

OWNER'S MANUAL

S250-X - S500-X AMPLIFIER MODULE & ATOHM SUBWOOFERS



Congratulations on your purchase of an Atohm product.

A great deal of effort has gone into designing and manufacturing this product to the highest possible standards to suit your requirements, whether it be for your stereo, multichannel, hi-fi or home theater system. Our products are renowned for their exceptional performance and unrivaled reliability. We are sure that they will provide you with complete satisfaction for many years to come.



PRECAUTIONS, WARNINGS:

Explanation of Graphical Symbols:



The lightning flash with arrowhead symbol, within the equilateral triangle, is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

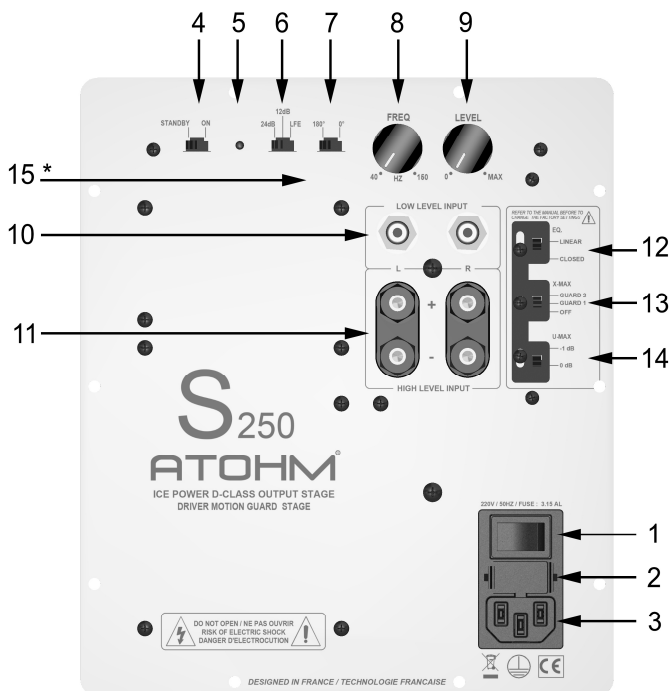
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Before installing your subwoofer, this user manual must be read thoroughly. If you have any doubts about how to connect the equipment, ask for advice from your dealer.

- Do not expose this product to rain or humidity and do not insert foreign bodies inside the device.
- Do not use the subwoofer close to a source of extreme heat (radiator, etc.).
- If the power cable does not perfectly fit in your mains socket, consult an electrician and replace the socket. The power cable must never be walked or pinched. The mains socket must stay accessible at all time.
- Do not overload the mains sockets, multi-sockets or extension cables to avoid electrical shocks.
- Switch the subwoofer off when not in use (1). In case of lightning storm or long absence, disconnect from the mains (3).
- Only connect the device with the mains type indicated on the device's silkscreen or specific label. If you have any doubt, consult your electricity supplier or device dealer.
- Ventilation: Ensure that the front panel of the amplifier remains « unobstructed ». Do not cover the subwoofer or install it inside a closed cabinet.
- Never dismantle the amplifier module control panel to avoid the risk of electrocution. Your dealer and/or a qualified technician must be contacted for any and all servicing requirements.
- Fuse: In the event of a complete failure to function, first disconnect the power cable from the mains, and then check the mains fuse. When replacing the fuse, only use a fuse which is absolutely identical to the original one. If this does not solve the problem, please contact your dealer for assistance.
- Never allow an output wire to come into contact with the earth ground (the amplifier chassis).
- Never handle the (6), (7), (12), (13), and (14) switches when the "Standby/On" switch (4) is ON. Always turn off the unit on STANDBY prior to handle these switches
- Never change the factory settings which are locked by a screw (see control panel section).
- Cleaning and maintenance: Your subwoofer enclosure is made out of MDF (medium density fiberboard) with a natural veneer wood finish. No special maintenance is required. For cleaning purposes always use a soft cloth, which may be slightly moistened if necessary (we recommend the use of soft "micro-fiber" cloths). WARNING: Never apply solvents, detergents or any other alcohol based products.
- Do not use accessories other than the such supplied with the device or explicitly recommended by the manufacturer.
- Transport: When using a trolley, be careful moving the device to avoid injuries or damage due to tipping.
- Keep all wrappings out of the reach of children (Suffocation hazard).

In the case of failure to observe the precautions for use, the manufacturer's warranty will be immediately canceled.

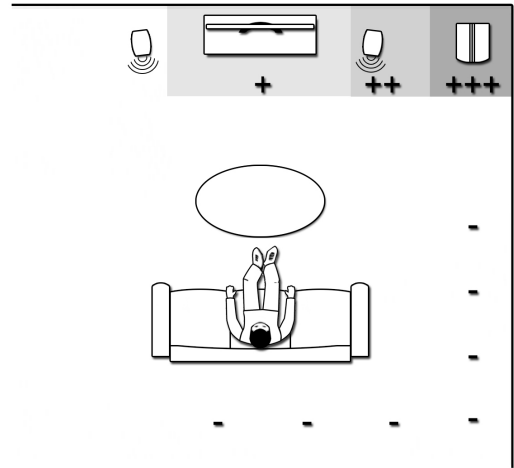
CONTROL PANEL:



- 1 – Power On/Off switch
- 2 – Fuse
- 3 – Mains socket (cable supplied)
- 4 – STANDBY / ON switch
- 5 – « Standby » LED indicating mains connection, or security if blinking
- 6 – Filter slope selector: 24dB/Oct; 12 dB/Oct; LFE
- 7 – Phase switch: 0-180°
- 8 – High cut-off frequency adjustment knob: (40 to 150 Hz, not linear).
- 9 – Sound level adjustment knob (volume).
- 10 – Low level inputs (left and right)
- 11 – High level inputs (left and right)
- 12 – Factory setting EQ, do not modify
- 13 – Factory setting X-MAX, do not modify
- 14 – Factory setting U-MAX, do not modify
- 15 – Direct mode switch (*internal), do not modify.

SUBWOOFER PLACEMENT :

As a general rule we advise you to place your subwoofer at the front of the room, in line with the main speakers. Getting closer to a wall, and even more to a corner, will naturally amplify the sound of the subwoofer. Therefore, the position labeled "3+" on the drawing will bring the highest sound pressure level and efficiency. In doing so, you will also stimulate the natural reverberations of the room. The position labeled "2+" is a good compromise between efficiency (sound pressure level) and homogeneity (coupling with main speakers). The position labeled "1+" favor homogeneity (coupling with main speakers, reduction of subwoofer's location) and slightly reduces room reverberations (but also perceived efficiency). According to your integration constraints, placing the subwoofer on the sides or behind your listening position (labeled "-" on the drawing) is not strictly excluded. However, this type of positioning induces an inconsistency that makes the subwoofer's location easier to detect while listening (your ears identify the subwoofer's position more easily, which leads to a less consistent sound stage). If you have the possibility to experiment with various positions, do so and take on the one that, in your listening conditions and due to your criteria, provides the best result while listening.

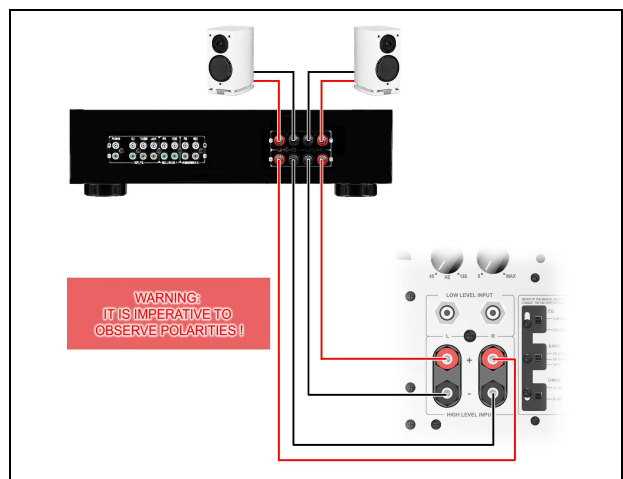
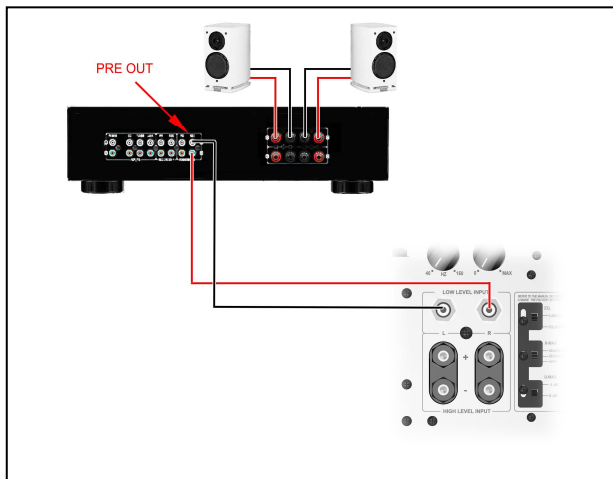


A wall, and/or a corner, will naturally amplify the sound of your subwoofer, sparing work to the amplifier (compared to subwoofer in the center of the room with a fixed sound level: you gain +6dB against a wall, +12dB in a corner, knowing that doubling the amplifier's power only results in a gain of +3dB of sound level).

STEREO CONFIGURATION

If your integrated amplifier (or preamplifier) has a « pre-out » low level output, connect the low level inputs of the module to the outputs (Left and Right). If your amplifier does not have « pre-out » outputs, then connect the speaker outputs of the device to the « High Level » inputs of the subwoofer amplifier module (this connection is parallel to the speakers).

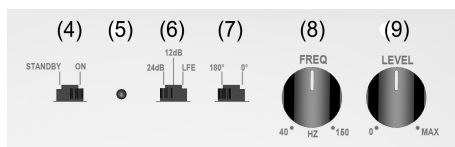
It is imperative to observe polarities (risks of damage to both devices)!! WARNING: Never connect High Level and Low Level Inputs at the same time.



Associated settings

Warning: switches (6) and (7) must only be handled when the Standby/On switch (4) is on STANDBY.

Adjust the Freq switch (8) according to your main speakers' size (between 9 and 12 o'clock for floor-standers and between 12 and 3 o'clock for bookshelf models). Please note that this setting is not linear.



Adjust the filter's slope (6) according to your main speaker type: 12dB for sealed enclosure and 24dB for bass reflex enclosure.

If the EQ switch (12) is set on "linear" position, the phase switch (7) must be set on 180° for a 12dB slope, or 0° for a 24dB slope. If the EQ switch (12) is set on "closed" position, then the phase switch (7) must be set on 0° for a 12dB slope, or 180° for a 24dB slope.

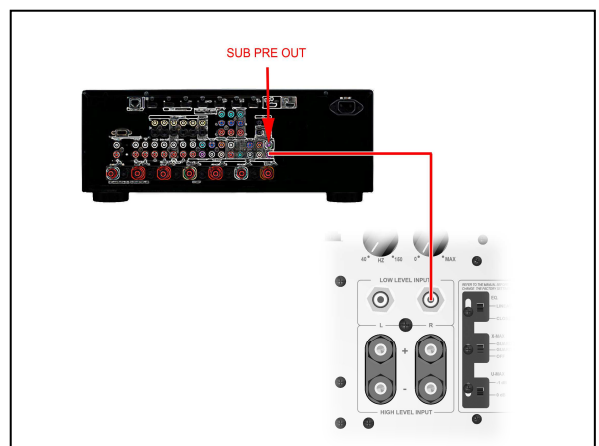
Adjust the volume (9) as desired.

HOME CINEMA CONFIGURATION

Connect the "SUB PRE-OUT" output of the integrated amplifier or audio-video processor/preamplifier to one of the "Low Level" inputs of the subwoofer's amplifier module.

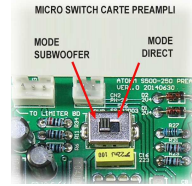
If you want to set the high cut-off frequency of the subwoofer using your audio-video processor, it should be done by setting the slope selector (6) on "LFE" position. The cut-off frequency adjustment (8) is then disabled so that it can be set in the "setup" menu of your audio-video device.

However, if you want to adjust the cut-off frequency using the subwoofer's amplifier module, you should set the cut-off frequency to its maximum value on your audio-video device. Then follow the "associated settings" indications of the previous chapter: stereo configuration.



MONO POWER CONFIGURATION (warning, unsuitable for subwoofer use)

For mono power use, we have equipped our amp modules with an internal switch (15) that can bypass all filtering and protection stages. Note that the connected speakers won't be protected against a potential overpower anymore (risks of mechanical/thermal breakdown, see exclusions of warranty). Set the volume (9) with great care. The settings (6), (7), (8), (12), (13), and (14) are disabled when using this configuration. Only the volume knob (9) remains active. This configuration is appropriate for specific uses of our modules only, such as broadband use or in the manufacture of powered monitors.

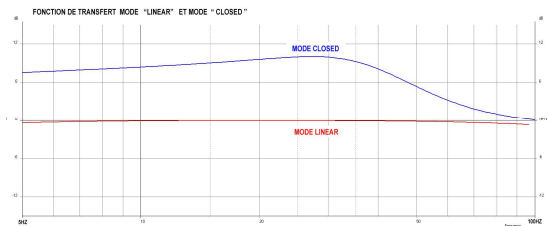


FACTORY SETTINGS:

Reminder : The "factory settings" switches (12), (13), (14) have positions that are specific to each individual subwoofer model and must never be modified by user (risk of damaging the loudspeaker, resulting in immediate cancellation of warranty).

EQ (12)

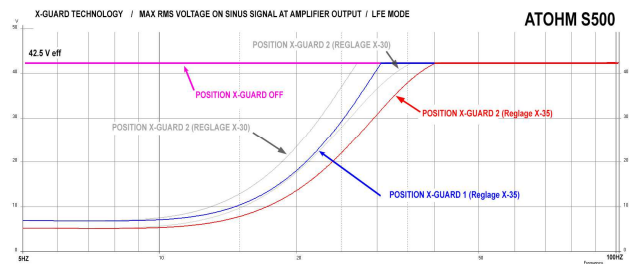
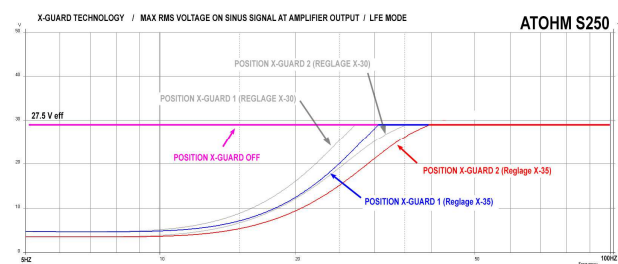
Linear Mode: Designed for vented box (ex : Rafale V38 "S", Rafale VR series)
 Closed Mode: Designed for sealed box (ex : Furtive Sub, Eurus SWB-X)



X-MAX (13)

X-GUARD 2 Position: Maximum protection
 X-GUARD 1 Position: Intermediate protection (s250 module, or specific uses of s500 module)
 OFF : No mechanical protection
WARNING: For specific uses only, do not employ this setting for any factory model or Atohm subwoofer kit (may result in loudspeaker mechanical breakdown, see exclusions of warranty).

Max Rms Voltage curves at amplifier output with « X35 » setup (« X30 » setup is shifting by 5hz all the curves to low frequencies)



U-MAX (14)

0dB Position: Nominal voltage limit (maximum voltage: 27.5Vrms/s250 and 42.5Vrms/s500)
 -1dB Position: -1dB voltage limit (maximum voltage: 24.5Vrms/s250 and 37.8Vrms/s500)
 -1dB mode may be used as an additional protection of the X-GUARD 2 protection for loudspeakers that cannot handle high power.

REVISION S250 VERSION X - NOV 2019

The X-GUARD PCB is including 2 setup : X-35 (exactly the same adjustment than X GUARD version 1) and X-30 (lowering by 5 Hz of the X-GUARD adjustment) . Amplifier module comes with X-30 setting when it is sold as stand alone unit.

XG-35 SETUP = RAFALE V38S – V35 -FURTIVE SUB
 XG-30 SETUP = RAFALE VR1-X , SL1-X et EURUS SWB-X

REVISION S500 VERSION X - NOV 2020

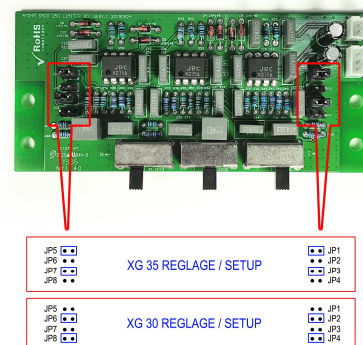
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X-35 SETUP = KIT RAFALE VR2 / VR3
 X-30 SETUP = KIT RAFALE VR2-X / VR3-X

S500 X with « SL3M-X » pcb (this version is not sold as stand alone unit)

X-35 SETUP : GT-SW2 / EURUS SW / RAFALE SL3M
 X-30 SETUP : GT-SW2-HD / EURUS SW-X / RAFALE SL3M-X

S500 - S250 CARTE / X GUARD PCB 2019



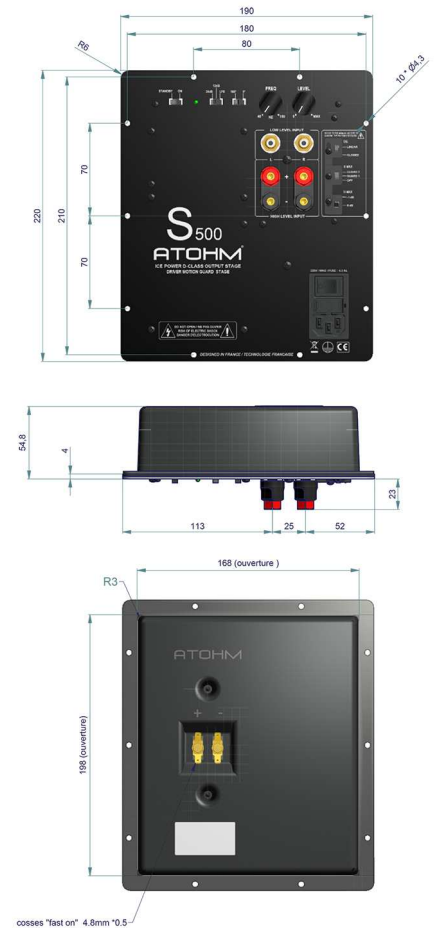
Wiring from the amplifier plate to driver unit(s) :

Use the specific woofer cables that are provided with the amplifier module.
 (Length 85cm with dual output on woofer side / with 2.8mm (-) and 4.8mm(+) female terminals) . If necessary, non-used outputs wires can be cut and insulated / if necessary, output female terminals can be deleted and stripped wires can be welded on driver unit terminals

Attention, the 4 output male fast-on terminals (4.8mm) of our amplifier module are not designed for wire soldering (wires with female fast on terminal must be used on this side) .

TECHNICAL SPECIFICATIONS AND DIMENSIONS

Model :	S250-X	S500-X
Sine RMS power /4ohms/20Hz to 20kHz (cold start/ 80s duration/ direct mode)	220 Watts	500 Watts
Nominal load impedance	4-16 ohms	4-16 ohms
Minimal load impedance	3 ohms	3 ohms
Frequency response (direct mode)	20Hz-20kHz (+/- 0.2dB) 1.5Hz-75kHz (+/- 3dB)	20Hz-20kHz (+/- 0.3dB) 1.5Hz-90kHz (+/- 3dB)
Signal-to-Noise Ratio (direct mode)	115dB (A-weighted)	111dB (A-weighted)
Signal-to-Noise Ratio (subwoofer use)	96dB (A-weighted)	96dB (A-weighted)
Damping factor (8 ohms, 100Hz)	Higher than 1000	Higher than 1000
Total Harmonic Distortion (1kHz/1W/8ohms)	Less than 0.1%	Less than 0.1%
Adjustable Low-Pass filter	38 to 200Hz 24dB/oct or 12dB/oct (« LFE » disengagable)	38 to 200Hz 24dB/oct or 12dB/oct (« LFE » disengagable)
Phase switch :	0 - 180°	0 - 180°
Supply voltage : selectable by internal jumper (factory setting)	115V/230V / 50 Hz	115V/230V / 50 Hz
Consumption :	320W maxi	700W maxi
Weight	0.90 kg	1.2kg



Our concern for performance is leading us to constantly improve our products. The present features are subject to modification without any notice.

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 Manufactured and distributed by WELCOHM TECHNOLOGY 12 rue du Breuil, 70150 PIN (France)
 Tel : +33 3 81 47 91 01 WWW.ATOHM.COM

This subwoofer / amplifier module is in compliance with the RoHS Directive 2002/95/CE on the restriction of use of hazardous substances in consumer electronics.



It also complies with the WEEE Directive 2002/96/CE on electrical and electronic waste disposal. Please note that this product must not be disposed of along with ordinary household garbage. When it reaches the end of its life cycle it should be returned to an appropriate recycling facility.

By conforming to the above directives, you are contributing towards environmental conservation and protection of natural resources and health.



The subwoofer/amplifier module you have just acquired is covered by a 1 year warranty against defects in material and workmanship, starting from the date of purchase. However, if you return this warranty form duly filled out and accompanied by proof of purchase with your dealer's stamp, we will extend this warranty to two years.

Not included in the warranty:

- Damage due to inappropriate use (bottoming out, / tearing / warping / exposure to water, etc.)
- Damage due to over powering (burnt voice coil)
- Damage due to extended output short-circuit or use under a load impedance below 3ohms
- Damage due to mains power supply problems (power surge, lightning, etc.)
- Damage due to poor installation (bad connections, faulty contacts, etc.)
- Any component or driver which has been serviced or modified in any way by a third party.

Last Name:

First Name:

Postal address:

E-mail address (imperative):

Purchase Date:

Dealer's name and commercial stamp:

Product Reference:

Serial N°: