



ELECTRET TRANSDUCERS

INSTALLATION MANUAL

B-BAND A6T SIDEMOUNT PREAMP WITH B-BAND UST AND AST TRANSDUCER

This is a basic installation manual and tip sheet. For more information, technical support, and pictures of installations about all B-Band products please check the B-Band website at www.b-band.com or contact your B-Band dealer, distributor or B-Band directly.

DEAR CUSTOMER,

Thank you very much for purchasing this state-of-the-art B-Band® acoustic transducer system. B-Band takes care to provide the highest quality product and is manufactured and supported in true spirit of acoustic instrument aficionados.

The outstanding sound reproduction of B-Band transducers is based on the technology of a very special, worldwide-patented material that is exclusive to B-Band. This material is very different from, and has nothing to do with, piezo-electric films or transducers.

How is it different? We could write a long story here about the technical characteristics of the material, like how the “microscopic lens-like gas bubbles”™ work inside the permanently charged film, but the most important difference is the sound. Whereas piezo pickups tend to impart a sound of their own (often described as “quacky” or “plastic”), B-Band transducers act in much the same way a condenser microphone does. B-Band systems will provide an excellent reproduction of your instrument’s unique sound.

All of us at B-Band truly hope you enjoy this product.

Please contact us if you have any comments about B-Band products.

Always ready to help you.

Yours sincerely,
Heikki Räisänen, CEO
B-Band Ltd



1. SAFETY AND PRODUCT CAUTIONS

Although B-Band products could be easy to install by following these instructions carefully and checking the B-Band website and references, we highly recommend the installation be

done by a professional qualified guitar craftsman or technician. Some installations require a high knowledge about woodwork-ing and guitar structure.

B-BAND LTD, B-BAND, INC. AND B-BAND GMBH WILL NOT BE RESPONSIBLE FOR ANY DAMAGES, PERSONAL INJURIES OR LIABILITIES RESULTING FROM INSTALLATIONS, IMPROPERLY DONE INSTALLATIONS OR MISUSE OF PRODUCT.

Read all of these instructions closely before starting installation.

B-Band pickups (UST and AST) work with all B-Band A-series preamps.

After installation the UST pickup can have very high output, enough to overdrive the B-Band preamp input, causing distortion. The UST will lower in output, under pressure of the saddle, in 1 to 3 days.

Do not cut, pull, crimp or bend at a sharp angle any B-Band transducers.

B-Band UST and AST CANNOT be shortened or altered in any way. This will cause audible hum and void the warranty.

Long-time exposure of UST or AST to high temperatures (over 50 °C / 120 °F) may reduce the output level permanently.

B-Band pickups will only work with B-Band preamps. B-Band preamps will work with most any external audio preamps, mixers, and instrument amplifiers.

Before installation make sure instrument is in good working condition.

Do not mount battery holder to preamp.

Even with the battery secure in the holder or the battery box lid closed, the battery could get loose when transported. We

strongly recommend removing the battery before transporting the instrument in heavy conditions, for example, with freight companies or airlines, to avoid possible damage to the instrument.

When doing any drilling, sawing, cutting or routing at the guitar, be sure to secure the guitar so it will not move when doing such work.

2. OVERVIEW OF B-BAND UST AND AST TRANSDUCERS

Both the B-Band UST (Under-Saddle Transducer) and AST (Acoustic Soundboard Transducer) pickups use the same-patented transducer technology.

They are very flexible, but you should never pull or bend them at a sharp angle.

B-Band pickups themselves do not require electrical power, as they are permanently charged electrets. Because of the very high output impedance (typical for condenser microphones) B-Band UST and AST always require a B-Band preamp.

Standard piezo preamps will not work properly with B-Band pickups. They will produce low output and poor bass response.

The active portion of the B-Band UST pickup is 80 mm (3.15") from the end of the transducer at the opposite side of the connector. The active portion of the 1470 AST is the 14 x 70 mm (.55" x 2.75") area that attaches to the guitar. The rest of the UST and the "lead" wire of the AST are not active. However, for best performance always keep the inactive portion of either UST or AST pickup from touching each other, or touching or rubbing on the inside of the guitar, or touching the battery or output jack wires. These can produce unwanted handling noise.

UST and Model sizes

Saddle width: 2.3 – 2.9 mm (.090" – .115" (3/32"))

B-Band model #: 22R

UST width: 2.3 mm (.090" (3/32"))

Saddle width: 3.0 mm (.118" (1/8")) or more

B-Band model #: 29R

UST width: 3.0 mm (.118" (1/8"))

3. OVERVIEW OF A6T PREAMP

All B-Band A-series preamps are designed to give optimum performance with B-Band UST and AST transducers. The main criterion in designing these preamps was to deliver studio quality and user-friendly electronics to the diverse needs of acoustic instrument musicians.

The A6T preamp has the XOM mix control that controls the blend of the UST and UST / AST XOM mix.

XOM® (Cross Over Mix)

In our continuing search for realistic acoustic tone the B-Band research and development team has applied a crossover system to our exclusive patented pickup material. The crossover mix (XOM) system combines the best aspects of each pickup into one complete source.

By sensing the guitar from two separate locations and combining, what each pickup does best, the XOM system has a very complex and rich sound that further augments already superior sounding Emfit film pickups.

The ideal process for authentic acoustic reproduction comes from combining the high frequencies of the AST and low frequencies of the UST, making a sound that is much more complete, true and pure. In addition, the XOM pan pot allows the player to select between UST / AST XOM mix crossed over at 800 Hz or the full range UST, or one of the many points in-between resulting in almost unlimited possibilities.

At the UST side of the mix control only the UST is heard. At the AST side of the mix control, a crossover mix of the UST low frequencies and AST high frequencies is heard.

To learn more about the XOM feature, check the XOM User Guide later in these instructions.

The A6T has a dedicated input gain control located at the back-side of the preamp. The control is accessed through a small hole with a screwdriver. This control is used to set the basic balance of the UST and AST so the pickups can have equal output signal strength.

The A6T has the HzzLess® circuit for outstanding low noise and high output.

The A6T is a side mount preamp with a 3-band "graphic" equalizer, XOM mix control, chromatic tuner, Notch Frequency and Depth controls, phase button and low battery LED light. This dual XOM input preamp will accept UST and AST.

The A6T uses a standard 6.3 mm (1/4") plug to turn on the 9-volt power.

4. PACKAGE CONTENTS

Note! In the USA, transducers and preamps are packaged together.

4.1 UST package contents:

- 1 pc UST pickup

4.2 AST package contents:

- 1 pc AST pickup
- 1 pc cardboard installation guide (only AST)

4.3 A6T package contents:

- 1 pc A6T preamp circuitry board
- 1 pc A6T preamp box
- 1 pc A6T preamp box back

- 1 pc faceplate
- 4 pcs 2.2 x 9.5 mm (.09" x .37") screws (black) for faceplate
- 1 pc output cable with endpin jack and strap attachment
- Strap attachment includes:
 - Small hex nut
 - Small dress washer
 - Lock washer
 - Large dress washer
 - Large hex nut
- 1 pc battery holder with adhesive
- 1 pc battery cord harness (length 15 cm / 5.90")
- 2 pcs wire clips
- 1 pc instructions and user guide

5. TOOLS AND MATERIALS NEEDED FOR INSTALLATION

- Drill, preferably with continuously variable speed
- Wood or metal drill bit, 2.3 mm (.09") or 3 mm (.12") depending on the width of the transducer
- Wood or metal drill bit, 3 mm (.12")
- A rotary wood router with sharp 3 mm (.12") cutting bit
- Screwdriver, Posidriv #1
- Endpin reamer, 12 mm (.47") or wood drill bit, 12 mm (.47")
- Allen wrench, 2 mm (.08")
- Punch (spike)
- 13 mm (.51) wrench to tighten the nuts on the preamp endpin jack
- Small hand-held mirror
- Flashlight (penlight)
- Small round file
- Masking tape
- 1470 AST – cardboard installation mounting guide (supplied)

6. PREPARING THE GUITAR FOR INSTALLATION

Please read completely before starting the actual procedure.

6.1 Test fitting AST

For test fitting 1470 AST, loosen and remove the strings from the tuning machines.

AST Placement. See text at the following pages.



Steel string at bridge plate



Steel string alternative



Nylon string at sound board



Nylon string alternative

Before removing the strings and bridge pins from the bridge check to see if the AST will fit at the bridge plate correctly. Also at this time, clean the bridge plate surface with a moist cloth and let dry completely.

The cardboard installation template for the 1470 AST is specifically made for bridges that the saddle is at a slight angle to the bridge pinholes. It could be that the guide is too long for the space. If so, the template can be trimmed with scissors slightly to accommodate this. If the template does not fit the space, even after trimming, the pickup may be installed by hand. Although the instructions do not specify how to do this, if you carefully read the instructions you will be able to adapt them to perform the installation by hand. It really is not that hard or critical to install if you are careful.

If the pickup does not fit to the bridge plate because the bracing is too close, the pickup can be mounted behind the bridge plate at the soundboard.

For classical guitars the installation the AST is done by hand without the guide. For most classical guitars the AST is placed inside the guitar parallel to center brace that runs parallel to the strings on the bass strings side at the area between the bridge and soundhole. Sometimes there is also a flat brace running parallel under the bridge. The AST should be placed so that the AST is on the bass side of the brace running parallel to the strings and that part of the active area of the AST, that



has the lead to the preamp, goes on the brace for the bridge. If the brace there is too tall put the AST in front of the brace. Please read the instructions carefully and adapt them to the installation.

To test fit the 1470 AST in a guitar with a bridge plate, take the cardboard installation template from the tray in the box. Note! There is a small 4.5 mm (.18") round and a 4.5 mm (.18") elongated part that both need to be punched out to make their respected guide holes. The 4.5 mm round guide hole is for the low "E" bridge pin and the elongated guide hole to fit at the high "E" bridge pin inside the guitar. Peel away the protective covers from the two adhesive dots on the cardboard. Do not peel away the actual AST mounting adhesive protective cover yet!

The placement of the AST is important for connection to the preamp. For the A6T preamp, the AST's lead goes away from the low "E" side of the bridge area and towards the upper bout of the guitar (see pictures). When using A6T in left-handed guitars the lead of the AST should be turned around, with the red B-Band logo still up, so it goes the opposite way and will reach the preamp.

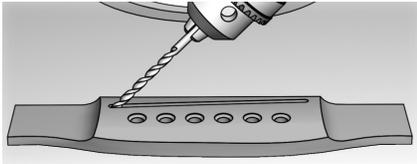
Now mount the AST to the top of the cardboard installation template at the rectangle AST area inscribed on the cardboard. Now put the assembly to the bridge pins, with the AST towards the bridge plate and check the fit. All of the AST's active area must fit at the soundhole side of the bridge plate without hanging over the edge of the bridge plate. Make sure that there is enough space that the bridge pins or string ball-ends will not touch the AST.

Next remove the strings, bridge pins and the saddle. If you are using a UST, check that it fits into the slot easily and that the saddle is sufficiently tight in the slot. Remove the strap button. Carefully enlarge the hole using 12 mm (.47") endpin reamer or 12 mm (.47") wood drill bit. Smooth the edge of the hole with a small file or a sinking drill bit.

6.2 Drilling hole for UST

For UST check the inside of the guitar to find the position of the braces. Drill a preferably 30 - 45 degrees angled, 2.3 mm (.09") or 3 mm (.12") hole (depending on the model of your B-Band UST) for the transducer into the one end of the saddle slot. Be careful not to damage the braces! In case you cannot make the hole angled, because of possible damage to the braces, you can make it straight down.

It is very important to smooth the edge of the hole using a bit of rolled sandpaper or a small file, to avoid pinching the UST as the saddle lies on it. For A6T preamp you must drill the hole at the low-E string side of the slot.



6.3 Making mounting hole for A6T preamp

Find a good position for the preamp at the side of the guitar. Be sure that the position is so, that when the holes are drilled that the holes, and the preamp structure, do not interfere with the any of the guitar braces or supports. For this installation it is very important to check inside the guitar body that there is enough clearance for the preamp at the side between the soundboard and the back of the guitar. Be sure to check that the transducer will reach the preamp from its position under the saddle and / or bridge area.

The sides of the guitar where the preamp will be installed should be inspected for accessibility and stability. Inside some guitars there is kerfed lining (the wood reinforcement between the back and sides inside the guitar) and other reinforcements that may make the area too small to install the A6T. If these reinforcements are altered it may cause instability at the guitar's side.

Guitars with solid sides or that have very thin sides may not be stable after cutting a hole to fit the A6T. It may be necessary to reinforce this area from the inside of the guitar with an extra piece of plywood before cutting or drilling holes. The thickness of the guitar side should be at least 2 mm (.08") and preferably 2.5 - 3 mm (.10" - .12"). If needed glue in a piece of plywood of suitable thickness to reinforce that area.

Cover the planned installation area with masking tape and mark the area with a pencil using the provided preamp hole-cutting template at the end of these instructions. Prepare the guitar for cutting the preamp hole with the rotary wood router by securing it in some way so that the guitar does not move while doing the cutting. Cut out the area for the preamp using the rotary wood router with a sharp 3 mm (.12") cutting bit. Do this slowly and very carefully so the router's cutting bit does not accidentally move outside the area that you have marked with the guide. Smooth the edges of the finished hole with a small file or sand paper and remove the masking tape.

6.4 Installing battery holder

Before installing the battery holder it should be checked by inserting a 9-volt battery in and out of it to learn how it works. Once this is checked, find a convenient place inside the guitar where the battery holder can be reached and that there is good access to the snap. Also check that it is in a place that the battery can be put in and out easily.

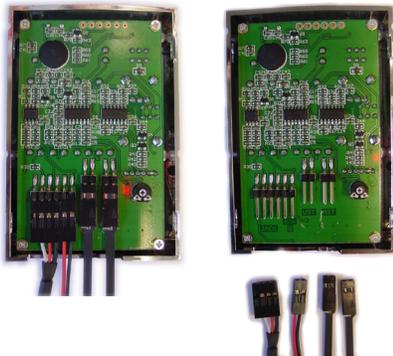
Recommended places are at the neck block or at the back of the guitar.

Be sure that the entire adhesive surface will make full contact with surface you are attaching it to. Clean the surface with a moist cloth and let the moist dry completely. Remove the protective liners of the adhesive and install it. Press firmly for about 30 seconds to make it secure. It takes 72 hours for the adhesive to achieve its final holding ability.

7. CONNECTING THE PICKUPS AND WIRES TO THE PREAMP.

Check the circuit board of the preamp and see the picture at these instructions for connections. Connect the pickups, battery cable harness and the output cable. Notice that the small holes on each connector of the transducer and battery cable harness should point upwards. If UST or AST is connected improperly a loud audible hum will occur. Make sure that they are connected correctly.

When transducer, battery wire and output cable are connected to preamp, close the cover by inserting to of the tabs of one side of the back cover to the slots of one side of the preamp box. Then push to insert the tabs of the opposite side to close. If difficult to push the tabs into place it may be necessary to bend the tabs a little so that it will fit. It is recommended to test the systems operation at this point. Insert a battery and connect the output cable to amplifier. You should hear it from the amplifier when you tap on the transducer.



8. INSTALLING THE PREAMP

For the next portion of the installation, be careful not to catch the pickup on anything as you work; inadvertent tugging may cause damage to the transducers or pull the connectors off the pin headers at the preamp.

Note where the hole for the access to the pickup's input gain control is at the back of the preamp. This will be helpful in locating it later if adjustment is needed. The control is set at the factory at approximately 50 / 50 blend of the pickups.

Regarding AST, please note to lift one corner of the protective layer of the mounting adhesive so it is easier to remove later.

Take the preamp assembly inside the guitar and install it to its place. Let the transducer(s) and wire harnesses hang loose inside the guitar at this moment. Install the front plate and attach the screws. It is important that you have a good quality screwdriver to avoid it slipping during tightening and thus scratching the guitar. Be careful to tighten the screws properly. It may be wise to tape the area around the front plate with masking tape in case you slip with the screwdriver. Do not over-tighten the screws as it may strip the screws, or crack the side of your guitar or the preamp's faceplate.

At the output jack unscrew the strap attachment, the small nut and the small dress washer from the endpin jack. Make sure that the large nut, lock washer and large dress washer are threaded onto the jack almost all the way to the opposite end of the output of the jack.

Next, test-fit the jack the endpin hole. It is easier to install the output jack by using an ink pen (or something similar) that fits into the jack. Put the pen through the hole at the guitar where the jack will go and with the other hand holding the output jack, and that going through the sound hole, put the jack on the pen and guide it through the hole of the guitar. Adjust the large nut so that only the smaller threaded section comes almost entirely out of the guitar. Put the dress washer and the small nut onto the threads outside the guitar. Tighten securely using

an appropriate wrench. Prevent the jack from rotating during tightening by inserting a small Allen wrench into the holes of the end of the jack. Install the strap attachment. Be careful not to over-tighten it, it just needs to be snug. Connect a fresh 9-volt battery to the snap-in connector and put it in the battery holder. Attach the battery wires to the side of the guitar with the cord clamps. Roll the extra cord as a "coil" in some of the clamps if necessary.

9. INSTALLING THE PICKUPS

Installing the UST. Thread the B-Band UST up from inside the guitar through the hole in the saddle slot. It is easier to find the hole inside the guitar if you insert a small screwdriver or toothpick from the top through the hole as a guide. Fit the UST all the way to the other end and bottom of the slot. Then put the saddle in place.

Note! After installation the UST pickup can have very high output, enough to overdrive the B-Band preamp input, causing distortion. The UST will lower in output, under pressure of the saddle, in 1 to 3 days.

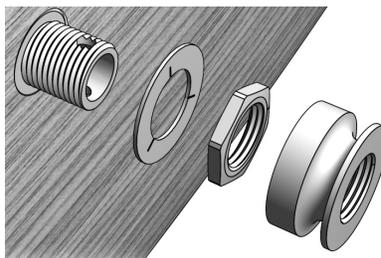
For installation of the 1470 AST (steel string guitars; x-braces), place two bridge pins in their holes, one at the low "E" string side and one at the high "E" side. Set the bridge pins normally. This, with the cardboard installation template / AST assembly will guide the AST to fit correctly. Having the AST cardboard installation template / AST assembly lying on the bottom of the guitar, remove the adhesive protective layer from the AST. Lift the assembly up and guide the assembly so the bridge pins insert the guide holes and carefully place it to the bridge plate. Then stick it firmly by holding and pressing firmly with fingers for a short while. Next carefully remove the cardboard installation template. Make sure the AST fits there tight and secure.

For AST remove the adhesive protective layer from the AST. Then stick it firmly by holding and pressing with fingers for a short while. If necessary, you can remove the AST shortly after

attaching, but be careful when doing this. Carefully lift under the edge of the AST, with your fingernail, and work it off slowly. Don't attempt to lift the AST off by pulling on the pickup lead. Peel the adhesive off the wood, rather than peeling the pickup off the adhesive. At installation this can be removed and reattached two or three times.

Inside the guitar, make sure that the UST or AST leads do not touch anything. We do not recommend attaching the "lead" wires of the UST or AST to the guitar by any means. This may cause excessive handling noise and resonance that sounds like distortion.

Note! After 24 hours the adhesive will dry and it will be hard to remove. Removal after this time may damage the pickup.



Test the system before putting on the strings. To do this, plug into an amplifier and then tap lightly on the top of the guitar to make sure that you can hear the pickup when you tap. Another good test is to shake the guitar when plugged into amplifier. If anything is loose or if the pickup's leads are touching something you will hear it. This should not happen.

Install the strings and test the system. Now play, keep it real and enjoy!

10. BALANCE ADJUSTMENT OF THE PICKUP'S INPUT GAIN

The A6T has a dedicated input gain balance control located at the backside of the preamp. The control is accessed through a small hole with a screwdriver. This control is used to set the basic balance of the UST and AST so the pickups can have equal output signal strength. The control is set at the factory at 50 / 50 equal blend.

With the back, or bottom, of the A6T preamp up (so you are looking at the bottom) turning the input gain control counter-clockwise will blend more of the UST pickup into the mix. Turning the input gain control clockwise will blend more of the AST into the mix.

After the installation of the system, the UST may have high output. It may be high enough to cause the input gain stage of the preamp to distort. After some time the output of the UST will lower as it adjusts to the string / saddle pressure. After this time period is good to check the balance of the pickups.

To check this, play the system through an amp system and listen to sound of both sides of the mix control. Most likely the UST can have a little hotter output (louder) than the AST.

11. TROUBLE SHOOTING

11.1 No sound at all or intermittent sound

- Check the guitar cable and amplifier / mixer you are using.
- Check that the battery is not discharged. If the sound is noisy or distorted, replace the battery.
- Check that the transducer and battery connectors are inserted onto the pin headers of the preamp correctly.
- Check that the plug is making good connection with the output jack. It may be so that the output jack is not sticking out far enough when the strap button is on. To check, unscrew the strap button off and plug in to the jack. If the symptoms go away the output jack needs to be removed and the nuts adjusted so the jack sticks out further.

11.2 Loud hum

- Check to see that the connectors of the UST / AST are inserted with the two holes up. If these connectors are upside down the system will work but it will buzz.
- Check that the connectors are inserted correctly onto their pin headers at the preamp.

11.3 Resonance or distortion with some played notes.

After installation the UST pickup can have very high output, enough to overdrive the B-Band preamp input, causing distortion. The UST will lower in output, under pressure of the saddle, in 1 to 3 days.

There are a couple places where a resonance can typically occur with some notes, causing distorted-sounding output. First, check that the lead portion of the transducer in the preamp is not touching anything and that the battery or output wires are not loose and thus cause resonance.

With the UST, another place, which in some cases has caused resonance, is the UST hole from the saddle slot to the inside of the guitar. Using a soft padding in it has cured these problems effectively.

With the AST, if resonance is occurring, it may be coming from the first 5 mm (.20") of the "lead" wire coming from the AST. Using double stick tape, stick this first 5 mm (.20") of the lead to the guitar.

11.4 Imbalance, one or several strings sound louder or quieter than the others (with UST)

If there's only a very slight imbalance, let the saddle "shape" on the UST for a few days. The fault may be repaired on its own. Users have reported that after three (3) days the saddle has settled on the UST and the balance becomes perfect.

11.5 Possible reasons for imbalance:

- The saddle or the bottom of the saddle slot is not flat.
- The saddle fits too loosely in its slot.
- The saddle slot might be too tight for the saddle to go in all the way. Try pushing on the saddle firmly to seat the saddle

- all the way down on the transducer.
- The saddle is too short.
 - There is debris in the saddle slot.
 - The angle of some of the strings behind the saddle is too low or too high.
 - The top of the guitar is bent.
 - The pickup is not installed all the way to the end of the saddle slot.
 - If the material of the saddle is bone.

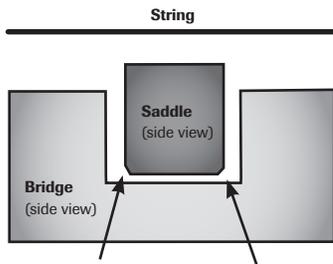
Bone is a natural material and the density and grain may not be consistent. This may cause inconsistencies in the way the sound is distributed making some strings louder or softer than others. We highly recommend a manmade material for the saddle.

11.6 If the balance problem does not disappear on its own, do the following:

- Check there is no debris or paint in the saddle slot.
- Check saddle that it is not too loose or tight in its slot. If it is too loose the saddle can tilt when the strings are tightened. The tilt will bring the bottom of the saddle off the pickup causing balance problems. If it is too tight it could be possible the saddle is not going all the way down on the pickup making a bad connection and causing balance problems.
- **Check the bottoms of both the saddle slot and saddle. They should be flat and straight.** If all things mentioned above are correct, and there still is a balance problem, try the following simple modification:

SADDLE EDGE MODIFICATION-

WHEN THERE IS STRING BALANCE AND SIGNAL OUTPUT PROBLEMS DO THIS MODIFICATION TO THE SADDLE.



USING SANDPAPER OR FILE, SHAPE BOTTOM EDGES AT LENGTH OF THE SADDLE TO LOOK LIKE THIS. NO MORE THAN 0,5 mm SHOULD BE TAKEN AWAY.

11.7 Other notable causes for balance problems

- Check string angles behind the saddle. They should be about the same behind every string. If the angle is too low, the string will not put enough pressure on the transducer and that may cause balance problems - usually higher output from the corresponding string. To deepen the angle, you can, for example, file a wedge-shaped groove on the bridge pinhole so that the string will have deeper angle behind the saddle
- With some instruments the outer most strings are too close to the edge of the saddle, causing balance problems to these strings. It may happen that the E string at the end of the UST does not come as loud as other strings. In this case, make another, shallow hole (not all the way through) at that end of the saddle cavity and move the pickup so the tip of the UST goes in the hole. If nothing else helps, you should machine the saddle slot longer and use a new longer saddle.
- Balance problems may also occur with some string sets, for example with classical guitars the G-string may cause problems.
- Another somewhat common cause for balance problems is the movement of the guitar top as it "lives" and moves especially during transport or by change of season when the humidity changes. Because of this the bottom of the saddle slot could become arched, not straight, as the top becomes more or less arched. By making the saddle flexible this problem can be avoided.

11.8 Other problems

If you notice any other problems, please contact the dealer, distributor or manufacturer, for help.

12. CUSTOMER FEEDBACK

If you have any comments, positive or negative, about any B-Band product, please do not hesitate to contact B-Band.

13. A6T SPECIFICATIONS

S/N ratio: Greater than -90 dB

Distortion: 0.05 %

Frequency response: 50 Hz - 40 kHz

Low-cut slope: -6 dB/octave

Input channel voltage gain: +24 to +30 dB adjustable

Input impedance: 100 Mohm $\parallel < 20$ pF

Output impedance: < 3.5 kohm

Bass control range: ± 12 dB @ 70 Hz (± 3 dB @ 300 Hz)

Middle control range: ± 12 dB @ 400 Hz ($Q = 0.5$)

Treble control range: ± 12 dB @ 2.5 kHz ($Q = 0.5$)

Nominal output level: -10 dB u (0.245 VRMS)

Power supply: 9 V battery (not included)

Current consumption: 0.8 mA typical

Connections: Transducer input: 2.54 mm (.10") header;

Output: 6.3 mm (.25") jack

Weight (with accessories): 140g

Dimensions: L 86mm (3.38"), W 57mm (2.24"), H 31mm (1.22").

14. EU / DECLARATION OF CONFORMITY

This B-Band product has been designed, manufactured and tested to comply with the requirements of EMC directive 89/336/ EEC and CE mark directive 93/68/EEC and carry the CE marking accordingly.

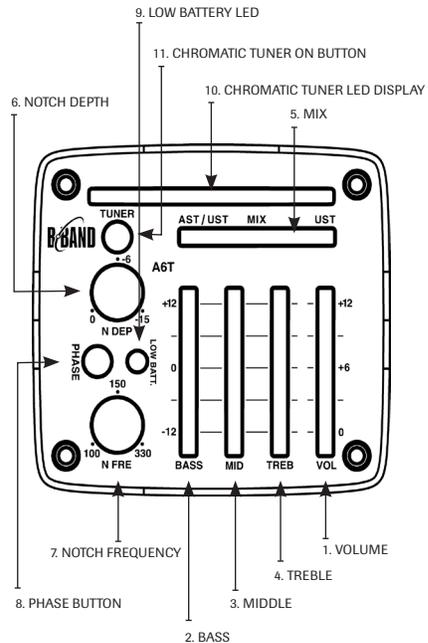
LED's in this product are Class 1 in accordance to EN 60825-1.

Statement of EU Declaration of Conformity is available from manufacturer upon request.

B-BAND A6T USER'S GUIDE

Congratulations and thank you for purchasing this fine instrument with the included B-Band pickup system. B-Band is committed to providing the highest quality product that is manufactured in the true spirit of acoustic / electric instrument aficionados.

Reading this manual thoroughly will give you the information necessary to fully understand the capabilities of this instrument and make the operation a simple and pleasurable experience.



1. VOLUME (VOLUME SLIDE CONTROL)
2. BASS (BASS SLIDE CONTROL)
3. MID (MIDDLE SLIDE CONTROL)
4. TREB (TREBLE SLIDE CONTROL)
5. MIX (AST / UST - UST XOM SLIDE CONTROL)
6. N DEP (NOTCH DEPTH ROTARY CONTROL)
7. N FREQ (NOTCH FREQUENCY ROTARY CONTROL)
8. PHASE (PHASE BUTTON)
9. LOW BATT. (LOW BATTERY LED LIGHT)
10. CHROMATIC TUNER LED DISPLAY
11. CHROMATIC TUNER ON BUTTON

DESCRIPTION OF CONTROLS

1. VOLUME (VOLUME SLIDE CONTROL)

The VOLUME slider controls the output volume. At "0" it is completely OFF. At "+12" it is LOUD!

2. BASS (BASS SLIDE CONTROL)
3. MID (MIDDLE SLIDE CONTROL)
4. TREB (TREBLE SLIDE CONTROL)

The BASS, MID, and TREB slider controls are a 3-band equalizer for controlling tone.

The BASS tone control is a normal boost / cut shelving controls.

The MID (midrange) and TREB (treble) tone controls are normal boost / cut tone filters.

The center detent on these tone controls yields a flat tone response; "+12" boosts the tone; "-12" cuts the tone.

5. MIX (AST / UST - UST XOM SLIDE CONTROL)

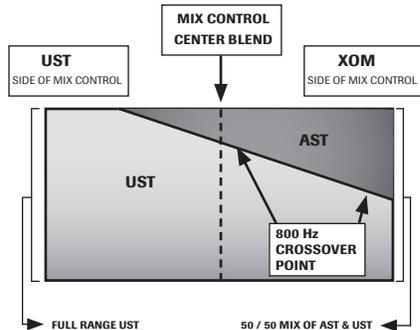
Your guitar is equipped with the exclusive B-Band XOM™ mix control and two pickups - the UST (Under Saddle Transducer) pickup and AST (Acoustic Soundboard Transducer) pickup.

The UST pickup is under the saddle of the guitar. This pickup gives full range tones and is the fundamental sound that is always present in the sound mix.

The AST pickup is attached to the bridge plate or the soundboard of the guitar. This pickup adds some extra sonic tone and adds that tone to the mix.

XOM is an acronym for Cross-Over-Mix. This function is at the "MIX" control of the guitar and its use is described below.

When the mix control is turned all the way towards the (XOM) UST / AST side, which is the XOM position - a 50 / 50 mix of AST and UST is heard. This is the crossover mix of the AST and UST. The crossover point is 800 Hz. From 800 Hz and up is AST. 800 Hz and down is the UST. 50% is the high tones of the AST and 50% is the low tones of the UST. See diagram below.



When the mix control is turned all the way towards the UST side the sound is ONLY the UST pickup sound. Full range sound of the UST. No AST sound.

With the mix control at any position you always hear the low tone part of the UST pickup. This provides a very round and solid low tone sound at any position.

The XOM mix control blends the higher tone sounds of both the UST and AST.

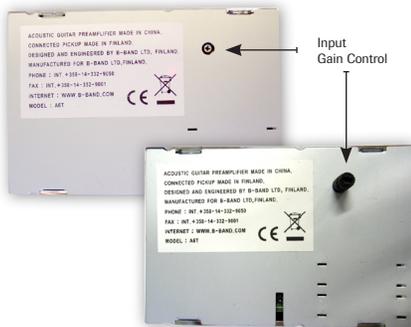
BALANCE ADJUSTMENT OF THE PICKUP'S INPUT GAIN

The A6T has a dedicated input gain balance control located at the backside of the preamp. The control is accessed through a small hole with a screwdriver or may have a shaft sticking out from the back that can be adjusted with fingers (see pictures). This control is used to set the basic balance of the UST and AST so the pickups can have equal output signal strength. This works in conjunction with the XOM circuit. The control is set at the factory at an approximately 50 / 50 equal blend.

When using the XOM control and the sound is not balanced – for example, if the UST side sounds louder than the AST – OR – the AST side sounds loud or distorted – the input gain control can be adjusted to get a more balanced mix.

As the control is at the back of the preamp (inside the guitar), the strings will need to be loosened to get access the back of the preamp.

With the back, or bottom, of the A6T preamp up (so you are looking at the bottom) turning the input gain control counter-clockwise will blend more of the UST pickup into the mix. Turning the input gain control clockwise will blend more of the AST into the mix.



To check this, play the system through an amp system and listen to sound of both sides of the mix control. Most likely the UST can have a little hotter output (louder) than the AST.

6. N DEP (NOTCH DEPTH ROTARY CONTROL)

7. N FREQ (NOTCH FREQUENCY ROTARY CONTROL)

The two rotary controls are for feedback control. Feedback is the undesirable sound that sometimes occurs at medium to loud volume levels and sometimes when standing close to the speaker that is reproducing the guitar sound.

The N DEP (notch depth) and N FRE (notch frequency) can help control feedback.

The N DEP at "0" is off; at "-6" it cuts the level of the N FRE by six decibels; and "- 15" by fifteen decibels.

The N FRE indicates a range of frequencies that can be affected from 100 Hz to 330 Hz.

Set up by first turning the N DEP off to the full counter clock-wise position "0". Set the rest of the controls to suit your taste taking care that as you do this control any initial feedback by turning down the volume control. Once you set your sound turn the volume control up. As you reach a feedback threshold and hear feedback, turn the N DEP up half way and using the N FRE find the frequency where the feedback is reduced. Once this is found you can move the N DEP either way to make this effect stronger or weaker.

The Notch Depth and Frequency should be used sparingly as they will affect the tone.

Once you experiment with the settings of these controls you will find more about how they work.

8. PHASE (PHASE BUTTON)

The PHASE button controls the phase of the pickup in relationship to the phase of the speaker(s) that are being used with the system.

Pushing this button in will put the pickup "out of phase" with the speaker(s). When the button is out the pickup are "in phase."

This control is most useful for feedback control and will provide a tone color. Once you experiment with the settings of this control you will find more about how it works.

9. LOW BATT. (LOW BATTERY LED LIGHT)

The LED will light when the battery has lost power. Replace the battery when this light is on.

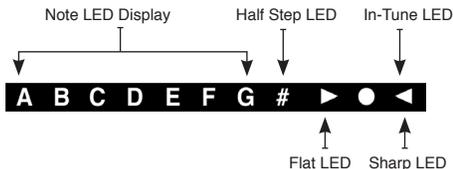
This LED light will flash when a cable is connected to the output jack of the pickup system. This shows the battery is good.

BATTERY

A 9-volt battery powers the B-Band A6T preamp. Before connecting the instrument to an amplifier or mixer please check that a fully charged 9-volt battery is connected.

10. CHROMATIC TUNER LED DISPLAY

11. CHROMATIC TUNER ON / OFF BUTTON



The tuner will work with or without a cable plugged into the output jack.

Pushing the tuner button (11) turns ON the tuner. When the tuner is active the pickup system output is muted. No sound will go to the amplifier or mixer when the tuner is active.

Pushing the tuner button (11) again turns the tuner OFF and the pickup system output will be active and sound will go to the amplifier.

If the tuner is ON and the tuner button is not pushed within 2 minutes the tuner will turn OFF automatically and sound returned to the output.

The tuner has a seven Note LED Display; Half-step (#) LED; Sharp arrow LED; Flat arrow LED and In-Tune LED. The tuner Note Display shows the nearest note of one plucked string's sound. If the note showing is a half step (for example A#; C#, D# and so), the half-step (#) LED will light.

If the Sharp LED is showing the string needs to be lowered in pitch.

If the Flat LED is showing the string needs to be raised in pitch. When the In-Tune LED lights the string is at the correct pitch of the note displayed at the Note Display LED.

SETTING UP THE PREAMP FOR USE

Tune the guitar. See the tuner instructions at 10 and 11.

Before plugging a cable into the guitar's output jack, slide the volume control OFF ("0"), slide the 3-band EQ controls to "0"; slide the mix control to "UST"; turn the Notch Filter and Frequency rotary controls fully counter-clockwise; push the phase button so it is OUT (in phase); and turn the tuner OFF.

Make sure that the amplifier or mixer volume is OFF and the EQ tone controls are at flat or off. Plug a guitar cable into the output jack of the guitar and into the input of the amplifier or mixer.

Slide the volume control of the A6T half way up ("6"). Turn the volume of the amplifier or mixer up enough to get a good level of sound. Refer to the amplifier or mixer instructions on how to set up best gain structure with an instrument for the cleanest possible sound.

Once the desired volume level is found use the EQ on the A6T preamp to find your tone.

Try moving the MID slider down a little to cut this tone. This will bring some smoothness to the sound. Turn up the BASS slider some to add fullness to the sound. Use the TREB control to brighten the sound. Experiment and find a tone that suits your taste.

Next try moving the "MIX" control more towards the "AST" side. At a 50% / 50% mix, at the center, the sound will change. Adjust to

suit your taste.

Use the EQ tone controls at the amplifier or mixer to fine-tune the tone.

Using the Notch Filter, Notch Depth and Phase controls please see section 6, 7 and 8.

Good luck and turn it UP!

If you have any further questions, comments or issues, please contact the dealer that you made your B-Band purchase from, or the B-Band distributor in your region, or directly to B-Band.

B-BAND LIMITED WARRANTY STATEMENT

In the unlikely event that your product needs guarantee service, please contact your dealer, distributor or manufacturer. To avoid any unnecessary inconvenience on your part, we recommend you read this instruction manual carefully before seeking guarantee service.

YOUR GUARANTEE

By this Guarantee, B-Band guarantees the product to be free from defects in materials and workmanship at the date of original purchase for a period of one (1) year from that date.

If within the guarantee period the product is determined to be defective (at the date of original purchase) due to improper materials or workmanship, B-Band will, without charge for labor or parts, repair or (at B-Band's discretion) replace the product or its defective parts subject to the terms and limitations below. B-Band may replace defective products or parts with new or refurbished products or parts. All products and parts replaced become the property of B-Band.

TERMS

1. Guarantee services will be provided only if the original invoice or sales receipt (indicating the date of purchase, model name and dealer's name) is presented with the defective product within the guarantee period. B-Band may refuse free-of-charge guarantee service if these documents are not presented or if they are incomplete or illegible. This Guarantee will not apply if the model name or serial number on the product has been altered, deleted, removed

or made illegible.

2. This Guarantee does not cover transport costs and risks associated with transport of your product to and from B-Band.

3. This guarantee does not cover:

- a) periodic maintenance and repair or parts replacement due to wear and tear.
- b) consumables (components that are expected to require periodic replacement during the lifetime of a product)
- c) damage or defects caused by use, operation or treatment of the product inconsistent with normal use
- d) damage or changes to the product as a result of:

- i. misuse, including:
 - treatment resulting in physical, cosmetic or surface damage or changes to the product
 - failure to install or use the product for its normal purpose or in accordance with B-Band's instructions on installation or use
 - failure to maintain the product in accordance with B-Band's instructions on proper maintenance
 - installation or use of the product in a manner inconsistent with the technical or safety laws or standards in the country where it is installed or used
- ii. the condition of or defects in systems with which the product is used or incorporated except other B-Band's products designed to be used with the product
- iii. use of the product with accessories, peripheral equipment and other products of a type, condition and standard other than prescribed by B-Band
- iv. repair or attempted repair by persons who are not B-Band employees
- v. adjustments or adaptations without B-Band's prior written consent, including:
 - upgrading the product beyond specifications or features described in the instruction manual, or
 - modifications to the product to conform it to national or local technical or safety standards in countries other than those for which the product was specifically designed and manufactured
- vi. neglect
- vii. accidents, fire, liquids, chemicals, other substances, flooding, vibrations, excessive heat, improper ventilation, power surges, excess or incorrect supply or input voltage, radiation, electrostatic discharges including lightning, other external forces and impacts.

4. This guarantee covers only hardware components of the product.

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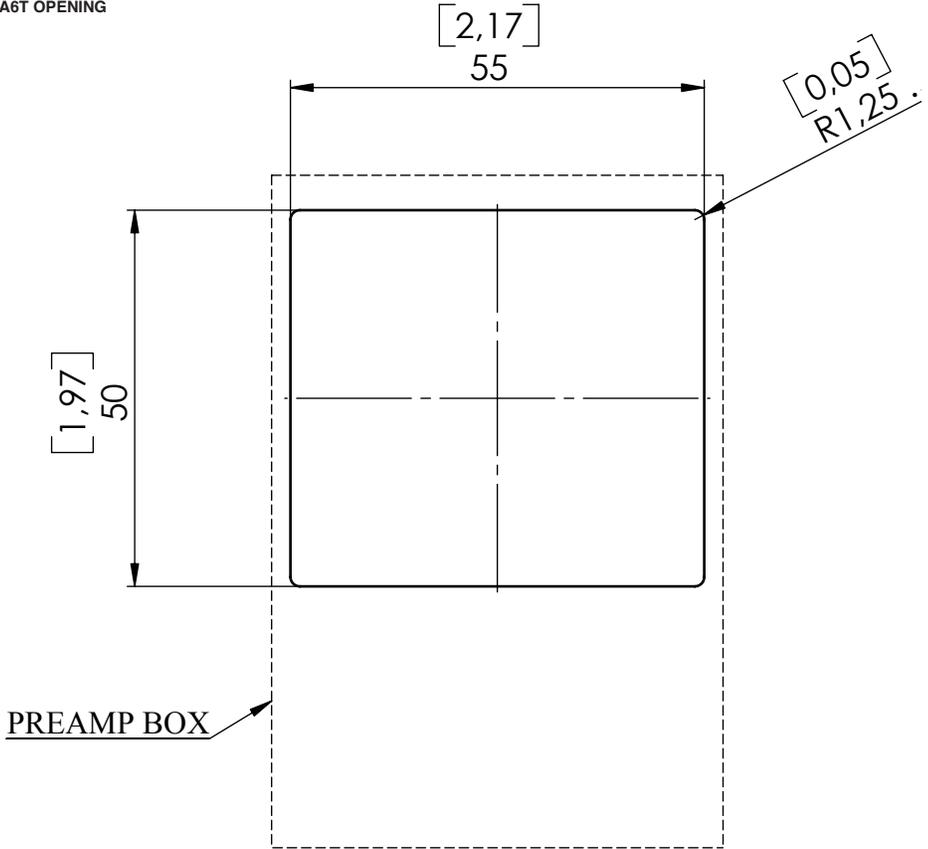
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