.

PRESET: Select 6 preset each of whom corresponds to a specific speaker configuration according to users' personal preferences and to the acoustics of the listening area (see PRESET section).

DELAY: Control of a digital delay line acting on the input signal; in this way it is possible to make up for the vertical misalignment of sub and satellite.

218S



IN-LINK: Balanced input/output sockets; "IN" allows to connect a pre-amplified signal such as that coming, for instance, from mixer output; "LINK" allows to connect multiple speakers to the same signal.

Loudspeaker cables shall have the adequate diameter, depending on the overall lenght of the connection. The resistance introduced by an inadequate wiring towards the loudspeakers would reduce both the power output and the damping factor of the loudspeaker.

152A

215A

- | | |
|---------------|-------------------|
| 1 - ORIGINAL | 4 - LOUDNESS |
| 2 - NEARFIELD | 5 - WARM |
| 3 - VOCAL | 6 - HI-END SYSTEM |

114A

- | |
|------------------|
| 1- ORIGINAL |
| 2- NEARFIELD |
| 3- FARFIELD |
| 4- FLOOR |
| 5- VOCAL |
| 6- LOUDNESS |
| 7- WARM |
| 8- HI-END SYSTEM |

218SA

- | |
|------------------|
| 1 ORIGINAL |
| 2 DEEP |
| 3 PUNCH |
| 4 INFRA |
| Original: |
| 5 CARDIOID FRONT |
| 6 CARDIOID REAR |

Every MITUS series speaker features 6 (8 for MITUS 114A) different presets designed to adapt the speaker answer to the environment where it will be used or to make it suitable for special uses. The presets are a quick and precise tool for installers or sound technicians to speed up system setup according to the most frequent usage conditions.

ORIGINAL:

Corresponds to the typical FBT sound. It is the default general purpose preset and is thus fit for the majority of applications.

DEEP:

This preset extends and emphasizes the low range of the subwoofer, for a very deep and soft sound suitable for high quality and medium energy applications, such as acoustic music, jazz, etc.

PUNCH:

The sound of the sub becomes drier, reduced low frequency extension but more energy concentrated in the 80-120Hz range. Suitable for rock music and high SPL applications.

INFRA:

The filter is set to a lower frequency with respect to the other presets, thus only very low frequencies are reproduced.

ORIGINAL - CARDIOID FRONT - CARDIOID REAR:

Below there are two presets for cardioid configuration with ORIGINAL equalization curve, i.e. by default suitable for general purpose.

CARDIOID FRONT: cardioid configuration, set this preset on the sub oriented toward the audience

CARDIOID REAR: cardioid configuration, set this preset on the sub oriented toward the stage (physically rotated 180° with respect to the front)

NEARFIELD:

Suitable for a very close listening, up to 7/8 mt. Recommended for small rooms or with a very close audience where a medium-high SPL is anyway required.

VOCAL:

Permits obtaining top intelligibility of spoken language even in difficult environments or with high "noise floor". The passband is modified to emphasize vocal range.

LOUDNESS:

Typical answer curve for music application or record, with bass and treble emphasized with respect to the middle frequencies that, instead, remain slightly in the background. This preset is very satisfying if listened to at low volume but is also suitable for using the speaker in discos and pubs.

WARM:

Gives a dense sound quality on middle-low frequencies and a less aggressive quality on trebles. Suitable for broadcasting music in very sound-absorbing environments or in situations that require a very strong sound at low frequencies and a sweet sound at middle-high frequencies.

HI-END SYSTEM:

It is characterized by the typical answer of top class speakers that are exclusively designed for touring applications. Therefore, very linear answer and passband without too much extension on the extremes. Those who are used to working with highly professional audio systems will find what they look for in this preset.

FARFIELD:

For listening to the speaker at a distance over 15-20m. Suitable when the sound has to be projected over long distances.

FLOOR:

The speaker has specialized and work as stage monitor. The answer is balanced to take into account the proximity to the floor and the listening of sounds in a nearfield.

POWER SUPPLY

220-230V~

For power supply, MITUS152A, 215A and 218SA models feature a NEUTRIK POWERCON cable duplex with input and output.

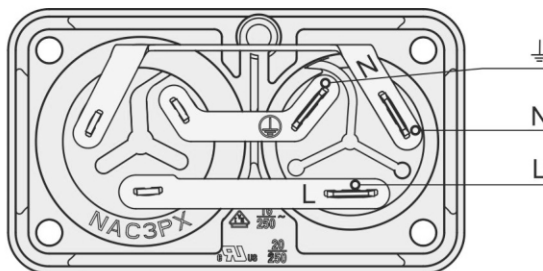
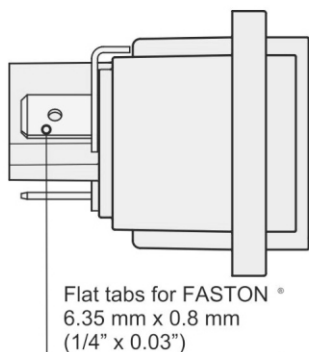
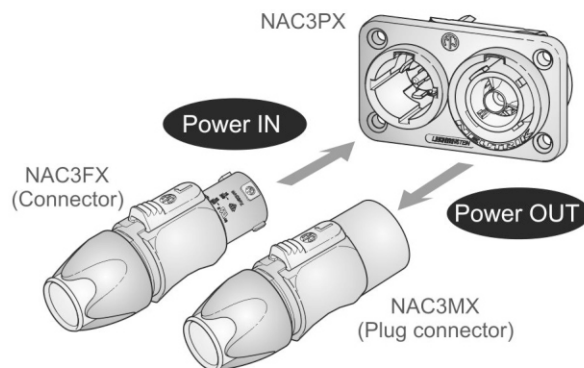
CAUTION: never replace the plug of the power cord supplied since the power cord can only support a maximum current of 16A.

- The power cord has to be assembled by specialized staff complying with national plant-engineering regulations.
- Protect the mains cable when it is not used.
- Making sure the maximum current indicated on the "AC LOOP OUTPUT" is not exceed.



CAUTION: TO SWITCH OFF THE SYSTEM DISCONNECT THE MAINS SUPPLY PLUG **FIRST** AND **THEN** THE POWERCON CONNECTOR

powerCON*



120V ~

For power supply, MITUS152A, 215A and 218SA models feature a NEUTRIK POWERCON cable duplex with input and output.

CAUTION: If the total current demand does not exceed 15A use the power cable supplied. If the total current demand is between 15A and 20A, use the power cable AWG 12 SJT VW1 with plug rated current equal or greater than 30A.

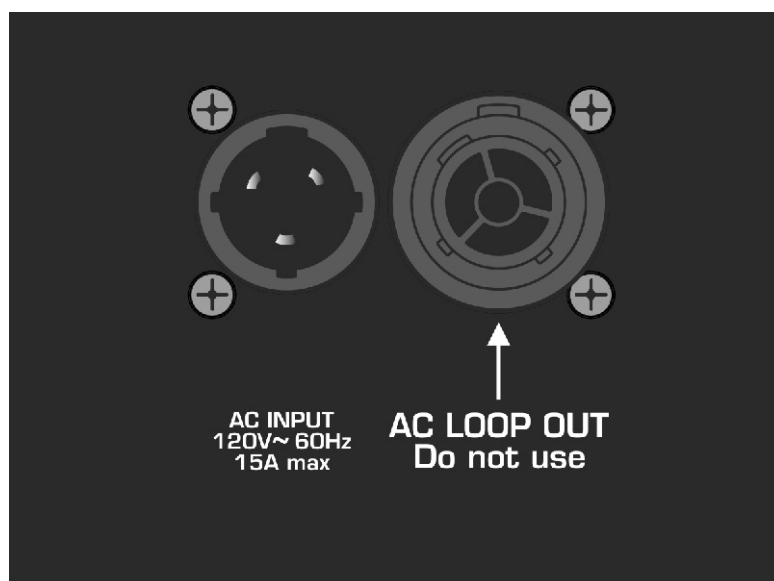
THE CABLE AND THE PLUG MUST HOLD THE **UL** OR **CSA** CERTIFICATION.

- The power cord has to be assembled by specialized staff complying with national plant-engineering regulations.
- Protect the mains cable when it is not used.
- Making sure the maximum current indicated on the "AC LOOP OUTPUT" is not exceed.



CAUTION: TO SWITCH OFF THE SYSTEM DISCONNECT THE MAINS SUPPLY PLUG **FIRST** AND **THEN** THE POWERCON CONNECTOR

MITUS 218SA



220-230V~



For its power supply the MITUS 114A series features two NEUTRIK powercon three-pole outlets with locking connectors. Use the grey outlet for connecting several speakers with one another, and the blue one for supplying power to the system through the connector supplied.

CAUTION: the cable supplied can be used alone, and only if the total current absorption is lower than 16A (see example 1).

CAUTION: never replace the plug of the power cord supplied since the power cord can only support a maximum current of 16A (see example 1).

CAUTION: if the absorbed current exceeds 16A and is lower than 20A, a power cord has to be manufactured by specialized staff using a H05VV-F cable with 2.5 sq. mm section and plug with rated current $\geq 20A$, where 20A is the maximum rated current of the powercon connector (see example 2).

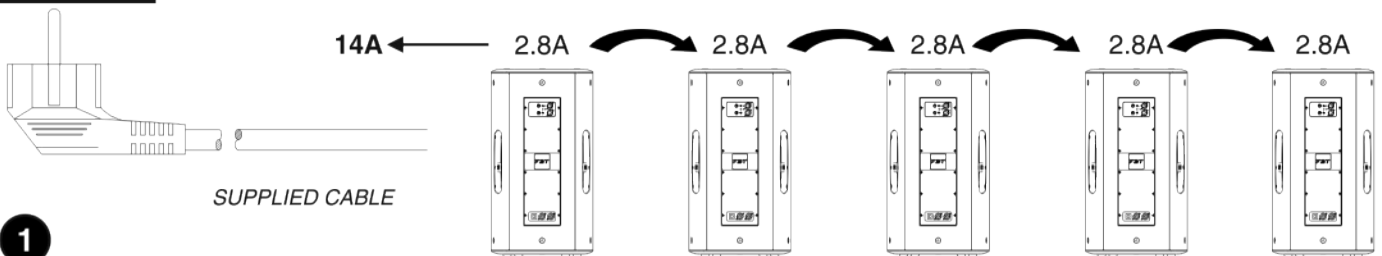
- The power cord has to be assembled by specialized staff complying with national plant-engineering regulations.
- Protect the mains cable when it is not used.
- In case of "chain connection" connect the cable to the grey outlet of the first speaker and to the blue outlet of the second one, and so on, **making sure the maximum current indicated on the "AC LOOP OUTPUT" is not exceeded.**



CAUTION: TO SWITCH OFF THE SYSTEM DISCONNECT THE MAINS SUPPLY PLUG **FIRST** AND **THEN** THE POWERCON CONNECTOR

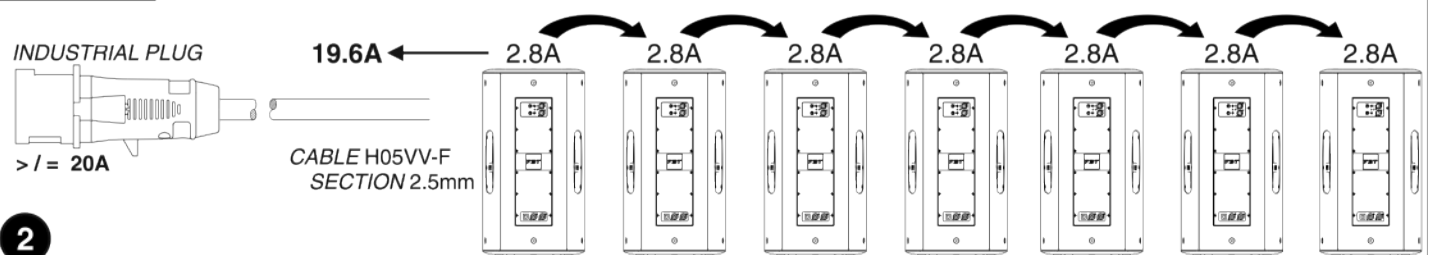
MAX. 16A

MAX. 5 BOX



MAX. 20A

7 BOX



POWER SUPPLY

120V ~



For its power supply the whole MITUS series features two NEUTRIK powercon three-pole outlets with locking connectors. Use the grey outlet for connecting several speakers with one another, and the blue one for supplying power to the system through the connector supplied.

CAUTION: If the total current demand does not exceed 12A, use the power cable supplied (see pic.1).

If the total current demand is between 12A and 18A, use the power cable AWG14SJT VW1 with plug rated current equal to 24A or lower (see pict. 2).

In both cases **NEVER** exceed the maximum current values shown in picture 1 and 2.

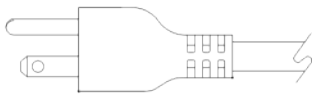
THE CABLE AND THE PLUG MUST HOLD THE **UL** OR **CSA** CERTIFICATION.

- The power cord has to be assembled by specialized staff complying with national plant-engineering regulations.
- Protect the mains cable when it is not used.
- In case of "chain connection" connect the cable to the grey outlet of the first speaker and to the blue outlet of the second one, and so on, **making sure the maximum current indicated on the "AC LOOP OUTPUT" is not exceeded.**



CAUTION: TO SWITCH OFF THE SYSTEM DISCONNECT THE MAINS SUPPLY PLUG **FIRST** AND **THEN** THE POWERCON CONNECTOR

MAX. 12A

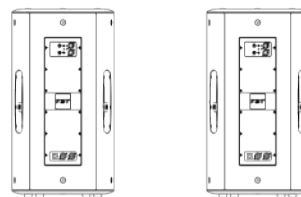


SUPPLIED CABLE
CORD TYPE SJT3 x 14 VW1

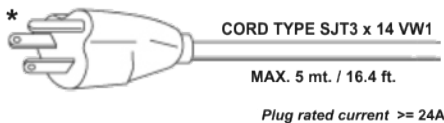
1

MAX. 2 BOX

11.2A ← 5.6A → 5.6A



MAX. 18A

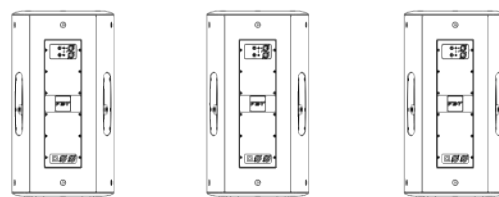


2

* NOTE: plug drawing is for indication only

MAX. 3 BOX

16.8A ← 5.6A → 5.6A → 5.6A



ROTATABLE HORN

152A

215A

152

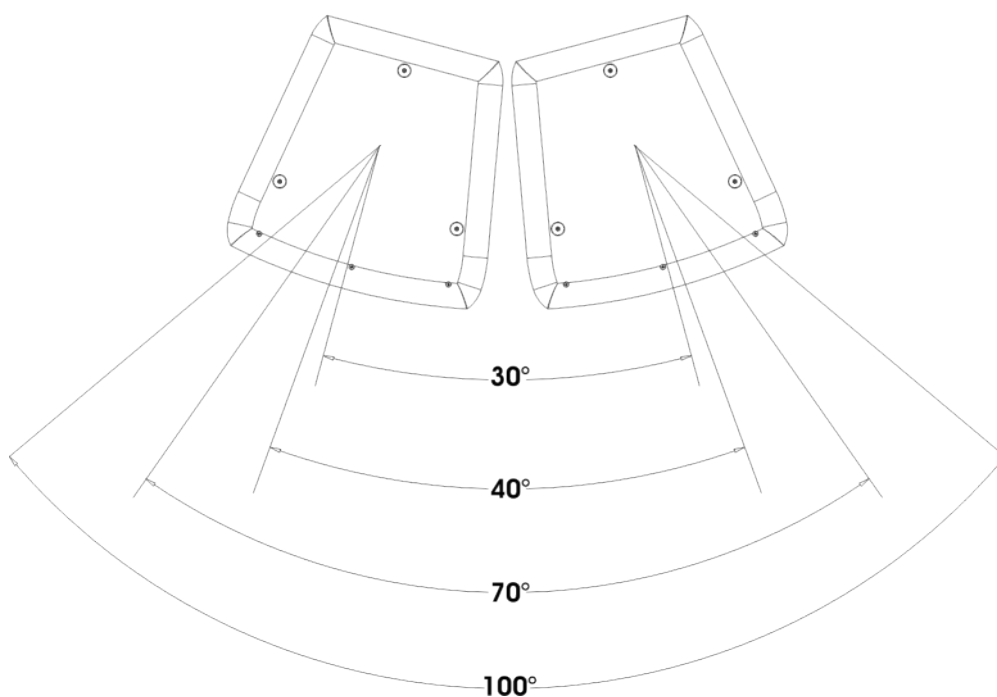
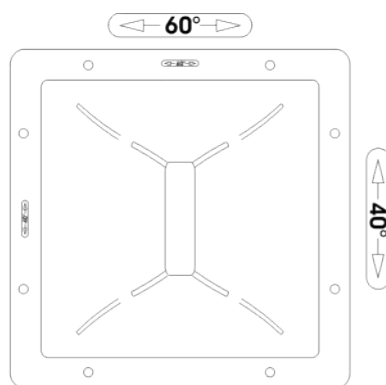
215

MITUS 152/152A and MITUS 215/215A models have an asymmetrical dispersion rotatable horn.

Several MITUS loudspeakers can be combined to create an array to increase the coverage area and maximum SPL.

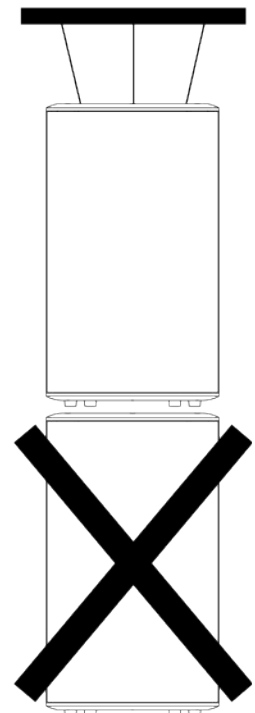
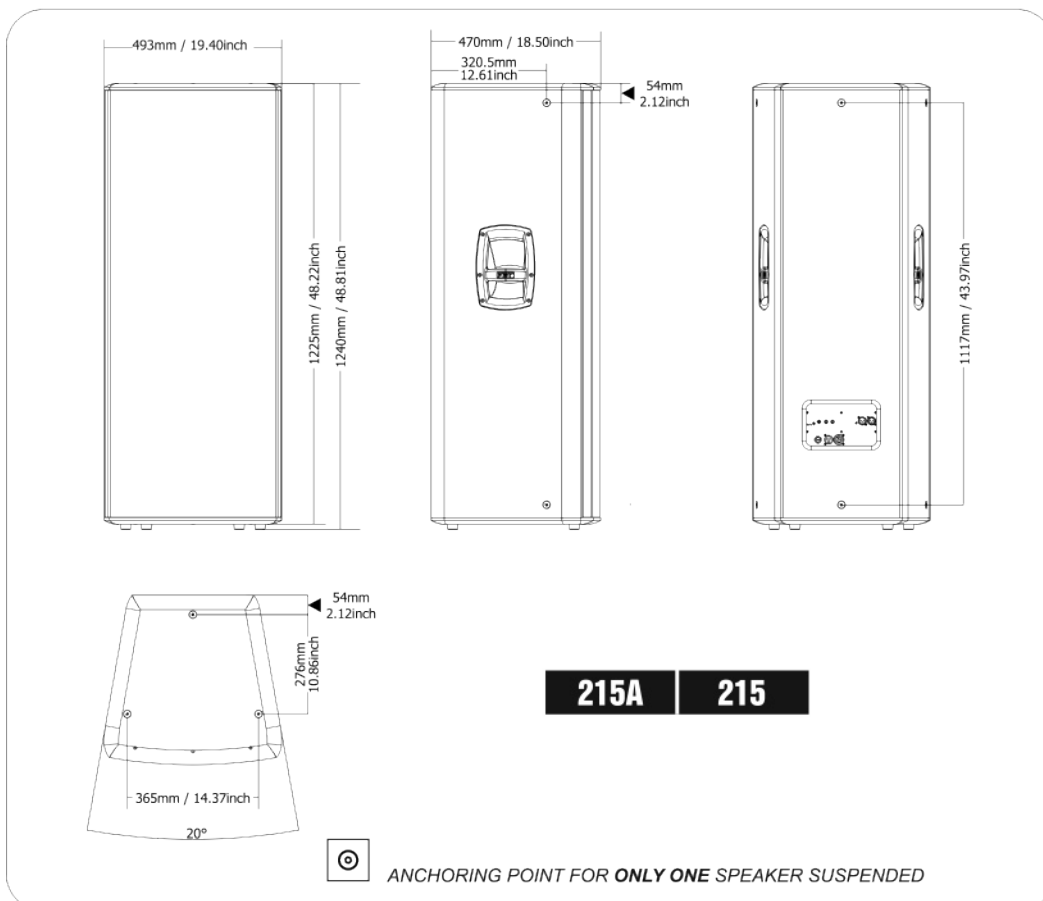
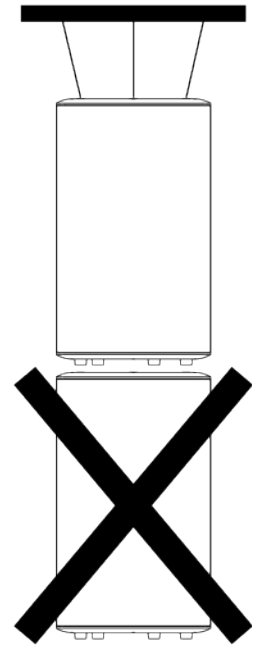
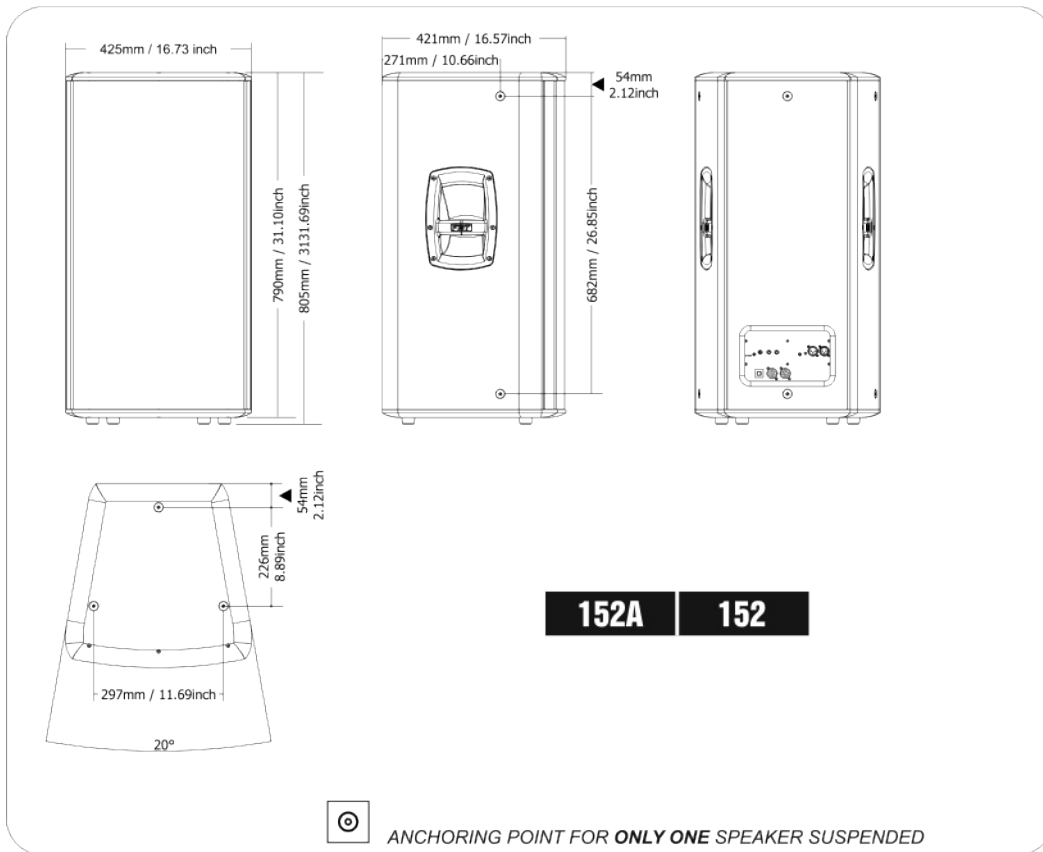
The figure shows several basic rules for positioning the loudspeakers to minimise interference between the horns of adjacent enclosures and to obtain a uniform response over the entire dispersion angle of the array.

It is important to align the subwoofer and satellites in the same vertical plane (with respect to the listening position): this precaution will eliminate undesirable phase rotations of the soundwaves at the intersection points, which can result in non-uniform frequency response.



30° ----- with 40° horn position
 40° ----- with 60° horn position
 70° ----- total coverage with 40° horn position
 100°----- total coverage with 60° horn position

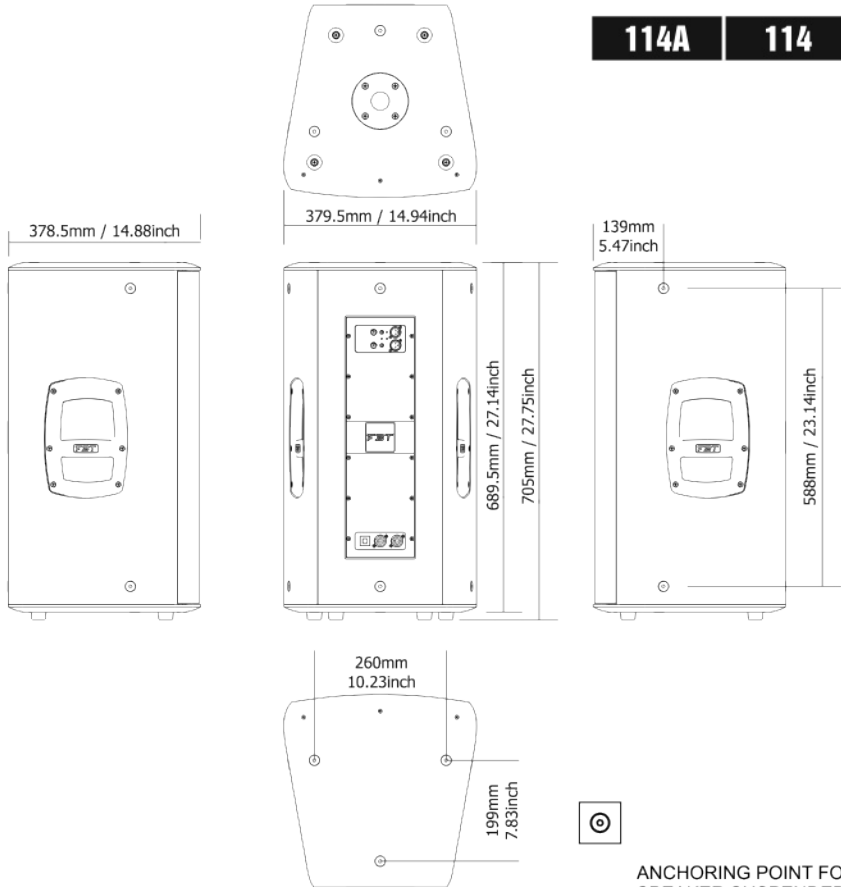
DIMENSIONS



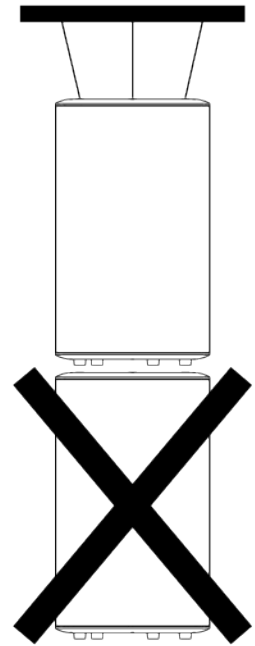
DIMENSIONS

114A

114



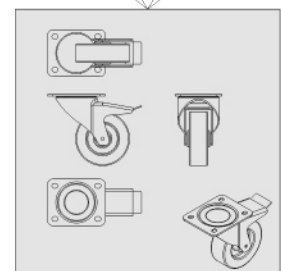
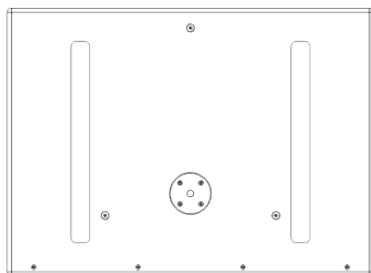
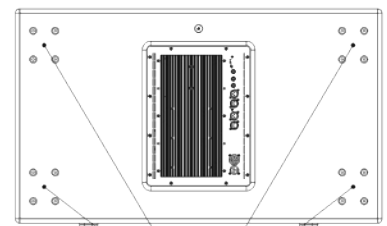
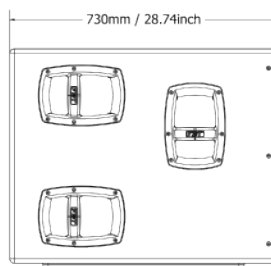
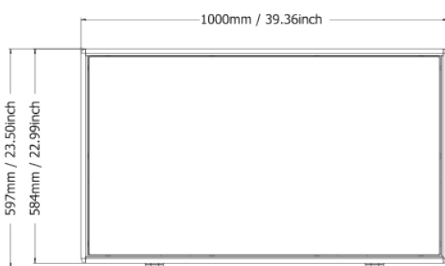
ANCHORING POINT FOR **ONLY ONE** SPEAKER SUSPENDED



218SA

218S

ONLY FOR GROUND STACK CONFIGURATION

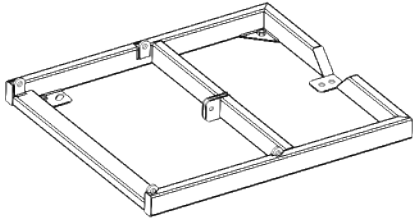


OPTIONAL WHEELS

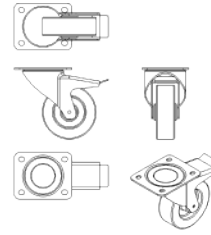


ANCHORAGE POINTS OF BASE METAL MT B206 SUPPORT FOR THE MITUS 206L/LA ON THE SUB

ACCESSORIES



MT B206
code 31888
*Metal base to ground
MITUS 206L/LA
on MITUS 218SA/S*



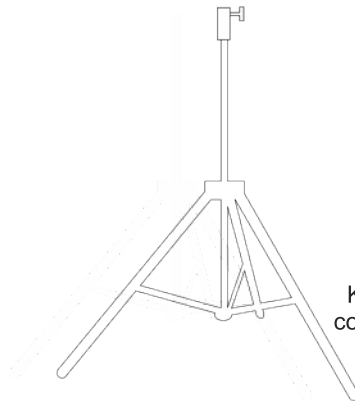
KBW-1004S
code 20835
Swivel wheel

KMS 300
code 32884



*Adjustable aluminum floor stand
damped safety mechanism
max. weight 154lb.*

KMS 325
code 32886



*Adjustable aluminum floor stand
Ø 1.38" with Ø 1" adapter
max. weight 88lb.*

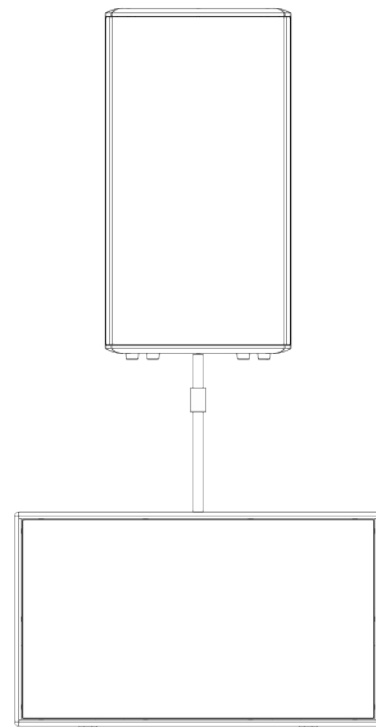
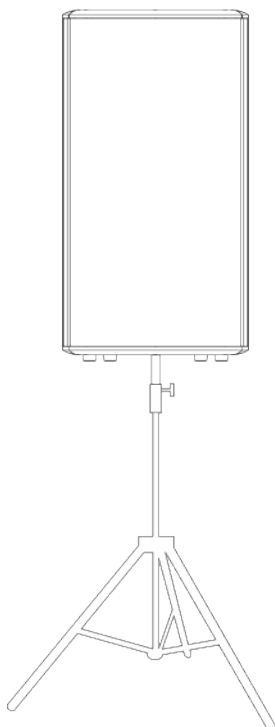
FMS 220
code 36723



*Adjustable for sub-satellite
speaker connection with
safety locking device Ø 1.38" M20*

INSTALLATION ON TRIPOD STAND

- > Make sure that the stand can bear speaker's weight.
- > Place the stand on a flat and antislip surface.
- > Widen stand base as much as possible to increase its stability.

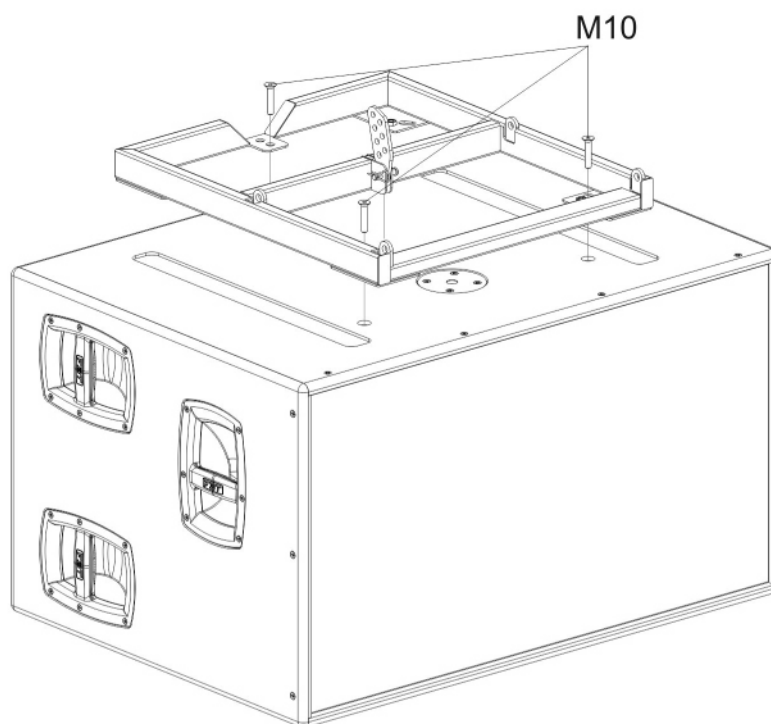


ACCESSORIES

HOW TO MOUNT SUBWOOFER - SATELLITE TO THE GROUND (218SA/218S - 206LA/L)

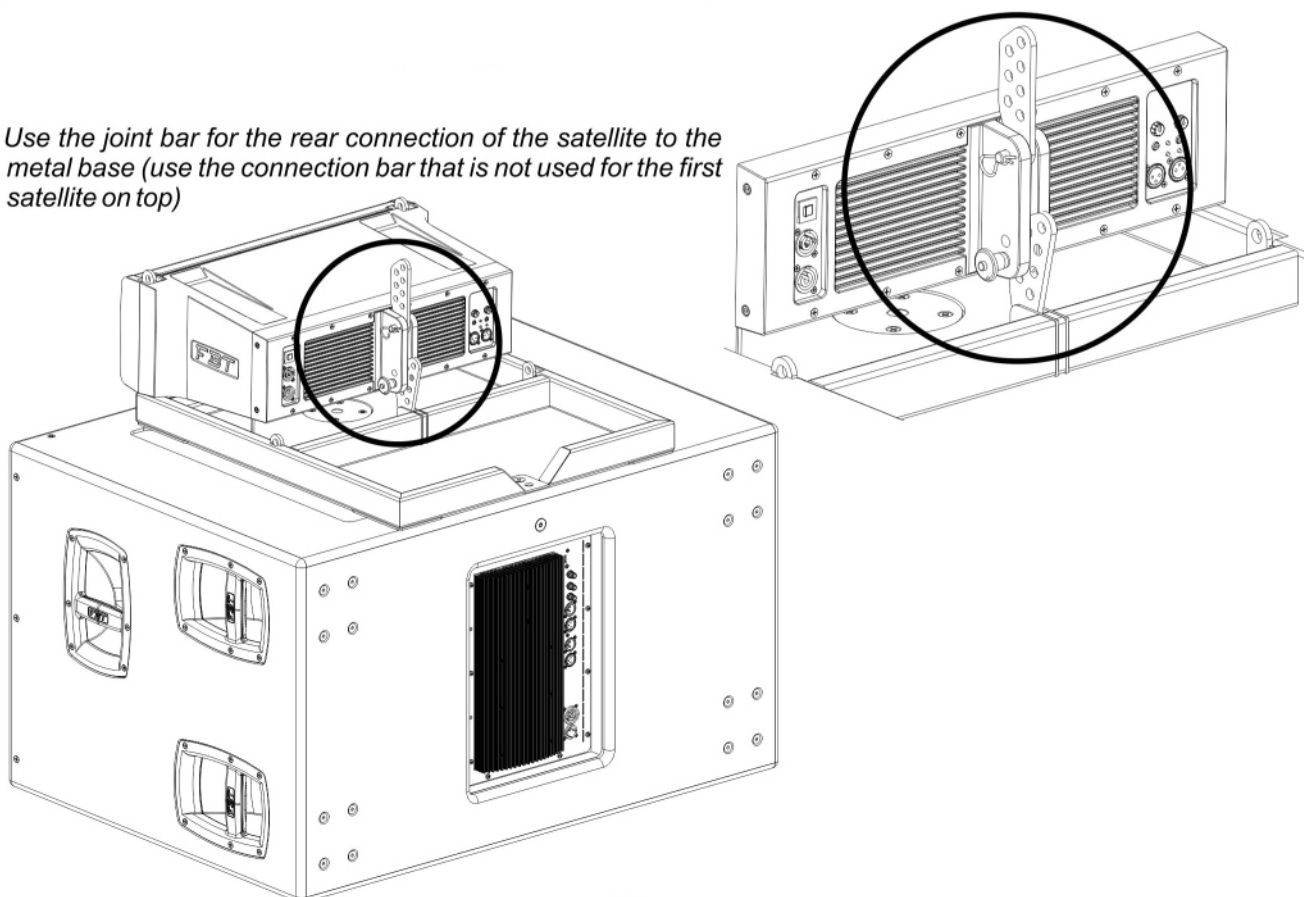
1

- Remove the three M10 screws from the top of the subwoofer.
- Place the MT B206 metal base on the box, as shown in the picture, and fix it with other three screws supplied with the accessories (do not use the screws formerly removed from the box).



2

- Use the joint bar for the rear connection of the satellite to the metal base (use the connection bar that is not used for the first satellite on top)



CARDIOID CONFIGURATIONS

The lack of directivity at low frequencies is a problem affecting many sound reinforcement systems; this directivity can be controlled by lining up an array of direct radiation subwoofers according to patterns that concentrate diffused energy in one or more directions.

As for all frequency ranges, the sum of the energy of two subwoofers can lead to both 6db sums and complete cancelling (when the sound waves are 180° out of phase). The typical lobes of the polar diagram are caused by the difference in the time of arrival of sound sources to a specific position.

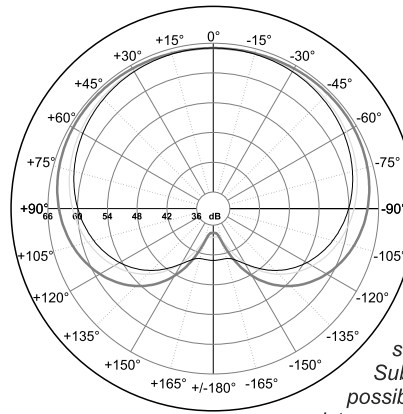
Cardioid configurations are useful to cancel low frequencies from the stage and consequently to improve critical microphone recordings.

The cardioid configuration enables a cardioid distribution of the SPL from Subwoofers, reducing rear sound pressure.

It is perfect when the energy of low frequencies has to be attenuated, for example on the stage or in areas where it should be avoided due to noise pollution.

As you can see from the diagram, the attenuation achieved behind the front sound emission is 15-20 db approximately for the whole subwoofer operating range (30-130Hz)

— Horiz. f=40Hz
 — Horiz. f=80Hz, normed to 1
 — Horiz. f=130Hz, normed to 1



For this purpose, a rear sub shall be employed every two front subs. The majority of the energy generated by the rear sub is used to cancel the energy of the other two front subs, so that the maximum overall SPL of the 3 subs in the front area is equal to +1db approximately compared to a typical (non cardioid) configuration with two front subs only.

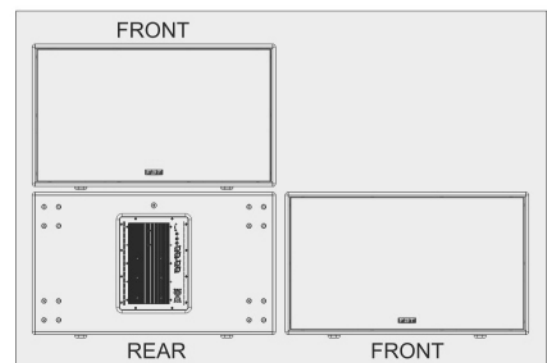
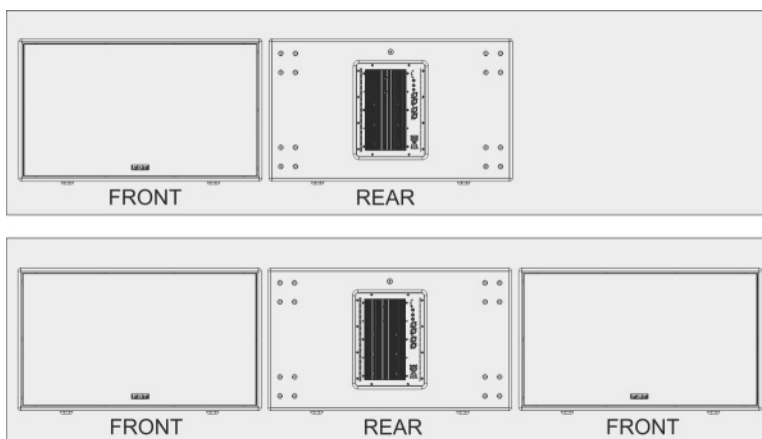
Obviously, this configuration is valid also with a FRONT sub and a REAR sub.

Subs position is very important in order to obtain the best possible rear attenuation. Use the configurations showed in picture.

Some presets of MITUS SUB range are specially dedicated to the cardioid configuration.

Set the CARDIOID FRONT preset in front SUBS, and in the SUB rotated by 180° (hence, the rear sub) set the CARDIOID REAR preset.

Two different equalizations are available for the cardioid configurations of 218SA sub: ORIGINAL and INFRA.

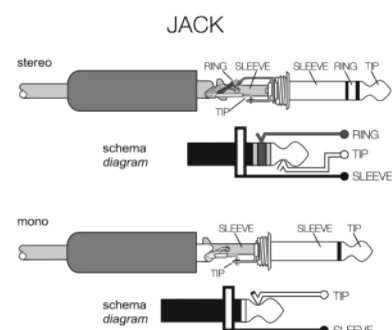
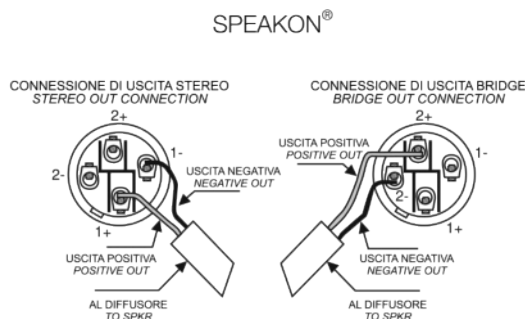
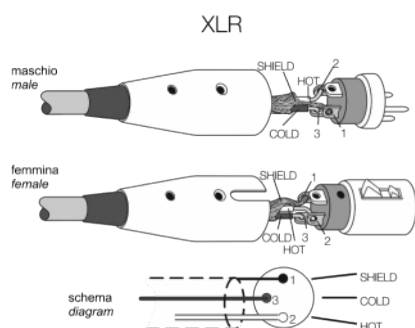


CONNECTORS

The 3-pole XLR connectors are almost always used for conducting mono-balanced signals; the three poles correspond respectively to ground (1), the positive signal (2) and the negative signal (3).

SPEAKON is a connector which is specially adapted for connecting power terminals to loudspeakers; when inserted in an appropriate socket it locks so as to prevent accidental disconnection; moreover, it is equipped with protection against electrical shocks and guarantees the correct polarisation.

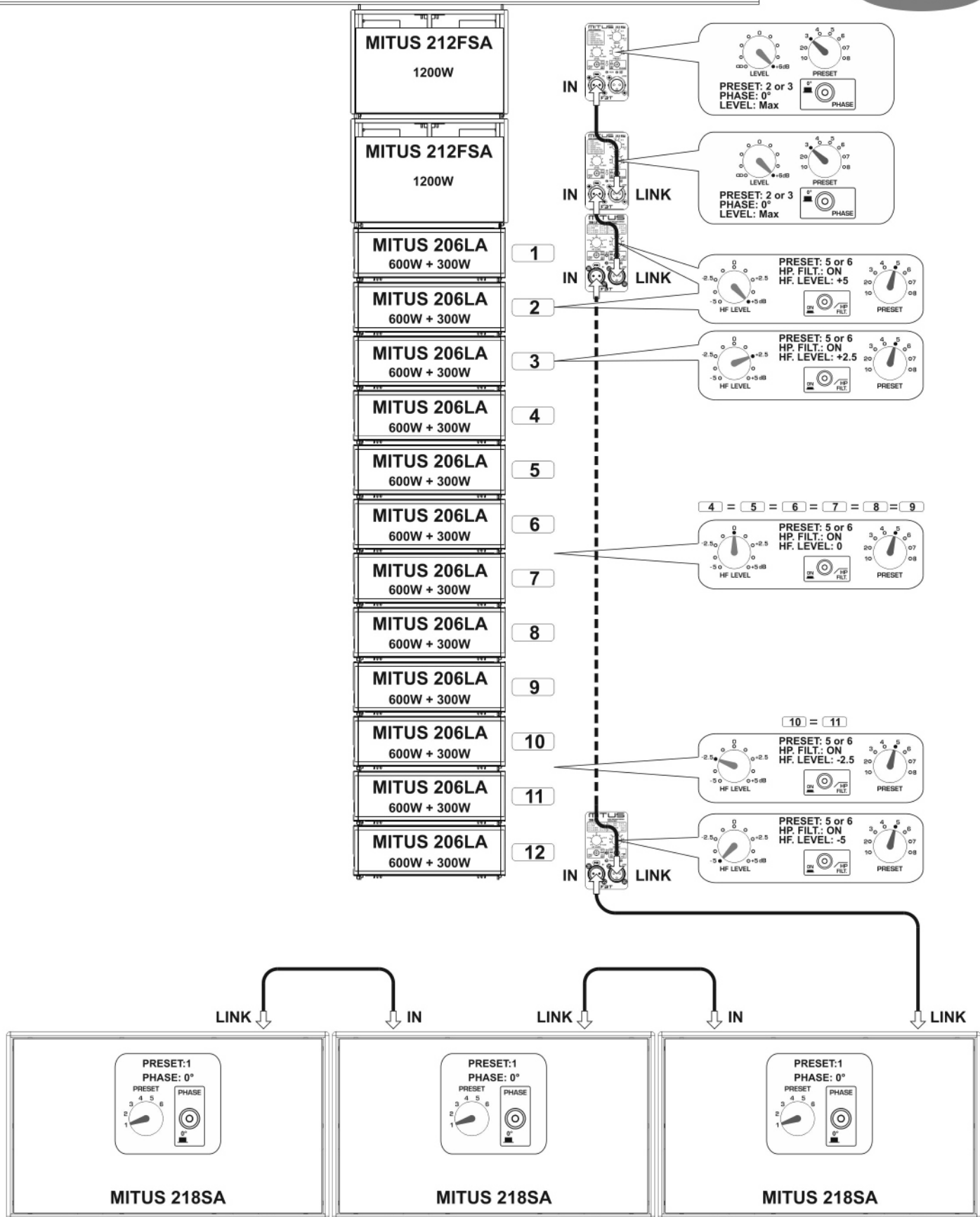
The JACKS are typical connectors for the transporting of two separate signals through two channels, left and right, using a single connector and therefore they can be either mono or stereo. Mono jacks (TS) also known as unbalanced jacks, are recognisable from stereo or balanced jacks (TRS) by their composition. The point of the mono jacks is divided into two parts, tip and ground (Tip and Slave) to which the two poles are connected; the stereo or balanced jacks are divided in three parts, as they have a central ring (Ring) which is connected to a second wire, the third (negative) pole.



**4 x MITUS 212FSA + 24 x MITUS 206LA
6 x MITUS 218SA**

OUTDOOR USE

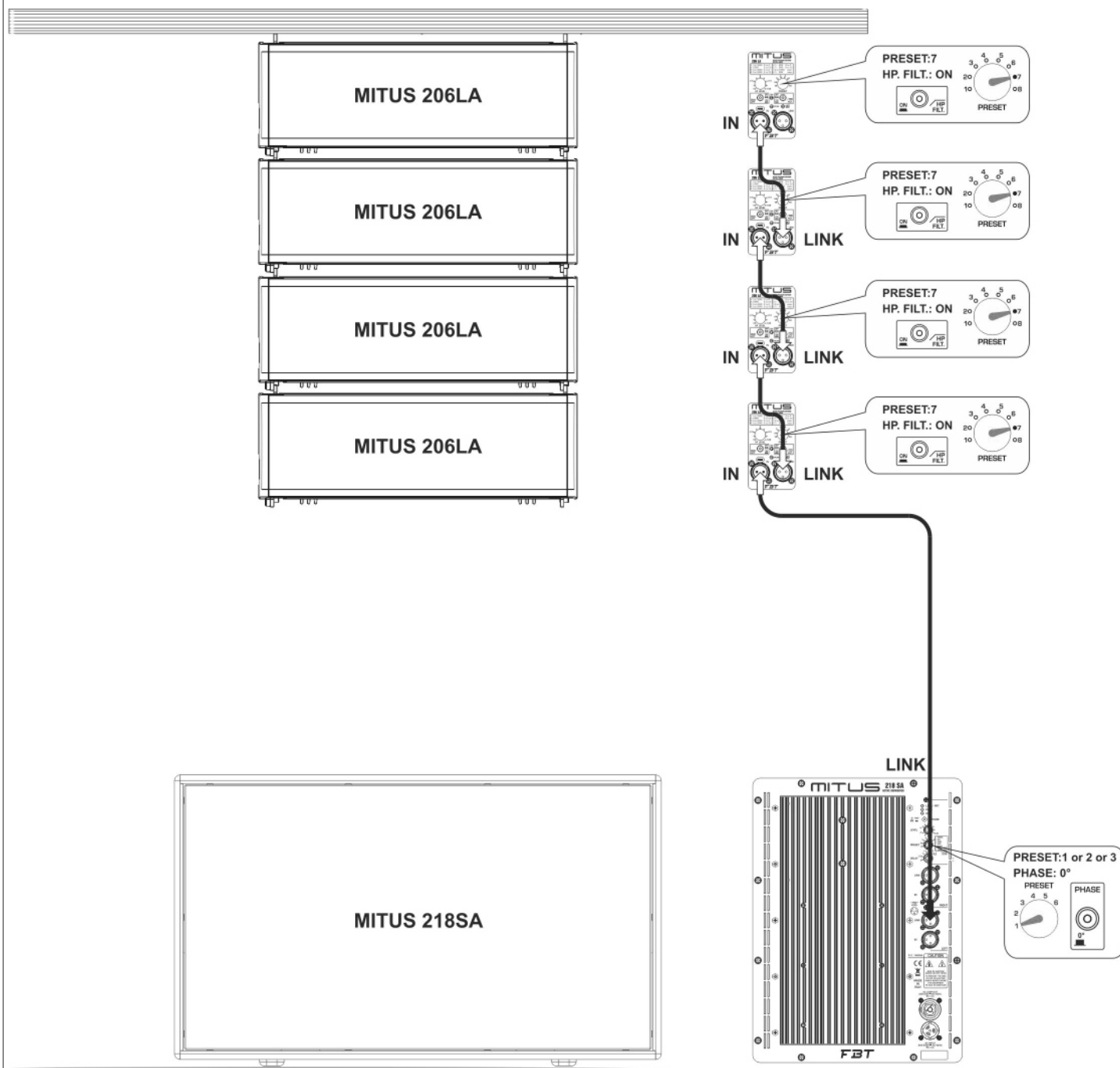
LEFT SIDE



8 x MITUS 206LA + 2 x MITUS 218SA

INDOOR USE

LEFT SIDE



TECHNICAL SPECIFICATIONS

MODEL		114A	152A	215A	218SA
Configuration	way	2	2	2	2
Built-in amplifiers cont. RMS LF/HF	W	400/200	700/200	700/200	800
Built-in amplifiers max. RMS LF/HF	W	600/300	1100/250	1100/250	2000
Built-in amplifiers max. peak LF/HF	W	1200/600	2200/500	2200/500	4000
Frequency response	@-6dB	46Hz-20kHz	45Hz-20kHz	42Hz-20kHz	30Hz-100Hz
Low frequency woofer	inch	1x14 coil 3	1x15 coil 3	2x15 coil 3	2x18 coil 4
High frequency driver	inch	1x1.4 coil 2.5	1x2 coil 2.5	1x2 coil 2.5	-----
Max SPL cont/peak	dB	127.5/135.5	129/136	133/136	139/145 half space
Dispersion	H x V	70°x50°	60°x40°	60°x40°	omnidirectional
Input impedance	kOhm	22	22	22	22
Crossover frequency	kHz	1.4	1.2	1.2	preset dependant
AC power requirement	VA	640	800	800	1500
Input connectors		XLR with loop	XLR with loop	XLR with loop	XLR with loop
Power cord	ft	5	16.4	16.4	16.4
Net dimensions (WxHxD)	inch	15x27.7x15	16.7x31.7x16.6	19.04x49x18.5	39.4x23.4x28.7
Net weight	lb.	54.8	80.46	115.74	198.41
Transport dimensions (WxHxD)	inch	18.1x30.3x17.9	21.6x36x22	24.3x53.3x24	45.2x29x35.4
Transport weight	lb.	59.3	127.86	127.86	224.87

MODEL		114	152	215	218S
Configuration	way	2	2	2	2
Recommended amplifier	W rms	700	800	1600	4000
Long term power *	W	350	400	800	2000
Short term power (IEC 268-5)	W	1400	1400	2800	8000
Frequency response	@-6dB	50Hz-18kHz	47Hz-20kHz	47Hz-20kHz	30Hz-250Hz
Low frequency woofer	inch	1x14 coil 3	1x15 coil 3	2x15 coil 3	2x18 coil 4
High frequency driver	inch	1x1.4 coil 2.5	1x2 coil 2.5	1x2 coil 2.5	-----
Sensitivity (@1W, 1m)	dB	100	100	103	102
Max SPL cont/peak	dB	128/132	128/132	134/138	141/147 half space
Dispersion	H x V	70°x50°	60°x40°	60°x40°	omnidirectional
Nominal impedance	Ohm	8	8 (8LF/8HF)	4 (4LF/8HF)	4
Crossover frequency	kHz	1.4	1.2	1.2	external active
Recommended HP filter		40Hz-24dB oct.	40Hz-24dB oct.	40Hz-24dB oct.	25Hz-24dB oct.
Recommended ext. filter		-----	-----	-----	digital management with FBT preset
Input connectors		2xSpeakon NL4 in & throu	2xSpeakon NL4 in & throu	2xSpeakon NL4 in & throu	2xSpeakon NL4 in & out
Net dimensions (WxHxD)	inch	15x27.7x15	16.7x31.7x16.6	19.04x49x18.5	39.4x23.4x28.7
Net weight	lb.	50.4	70.54	105.82	191.8
Transport dimensions (WxHxD)	inch	18.1x30.3x17.9	21.6x36x22	24.3x53.3x24	45.2x29x35.4
Transport weight	lb.	54.8	78.26	117.94	218.25

* All speakers are tested with a 6dB crest factor, where the ratio between the average voltage and the pulse voltage supplied to the system exceeds or equals 2; FBT recommends using an amplifier with an RMS power that doubles the long term power so as to wholly preserve the dynamics of the speakers and guarantee the integrity of the music signal.

CAUTION: This does not guarantee the speakers preservation in any condition of use. In the presence of a highly compressed music program or if the amplifier is driven into clipping, the speakers may suffer damage due to overtemperature or excessive excursion. For music programs with low dynamics and high distortion it is recommended to use an amplifier with a RMS power that is equal or below the power specified in the table so as not to exceed the heat dissipation capacity of the speakers. In any case driving the amplifier into clipping causes a great increase of the power supplied to the driver which in turn could suffer damage in spite of the intervention of the cx-over protection.



WARNING: where affixed on the equipment or package, the barred waste bin sign indicates that the product must be separated from other waste at the end of its working life for disposal. At the end of use, the user must deliver the product to a suitable recycling centre or return it to the dealer when purchasing a new product. Adequate disposal of the decommissioned equipment for recycling, treatment and environmentally compatible disposal contributes in preventing potentially negative effects on the environment and health and promotes the reuse and/or recycling of equipment materials. Abusive product disposal by the user is punishable by law with administrative sanctions.

CODE 37504 # Maggio 2013

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