Digital Chanter User Manual

Register online for warranty and software updates.
www.blairbagpipes.com/support

Table of Contents

Safety & Care

General
- Handle your Digital Chanter as you would a traditional Bagpipe, with lots of care!
- There are no user serviceable parts to the Blair™ Digital Chanter.
- Do not disassemble the chanter. This will void the warranty.
- The only removable part is the mouthpiece which can be unscrewed for storage.
- Always check the volume setting before connecting headphones or speakers.
- Do not insert headphones or connect any sound amplification when the volume is high.
- Depending on the power source, connecting both USB and audio input may cause distortion.

Some don'ts for optimal care of your chanter
- Do not bend or twist, apply excessive force to the switch, body, audio input or USB port.
- Do not leave the chanter in extreme heat, sunlight or cold.
- Do not expose the chanter to rain, wet or moist environments.
- Do not let dust or dirt cover the sensors. Always keep in the case provided.
- Do not let liquids near your chanter.
- Do not use the chanter in the following environments which can result in malfunction:
  - Direct and or extreme sunlight.
  - Locations of extreme humidity or temperature.
  - Excessively dusty or dirty environments.
  - Locations of excessive vibrations.
  - Locations with excessive magnetic fields.

Cleaning
- Clean only with a dry, lint and dust-free cloth
- Blow any dust out of finger holes with clean dry air (do not use any hard objects to clean the finger holes).

Battery
- The Blair™ Digital Chanter is powered by a lithium-ion battery charged via the USB port (100mA). In normal use, the battery may provide up to 6hrs playing depending on your chanter's settings.
- To increase the power time of your chanter, turn off the OLED, Metronome, EQ and reduce the volume.
- Do not expose the battery to excessive heat or use any lead unspecified for charging.
- Battery Certification ICR14500 & IEC62133 Rep. NCT17036083I1-1
- To re-charge the battery, use the supplied cable or a fully compliant USB lead.
- The Battery in this product should only be repaired/replaced by the manufacturer.
- There may be the risk of explosion if a battery is incorrectly installed.
- Do not expose the internal battery to excessive heat or fire.
- When the battery is low, the chanter may malfunction and become unresponsive.

Warranty
- **Murray Blair Pty Ltd** warrants that your Blair™ Digital Chanter will operate as described free of material defect for a period of two years from the date of purchase, when used and operated in accordance with this User Manual.

This warranty is void if:
- Your Blair™ Digital Chanter has been disassembled, or repaired other than by Murray Blair Pty Ltd or by a technician authorised by Murray Blair Pty Ltd.
- The safety and care instructions in this User Manual have not been followed.
- Any objects or materials have been inserted into the finger holes.
- Any alterations, modifications or add-ons have been made.
- Damage has been caused by mistreatment or accident.
- The battery has not been correctly stored or recharged in accordance with this User Manual.
- The chanter has been used in unsuitable environments (see above) and this has caused the defect.
- If you need to make a warranty claim, follow the procedure below:
- In the first instance contact your place of purchase, and also email (*sales@murrayblair.com*) as the defect may be resolved by a software update or similar on-line intervention.
- If the defect cannot be resolved on-line, return the chanter freight-paid to Murray Blair Pty Ltd at (*16 Davison St, Richmond 3121 Victoria Australia)* with a legible copy of your original sales receipt showing the date and location of purchase and your return address. Your chanter will be repaired or replaced and sent to your return address. However, any import duty or related charges are the sole responsibility of the recipient. Murray Blair Pty Ltd is not responsible for any customs or handling fees that maybe charged by your local authorities.

Limitation of Liability
The liability of Murray Blair Ltd under this warranty is limited, to the extent permitted by law, to the repair of replacement of the chanter, or the refund of the purchase price.

Disclaimer
When in close proximity to electrical devices, the Blair™ Digital Chanter may malfunction or cause interference. When in direct sunlight, the Blair™ Digital Chanter sensors may malfunction.

Copyright
Copyright in and off the sound samples in the Blair™ Digital Chanter is owned by Murray Blair Pty Ltd; the sound samples may not be copied or reproduced in any musical instrument without prior written consent of the copyright owner.

Trademark
Blair™ is a trademark of Murray Blair Pty Ltd.

Care
• When not used always store the Digital Chanter inside the case.
• Do not attempt to separate or open the sections of the Chanter. It does not separate.
• Do not bend, twist or apply force to the chanter body.
• The only removable part on the Digital Chanter is the mouthpiece and sole.

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Register your chanter
Go to: https://blairbagpipes.com/my-account/
You will need your date of purchase and serial number
To find serial number;
>**Power on**, scroll to **> Advanced >Serial no.**

***Charge Chanter before first use**

Getting started

Power ON the chanter by gently pressing the toggle switch and release. This switch is referred to as the navigation switch and is used scrolling and selecting menu items.
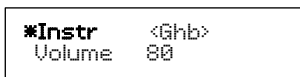
The **navigation** switch has 3 positions. **Up**, **Down** & **Enter** (pressing in).
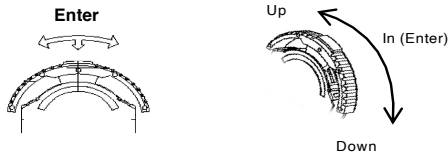
On the OLED display the current position of the navigation switch is shown by an arrow '**>**' next to the menu item.

```
>Instr    Ghb
 Volume   80
```
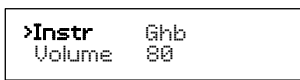
To edit the current position, press **Enter** and an Asterix* will appear showing the setting can be edited.
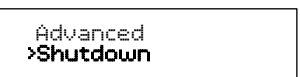
```
*Instr    <Ghb>
 Volume   80
```

When editing a setting changed are made by pressing up/down the navigation switch and confirming by pressing **Enter.**

To return to a previous menu, press **Enter** then navigate to >back and again press '**Enter**'. This returns you to the previous menu.

```
 Vibrato
>back
```
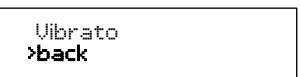
Shutdown the Chanter by navigating to the main menu and press **>Shutdown.**

```
 Advanced
>Shutdown
```

The main menu items are:
Instr
Volume
Metro
Reverb
Advanced
Shutdown

All editable items (except Shutdown) branch away from the main menu and are editable. Please refer to the menu map at the end of this manual.

How to return to the main Menu
Continue to navigate **>back** until the main menu is reached.

How to Connect Audio and USB

The Blair Digital Chanter™ outputs stereo sound via the 3.5mm audio jack. This can be connected to headphones, speakers or any device that accepts an audio input. (Live sound PA, studio recording software).

It's Stereo therefore the Chanter and Drones can be panned to either the left or right-side speaker/ headphone and mixed to your preference. It's recommended to use a high-quality speaker or headphones as the sound generated by the Blair Digital Chanter is professional, high-definition audio of studio quality.

To connect the Blair™ Digital Chanter, **Power On** and check the volume level, then connect headphones or speaker. **Always check volume settings before connecting headphones, speakers to avoid potential hearing and equipment damage.

There are 2 outputs:
1x Stereo audio
1x USB

The **USB** port is for data transfer, updating and re-charging the internal battery. The **USB does not transmit audio.** The **USB** can also be connected to a PC, iPad to transmit MIDI.

**Always use the supplied USB cable.

The 3.5mm stereo output can also be connected to wireless equipment, effects pedals and other audio processing devices. *Important; the output of the Digital Chanter is stereo and if connecting to external processing the input maybe mono. The Blair Digital Chanter is compatible however the output signal maybe converted to mono.

Bluetooth wireless audio is not recommended due to introducing latency to the sound after a note is being played. It also compresses the audio and if recording, would be unacceptable. Musical instruments like bagpipes need fast multi-way communication in order to play and hear simultaneously. If we accept the delay it would be like playing a note ahead of the beat before hearing it sound. There are new formats of Bluetooth like aptX with a reduction in latency, but they are still slow for bagpipe players.

The difference with the Blair™ Digital Chanter is the high quality, high-performance audio with a large dynamic range so it can be used for recording and performing. There are wireless alternatives;
UHF. Professional format used by guitars, violins, vocalists etc. Minimal audio compression (minor) with undetectable delay. UHF tends to be more expensive than other formats because it's stable, higher quality and robust.
VHF. Similar to UHF with a shorter range, also operates more on 'line of sight' so the antenna should have a clear view of the receiver.
2.4ghz Inexpensive. May experience interference with other items such as WIFI routers.

Learn about the finger sensors

An extended video about the finger sensors is available online
https://youtu.be/qft7VX33imk

The unique feature of the Digital chanter is the ability to adjust each individual sensor to suit your fingers and by doing so the chanter emulates how a traditional chanter performs when lifting the fingers.

The Blair™ Digital Chanter™ finger sensors react to positioning, height and skin reflections and needs to be tuned into your own fingers. Adjusting each sensor value allows precise tuning of the chanter to the way you play and can even be set to assist in training the fingers to perform more efficiently.

To understand how to adjust the sensors try this:
• Set the value of Sensor Hole HA to '+80' and using only your thumb, place the finger over the High A hole. You will notice that even with the thumb on the hole the HG note cannot be sounded. This tells us the HA hole sensor is too sensitive and we need to adjust the value of the HA hole sensor so the other notes will sound. (Usually in a negative direction).

Important; If the note above the sensor isn't correctly calibrated the proceeding notes may not sound correctly. (Similar to not covering a hole on the traditional pipes).

How to first set your finger sensors

• Always commence with the High A hole.
• Navigate to the Sensor menu (Advanced > Sensors > and select Hole HA)
• Place your thumb on the hole and play a High A grace note. Adjust the Hole HA sensor value until both the High A and High G can be heard, lifting your fingers as you would normally play.

Once satisfied, press switch **Enter** and navigate to Hole HG. Continue the process for each sensor.

Important tips
To make a hole more sensitive, **increase** the sensor value.
To make a hole less sensitive, **decrease** the sensor value.

For example if High G is not heard and the sensor value is -10 and the finger is on the hole, it's too sensitive. **Decrease** the value until it sounds, values such as -20/-25/-30.
This will make the sensor less sensitive.

Commence adjusting sensors in values of +/-10 and once in an acceptable range adjust by small increments.

Negative – less sensitive   **Positive – more sensitive**
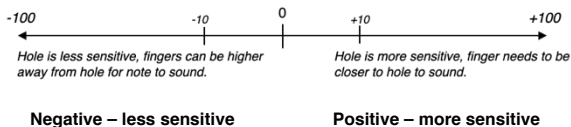
As the sensors are *exclusive to your finger characteristics,* it's unlikely another person's settings will be the correct calibration for your fingers.

The process of calibrating the sensors can be compared to a traditional chanter. If a note is not sounding below what the fingers are playing, then one of the sensors (likely the sensor one note higher) will need adjusting.
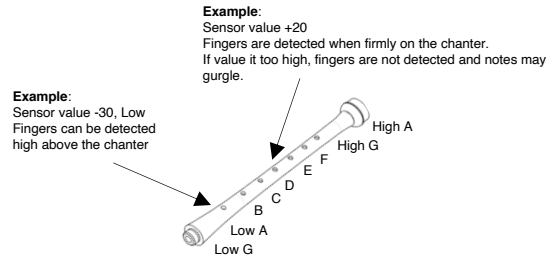
Increasing a sensor value = more sensitive, and you will not need to lift the finger very high off the hole. It lowers the detection height.

Decreasing a sensor value = less sensitive, this means the sensor is detecting your finger higher above the hole.

How to navigate to the Sensor menu

Go to **Advanced** > **Sensors** and press **Enter**.

The first item in the Sensor menu is >Hole HA
To adjust the sensor press the navigation switch '**Enter**'. An Asterix appears next to the selected hole, and the value has an arrow on each side.

This value can be increased or decreased using the navigation switch.

The chanter automatically stores the new setting when it is altered, pressing **Enter** leaves the current hole sensor so you can proceed to the next.

Adjust the sensor value until the correct note is heard. Once the correct value has been reached, press the switch **'Enter'.**

To return to the main menu navigate to **> back** and press **Enter.**

Troubleshooting sensors

The sensors can be calibrated exactly to your fingers however it's also possible to set a sensor detection point that can also sound the note either high above the hole, exactly on the hole or below the edge of the hole.

If the sensor has a low value well into the negative range, the chanter will produce a lag or slow responsiveness when playing and miss grace notes.

If it's set too high, a gurgle or notes lower than the sensor that's set too high will sound.

If only down to a certain note can be heard, check the last note sounding and reduce that hole sensor and the next hole sensor into the negative range.

The sensors work in low light and darkness.

The sensors work with dry hands and do not require moisturizer.

The sensors have no delay when set correctly.

Check the Blair Bagpipes YouTube channel for sensor tutorials and extended instructions.

Instruments

The Blair™ Digital Chanter contains 3 default instruments and 6 additional Usr instruments that can also be loaded. In total 9 stereo instruments are available.

When the chanter is first **Powered ON,** the default instrument is Ghb. Afterwards it defaults to the last instrument of the previous session.

The following instruments are selectable by pressing ; **Instr > Enter** then scroll through the instruments
To select an Instrument press **Enter**
  • **Ghb** Great Highland Bagpipe
  • **Sml** Scottish Smallpipes
  • **Ptc** Practice Chanter
  • Usr 1
  • Usr 2
  • Usr 3
  • Usr 4
  • Usr 5
  • Usr 6

The chanter has 6 memory banks labelled **'Usr'** in the menu. Additional instruments are complimentary and available for download from www.blairbagpipes.com/downloads.

By connecting to the **Blair Bagpipes App** you can add and interchange these additional instruments and also update the firmware when required.

The Blair Bagpipes App is a free download available from www.blairbagpipes.com/downloads

The following menu settings are available for each instrument:
• **Bass** drone volume/ Drone 1(Off-30)
• **Tenor** drone volume/ Drone 2 (Off-30)
• **Treble** (EQ +/-8)
• **Bass** (EQ+/-8)
• **Pitch** change (420.0-499.9hz)
• **Pan** (Chanter, Drone 1, Drone 2)
• **Vibrato** (Ghb only, D, E, Fnat, F Vib On/Off)

Instrument settings

Drone Volume
• Bass, Tenor,
 (Drone 1 & Drone 2)
This is the volume control to adjust individual drones with a range of (Off – 30). By default they are set to 20.

Treble & Bass (EQ)
This is an EQ for the overall sound of the instrument.
In addition to being able to adjust each volume component an overall EQ is available for adjusting the complete instruments table and bass. This is useful to compensate when your speakers or headphones aren't producing a good tone.

The EQ is a shelf type and can boost the range +/-8dB both in for treble and bass.

Pitch
The pitch frequency of each instrument can be adjusted in 0.1hz steps in a range from 420.00 – 499.9Hz.
This is useful when playing with other acoustic instruments and alongside another digital chanter. By varying the pitch slight eliminates any flanging/ phasing effect that may

Pan
Each instrument includes a **Pan** to enhance spreading the sound across 2 speakers or your headphones. By using **Pan**

it's possible to emulate the characteristics of playing an actual set of bagpipes with drones spread across the stereo image, like if they were also on your shoulder.

All elements of the Instrument (Chanter, Bass Drone, Tenor Drone or Drone 1 & 2) can be individually positioned in the stereo mix. Using Pan widens the stereo image similar to the acoustic instrument.
To add Pan and hear it widen the Great Highland Bagpipe sound go to **Instr** > **Pan, then select**
Chanter '0'
Bass Drone 3 steps to the left (3L)
Tenor Drone 2 steps to the right (3R)
The stereo sound will now appear wider.

The **Pan** function can also be used to route individual audio elements to either stereo channel and useful for studio recording and live performance. For example:
Pan the Chanter to the Right side (10R), and Bass & Tenor Drones to the left side (10L). This separates both sounds in the mix. The Chanter can now be routed to a Reverb, and the Drones for example to a Chorus box, or individually tracked when recording.

Pan is also available for Metronome.

Metronome

The Blair™ Digital Chanter features a metronome with the ability to mix individual volumes of both the metronome and the instruments audio. This feature allows full control of the metronome volume in the final audio output. The metronome features 2 distinct percussive sounds, with the option of 8 beat patterns to select the accented beat.

Adjustable parameters
• **Metronome On/ Off**
• **Volume** 1-30
• **Tempo** range 1-300bpm
• **Beats** 1-8
• **Pan** (select to pan metronome LEFT & headphone RIGHT)
• **Reverb** On/ Off

There are 8 beat patterns available. The starting beat is accented by a change in percussion sound.

How to activate the metronome:
Main menu >**Metro** >**ON.**
The metronome icon will appear on the OLED display when it is ON. It's important to note that the Metronome volume can be adjusted, and the position of the metronome to either left, right or both headphones.

Reverb
Reverb is an echoing effect that adds space, depth and warmth to a sound and can enrich the harmonics of an instrument. Almost every bagpipe recording uses Reverb which helps replicate how a Bagpipe sounds in real-life. The Blair™ Digital Chanter includes a world-class reverb of studio quality and can replicate environments from small rooms, concert halls to sporting stadiums. It's features exceptionally low noise that doesn't add artefacts to the sound.

By default, the Reverb settings are suitable for most environments. However, if you're keen to experiment and create your own 'space' here are the available parameters.

• **Reverb On/ Off**
• **Volume 1-30.** This sets how much of the original 'dry' sound (your Bagpipe) is sent to the Reverb to become 'wet'. A small subtle amount is often used in recordings to add space/

warmth and the setting allows all the sound to be 'Wet'. By adding too much Reverb can make the sound 'muddy'.

• **Rm Size** (Room Size) 1-30. Rm Size adjusts the size of the room you would like to create. The larger the Rm Size the larger the space, be it a Hall or Stadium – the bigger the Reverb effect.

• **HF Damp** (High frequency dampening) 1-30. On certain frequencies and settings, a Reverb can produce a high frequency 'ring'. This occurs when the volume and room size are set high, therefore, to compensate a high-frequency dampening filter can be used.

• **Pre-Dly** (Pre-delay) 1-500. Pre-delay is the amount of time between your original 'dry' sound and when the Reverb effect is heard. By adjusting the Pre-delay it's possible to create a delay style effect, similar to shouting across a large valley to hear your own echo!

• **St Wdth** (Stereo Wdth) 0-10. Stereo width spreads the Reverb sound across both speakers/ headphones. It adds a widening effect. When the St Wdth is set to 0 it's noticeable that the Reverb is placed in the middle of the stereo image, with a spread of '10' it is spaced across both left and right outputs.

• **Pan (Left-Right).** Pan allows you to position the Reverb in either the Left or Right speaker (or headphone). This is useful when recording or performing live for example, by sending a 'Wet' signal (the audio with Reverb added) to the 'Left' and a 'Dry' signal to the 'Right'. It can be configured to your preference.
PAN can also be used in conjunction with the PAN in the Instrument menu by routing the Chanter to one side (for example Left) and the Drones to the other (for example Right). In this configuration different amounts of Reverb can be individually sent to either the Chanter or Drones.

Using MIDI

MIDI is a digital protocol that allows instruments to communicate with each other, and PC's.

The Blair™ Digital Chanter is MIDI enabled and includes a built-in interface – which is the USB port. This sends note information, not sound, from one device to another via the USB port. By using MIDI it is possible to record your note information into a PC or Tablet, and play regular Highland Bagpipe fingering to sound another MIDI instrument such as piano, guitar or drums.

The Blair™ Digital Chanter sends MIDI information via the USB port. This needs to be connected to another device enabled to receive MIDI data, such as a PC, iPad or digital tablet and a corresponding app such as Garageband to produce the sounds.
The default note settings for the Blair™ Digital Chanters 3 installed instruments are mapped to the following MIDI notes, which correspond to what will be received in your app to produce the MIDI sounds.

Chanter	Low G	Low A	B	C nat	C	D	E	F nat	F	HG	HA	Tenor	Bass
MIDI note number	56	58	60	61	62	63	65	66	67	68	70	58	46

However, when loading new instruments into the Blair Digital Chanter memory, the notes are mapped according to the key of the instrument

Gce Det (MIDI)
This feature utilises the Chanters inbuilt MIDI interface to send Grace note information to a separate MIDI number mapped an octave above. From there it can used to your preference, such as scoring music, MIDI events, control changes and controlling midi devices.

For pipers, when sending and recording MIDI data it's often difficult to distinguish the difference between a note and a grace note after the data is recorded.

The Grn Det parameter lets you define a range that your grace notes are detected, identifies the difference between an actual note and a grace note and maps accordingly to your midi application. This feature effectively doubles the number of MIDI note numbers the chanter is outputting and can be exclusively customised to the way you play. It also allows the potential for many applications such as music scoring, triggering MIDI events and any application or device that can be mapped to a MIDI note and control messages.

Detection range Off - 999

Advanced settings

The Advanced settings menu allows further customisation of overall settings.
To enter go **> Main** menu **> Advanced** and press **Enter**.

The following menu items are available**.**

Sensors
Menu for adjusting the individual sensors. Refer to How to navigate to the Sensor menu.

Ambient Light Regulator (ALR)
The ALR is used when there is a high level sunlight and extreme temperature. This may affect the Chanter when playing outdoors. If the sunlight is extreme finger sensors maybe triggered and notes sounded without any playing.
ALR four levels of control; Low, Med, High & Extreme.

Unless outside in direct sunlight this should always be set to OFF. If activated step up the ALR from low to extreme until the ambient light is restricted from interfering with the sensors. **For playing indoors, the ALR should be set to OFF.**

Dsp Int: Display Intensity, this controls the brightness level of the OLED screen.

Dsp T/O: Display time-out specifies the time for when the screen turns OFF, however the Chanter remains on and functioning. This can be used to save battery power, or when performing. 'Enter' can be pressed to activate the display if it has timed-out.

Pwr T/O sets the time for when the unit is not being played to shutdown. This is commonly referred to as a power-save function. The settings are 2min, 5min, 10min and Off.

Updater Select when connecting to a PC and installing software updates. Also when determining which firmware version the chanter has installed.

Fact Rst Restores the chanter to the original settings. All previous settings will not be saved.

Serial Number: Your chanter's unique serial number, which should registered to receive software updates, online user manuals and support.

Charging the battery

Always use the supplied USB cable when charging the batter and updating the software. Charging may take 4-6hrs or longer to receive full capacity, depending your charging source. When the battery is fully charging the icon is solid.

At 25% charge the icon begins to flash indicating a recharge is required.

The battery can provide up to 6 hours playing time, depending on the chanters settings.

The display intensity, pitch change all effect the length of battery power. To recharge the chanter, insert the USB cable into a USB socket (100mA preferred), and for maximum charge leave for 3-4 hours. Do not leave the battery fully discharged for a period of time, it may effect the battery life. The Chanter can also be powered from portable battery packs, as used by smartphones.

Installing additional instruments and software

The Blair Digital Chanter™ PC App allows the BDC to store 9 instruments in total.
This means 3 default and 6 of your choosing. The Blair Bagpipes App which connects a PC to the Chanter for transferring the files.

To install additional instruments and firmware;
1. Download and install the Blair Bagpipes App for Mac or Windows www.blairbagpipes.com
2. Download the Instrument or firmware file, prefixed '.bdc' and load into the Blair Bagpipes App.
3. Connect the supplied USB cable to the chanter and PC, launch the PC app.
4. On the Chanter, go to the Updater menu and press enter. Advanced > Updater > Enter
5. The app window displays your chanters serial number and the bdc files about to be loaded.
6. Press 'Update Chanter' and wait for confirmation.

The picture adjacent displays 5 instruments loaded, noting that the Bb Ptc Jt file requires 2 memory slots

Blair Digital Chanter specifications
• Genuine, authentic high definition Bagpipe sounds**.**
•Sound library (up to 9 instruments) 3 Default + 6 User, dependent on file size and extended scale.
Default Instruments
• Highland Bagpipes, C, F Natural, Piob HG and Vibrato
• Scottish Smallpipes in A
• Practice Chanter
• EQ: Bass & Treble (+/- 8dB)
• Pitch range: 400.0 – 499.9 Hz
• Metronome x 8 beat patterns
• Pan (all instruments)
• Reverb
• MIDI connectivity: inbuilt USB-MIDI interface
• MIDI Grace note data transmittible.
• Input: 1x USB, used for both MIDI and recharging
• USB output: 1x USB
• Audio output: Stereo 1x 3.5mm (male)
• Power: Rechargeable lithium-ion battery via USB port.
• Dimensions: 54.3cm x 4.5cm, 204 grams

Accessories
• **Cut-off Pedal** - a stereo foot pedal which mutes the output of the chanters sound. No hands required, easy to connect for total control of when to start and stop. No need to remove fingers from chanter.

The cut-off pedal is connected to the Audio out of the chanter and placed inline to your speaker. It is a noiseless switch that doesn't introduce a click/ pop when activated and the chanter remains switched on.

• **Bagpipe adapter** - converts your own bagpipe into a digital instrument. It includes an inverted stock which can be inserted into a regular pipe bag, a spigot which replaces the BDC mouthpiece.

• **Ergo Pipe Bag** form fitting - Ergonomically designed and molded for comfort on the side of your body. This strong foam BDC pipe bag is designed for comfort and playability with curvature on the side of the bag that conforms to the players rib cage. The bag includes a Bagpipe adapter, pipe bag cover.
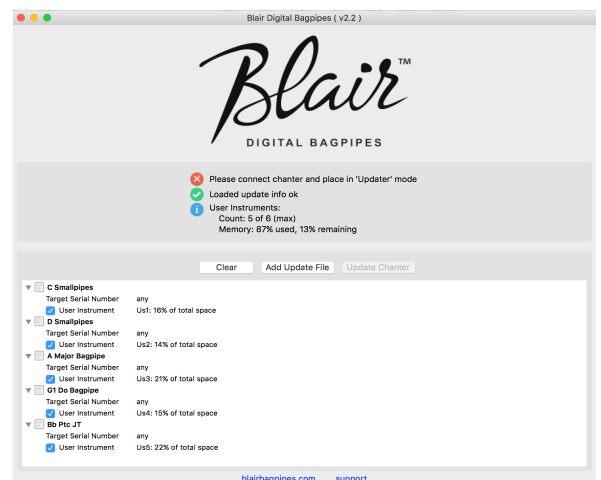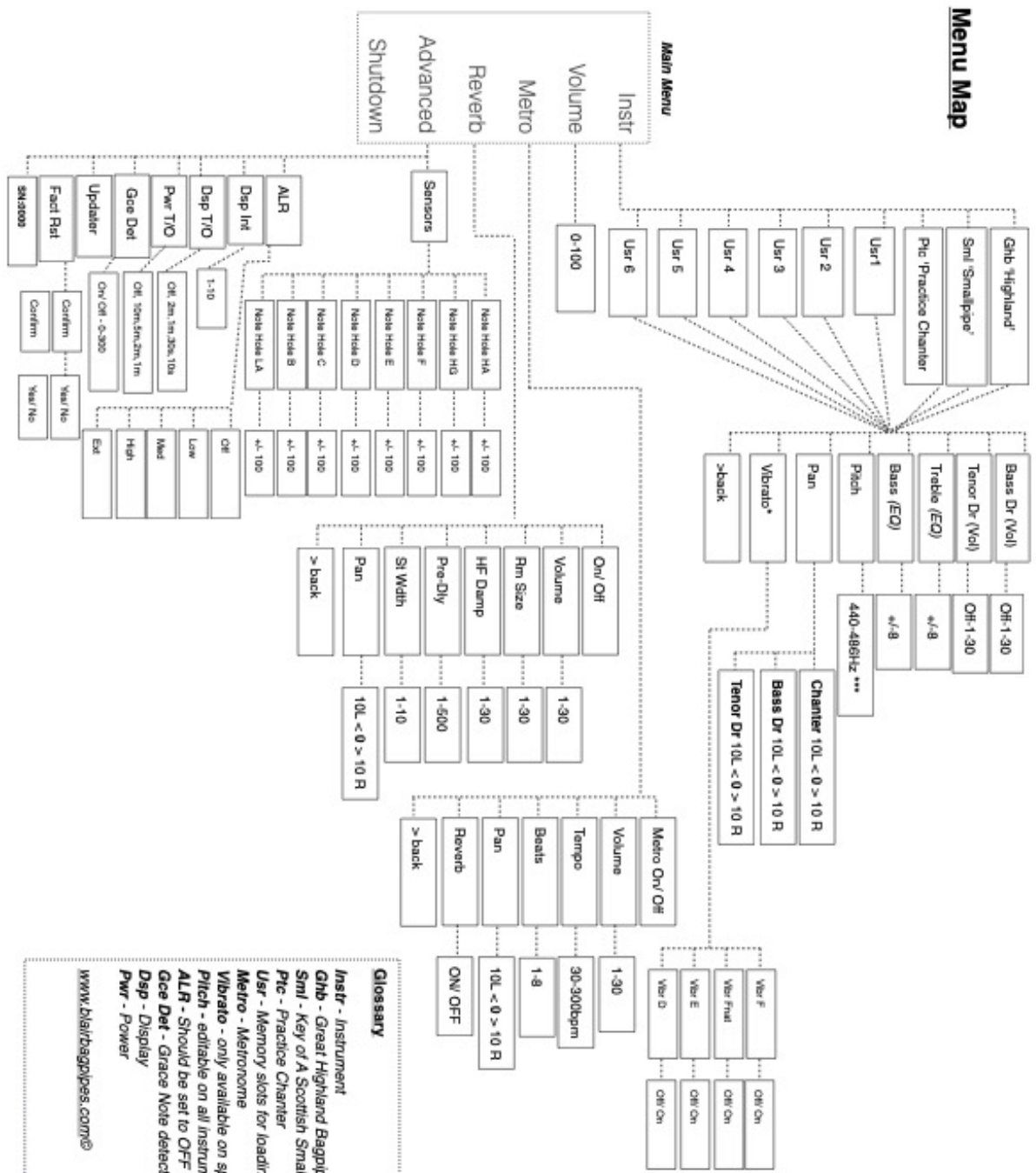

The Blair™ Digital Chanter complies to FCC and CE Class B regulations

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For support or questions visit www.blairbagpipes.com/support

Or visit www.blairbagpipes.com/contact

Menu Map

Main Menu
- Instr
- Volume
- Metro
- Reverb
- Advanced
- Shutdown

Instr
- Ghb 'Highland'
- Sml 'Smallpipe'
- Ptc 'Practice Chanter'
- Usr1
- Usr 2
- Usr 3
- Usr 4
- Usr 5
- Usr 6

Instrument parameters:
- Bass Dr (Vol) — Off, 1-30
- Tenor Dr (Vol) — Off, 1-30
- Treble (EQ) — +/-8
- Bass (EQ) — +/-8
- Pitch — 440-486Hz ***
- Pan — Chanter 10L < 0 > 10 R; Bass Dr 10L < 0 > 10 R; Tenor Dr 10L < 0 > 10 R
- Vibrato* — Vbr D, Vbr E, Vbr Fnat, Vbr F (Off/On)
- >back

Volume
- 0-100

Metro
- Metro On/Off — ON/OFF
- Volume — 1-30
- Tempo — 30-300bpm
- Beats — 1-8
- Pan — 10L < 0 > 10 R
- Reverb — ON/OFF
- >back

Reverb
- On/Off
- Volume — 1-30
- Rm Size — 1-30
- HF Damp — 1-500
- Pre-Dly — 1-10
- St Wdth
- Pan — 10L < 0 > 10 R
- >back

Advanced
- Sensors
  - Note Hide HA — +/- 100
  - Note Hide HG — +/- 100
  - Note Hide F — +/- 100
  - Note Hide E — +/- 100
  - Note Hide D — +/- 100
  - Note Hide C — +/- 100
  - Note Hide B — +/- 100
  - Note Hide LA — +/- 100
- ALR — Off, Low, Med, High, Ext
- Dsp Int — 1-10
- Dsp T/O — Off, 2m,1m,30s,10s
- Pwr T/O — Off, 10m,5m,2m,1m
- Gce Det — On/Off - 0-300
- Updater — Confirm — Yes/No
- Fact Rst — Confirm — Yes/No
- SN:0000

Glossary
Instr - Instrument
Ghb - Great Highland Bagpipe
Sml - Key of A Scottish Smallpipe
Ptc - Practice Chanter
Usr - Memory slots for loading additional instruments
Metro - Metronome
Vibrato - only available on specified instruments
Pitch - editable on all instruments
ALR - Should be set to OFF unless outdoors
Gce Det - Grace Note detection (MIDI)
Dsp - Display
Pwr - Power

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