

WAVE

Legendary 8-Voice Multi-Timbral Hybrid Synthesizer with Wavetable Generators and Analog VCF and VCA, LFO, 3 Envelopes, Arpeggiator and Sequencer

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EN Important Safety Instructions



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

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



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.



Caution

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



Caution

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



Caution

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



Warning

Please refer to the information on the exterior of bottom enclosure for electrical and safety information before installing or operating the device.

1. Please read and follow all instructions and warnings.
2. Keep the apparatus away from water (except for outdoor products).
3. Clean only with dry cloth.
4. Do not block ventilation openings. Do not install in a confined space. Install only according to manufacturer's instructions.
5. Protect the power cord from damage, particularly at plugs and appliance socket.
6. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.

7. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other (only for USA and Canada). A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

8. Use only attachments and accessories recommended by the manufacturer.



9. Use only specified carts, stands, tripods, brackets, or tables. Use caution to prevent tip-over when moving the cart/apparatus combination.

10. Unplug during storms, or if not in use for

a long period.

11. Only use qualified personnel for servicing, especially after damage.

12. The apparatus with protective earthing terminal shall be connected to a MAINS socket outlet with a protective earthing connection.

13. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

14. Avoid installing in confined spaces like bookcases.

15. Do not place naked flame sources, such as lighted candles, on the apparatus.

16. Operating temperature range 5° to 45°C (41° to 113°F).

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ES Instrucciones de seguridad



Las terminales marcadas con este símbolo transportan corriente eléctrica de magnitud suficiente como para constituir un riesgo de descarga eléctrica. Utilice solo cables de altavoz profesionales y de alta calidad con conectores TS de 6,3 mm o de bayoneta prefijados. Cualquier otra instalación o modificación debe ser realizada únicamente por un técnico cualificado.



Este símbolo, siempre que aparece, le advierte de la presencia de voltaje peligroso sin aislar dentro de la caja; este voltaje puede ser suficiente para constituir un riesgo de descarga.



Este símbolo, siempre que aparece, le advierte sobre instrucciones operativas y de mantenimiento que aparecen en la documentación adjunta. Por favor, lea el manual.



Atención

Para reducir el riesgo de descarga eléctrica, no quite la tapa (o la parte posterior). No hay piezas en el interior del equipo que puedan ser reparadas por el usuario. Si es necesario, póngase en contacto con personal cualificado.



Atención

Para reducir el riesgo de incendio o descarga eléctrica, no exponga este aparato a la lluvia, humedad o alguna otra fuente que pueda salpicar o derramar algún líquido sobre el aparato. No coloque ningún tipo de recipiente para líquidos sobre el aparato.



Atención

Las instrucciones de servicio deben llevarlas a cabo exclusivamente personal cualificado. Para evitar el riesgo de una descarga eléctrica, no realice reparaciones que no se encuentren descritas en el manual de operaciones. Las reparaciones deben ser realizadas exclusivamente por personal cualificado.



Advertencia

Consulte la información en el exterior del recinto inferior para obtener información eléctrica y de seguridad antes de instalar u operar el dispositivo.

1. Por favor, lea y siga todas las instrucciones y advertencias.
2. Mantenga el aparato alejado del agua (excepto para productos diseñados para uso en exteriores).
3. Limpie solo con un paño seco.
4. No obstruya las aberturas de ventilación. No instale en un espacio confinado. Instale solo de acuerdo con las instrucciones del fabricante.

5. Proteja el cable de alimentación contra daños, especialmente en los enchufes y en el tomacorriente del aparato.
6. No lo instale cerca de fuentes de calor como radiadores, rejillas de calefacción, estufas u otros aparatos (incluyendo amplificadores) que generen calor.
7. No anule el propósito de seguridad del enchufe polarizado o del tipo con toma de tierra. Un enchufe polarizado tiene dos clavijas, una más ancha que la otra (solo para EE. UU. y Canadá). Un enchufe con toma de tierra tiene dos clavijas y una tercera clavija de toma de tierra. La clavija ancha o la tercera clavija se proporcionan para su seguridad. Si el enchufe suministrado no encaja en su toma de corriente, consulte a un electricista para reemplazar la toma obsoleta.
8. Utilice solo accesorios y accesorios recomendados por el fabricante.



9. Utilice solo carritos, soportes, trípodes, soportes o mesas especificados. Tenga cuidado para evitar que el carro/ combinación de aparatos se vuelque al moverlo.

10. Desenchufe durante tormentas o si no se utiliza durante un largo período.
11. Solo utilice personal cualificado para el servicio, especialmente después de daños.
12. El aparato con terminal de puesta a tierra protectora debe conectarse a un tomacorriente de red con una conexión de puesta a tierra protectora.
13. Cuando se utilice el enchufe de red o un acoplador de aparatos como dispositivo de desconexión, el dispositivo de desconexión debe seguir siendo fácilmente operable.
14. Evite la instalación en espacios confinados como estanterías.
15. No coloque fuentes de llama desnuda, como velas encendidas, en el aparato.
16. Rango de temperatura de funcionamiento de 5° a 45°C (41° a 113°F).

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FR Consignes de sécurité



Les points repérés par ce symbole portent une tension électrique suffisante pour constituer un risque d'électrocution.

Utilisez uniquement des câbles d'enceintes professionnels de haute qualité avec fiches Jack mono 6,35 mm ou fiches à verrouillages déjà installées. Toute autre installation ou modification doit être effectuée uniquement par un personnel qualifié.



Ce symbole avertit de la présence d'une tension dangereuse et non isolée à l'intérieur de l'appareil - elle peut provoquer des chocs électriques.



Ce symbol signale les consignes d'utilisation et d'entretien importantes dans la documentation fournie. Lisez les consignes de sécurité du manuel d'utilisation de l'appareil.



Attention

Pour éviter tout risque de choc électrique, ne pas ouvrir le capot de l'appareil ni démonter le panneau arrière. L'intérieur de l'appareil ne possède aucun élément réparable par l'utilisateur. Laisser toute réparation à un professionnel qualifié.



Attention

Pour réduire les risques de feu et de choc électrique, n'exposez pas cet appareil à la pluie, à la moisissure, aux gouttes ou aux éclaboussures. Ne posez pas de récipient contenant un liquide sur l'appareil (un vase par exemple).



Attention

Ces consignes de sécurité et d'entretien sont destinées à un personnel qualifié. Pour éviter tout risque de choc électrique, n'effectuez aucune réparation sur l'appareil qui ne soit décrite par le manuel d'utilisation. Les éventuelles réparations doivent être effectuées uniquement par un technicien spécialisé.



Avertissement

Veillez vous référer aux informations situées à l'extérieur du boîtier inférieur pour obtenir les renseignements électriques et de sécurité avant d'installer ou d'utiliser l'appareil.

1. Veuillez lire et suivre toutes les instructions et avertissements.
2. Éloignez l'appareil de l'eau (sauf pour les produits conçus pour une utilisation en extérieur).
3. Nettoyez uniquement avec un chiffon sec.
4. Ne bloquez pas les ouvertures de ventilation. N'installez pas dans un espace confiné. Installez uniquement selon les instructions du fabricant.
5. Protégez le cordon d'alimentation contre les dommages, en particulier au niveau des fiches et de la prise de l'appareil.
6. N'installez pas près de sources de chaleur telles que radiateurs, registres de chaleur, cuisinières ou autres appareils (y compris les amplificateurs) qui produisent de la chaleur.
7. Ne contrecarrez pas le but de sécurité de la fiche polarisée ou de type mise à la terre. Une fiche polarisée a deux lames, l'une plus large que l'autre (uniquement pour les États-Unis et le Canada). Une fiche de type mise à la terre a deux lames et une troisième broche de mise à la terre. La lame large ou la troisième broche sont fournies pour votre sécurité. Si la fiche fournie ne s'adapte pas à votre prise, consultez un électricien pour remplacer la prise obsolète.
8. Utilisez uniquement des accessoires et des pièces recommandés par le fabricant.



9. Utilisez uniquement des chariots, des supports, des trépieds, des supports ou des tables spécifiés. Faites attention pour éviter le renversement lors du déplacement de la

combinaison chariot/appareil.

10. Débranchez pendant les tempêtes ou si l'appareil n'est pas utilisé pendant une longue période.
11. Utilisez uniquement du personnel qualifié pour l'entretien, surtout après des dommages.
12. L'appareil avec une borne de mise à la terre protectrice doit être connecté à une prise secteur avec une connexion de mise à la terre protectrice.
13. Lorsque la fiche secteur ou un coupleur d'appareil est utilisé comme dispositif de déconnexion, le dispositif de déconnexion doit rester facilement utilisable.
14. Évitez l'installation dans des espaces confinés comme des bibliothèques.
15. Ne placez pas de sources de flamme nue, telles que des bougies allumées, sur l'appareil.
16. Plage de température de fonctionnement de 5° à 45°C (41° à 113°F).

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DE Wichtige Sicherheitshinweise



Die mit dem Symbol markierten Anschlüsse führen so viel Spannung, dass die Gefahr eines Stromschlags besteht. Verwenden Sie nur hochwertige, professionelle Lautsprecherkabel mit vorinstallierten 6,35 mm MONO-Klinkensteckern oder Lautsprecherstecker mit Drehverriegelung. Alle anderen Installationen oder Modifikationen sollten nur von qualifiziertem Fachpersonal ausgeführt werden.

Dieses Symbol weist Sie immer dann darauf hin, wenn es erscheint, dass im Inneren des Gehäuses gefährliche unisolierte Spannung vorhanden ist – eine Spannung, die ausreichend sein kann, um ein Stromschlagrisiko darzustellen.

Dieses Symbol weist Sie an jeder Stelle, an der es erscheint, auf wichtige Betriebs- und Wartungsanweisungen in der beiliegenden Literatur hin. Bitte lesen Sie die Bedienungsanleitung.

Vorsicht
Um eine Gefährdung durch Stromschlag auszuschließen, darf die Geräteabdeckung bzw. Geräterückwand nicht abgenommen werden. Im Innern des Geräts befinden sich keine vom Benutzer reparierbaren Teile. Reparaturarbeiten dürfen nur von qualifiziertem Personal ausgeführt werden.

Vorsicht
Um eine Gefährdung durch Feuer bzw. Stromschlag auszuschließen, darf dieses Gerät weder Regen oder Feuchtigkeit ausgesetzt werden noch sollten Spritzwasser oder tropfende Flüssigkeiten in das Gerät gelangen können. Stellen Sie keine mit Flüssigkeit gefüllten Gegenstände, wie z.B. Vasen, auf das Gerät.



Vorsicht

Die Service-Hinweise sind nur durch qualifiziertes Personal zu befolgen.

Um eine Gefährdung durch Stromschlag zu vermeiden, führen Sie bitte keinerlei Reparaturen an dem Gerät durch, die nicht in der Bedienungsanleitung beschrieben sind. Reparaturen sind nur von qualifiziertem Fachpersonal durchzuführen.



Warnung

Bitte beachten Sie die Informationen auf der Außenseite der unteren Abdeckung bezüglich elektrischer und sicherheitstechnischer Hinweise, bevor Sie das Gerät installieren oder in Betrieb nehmen.

1. Bitte lesen Sie alle Anweisungen und Warnhinweise sorgfältig durch und befolgen Sie diese.
2. Halten Sie das Gerät von Wasser fern (außer bei Produkten für den Außenbereich).
3. Reinigen Sie nur mit einem trockenen Tuch.
4. Blockieren Sie nicht die Belüftungsöffnungen. Installieren Sie das Gerät nicht in einem engen Raum und nur gemäß den Anweisungen des Herstellers.
5. Schützen Sie das Netzkabel vor Beschädigungen, insbesondere an Steckern und Gerätebuchsen.
6. Installieren Sie das Gerät nicht in der Nähe von Wärmequellen wie Heizkörpern, Heizregistern, Öfen oder anderen Geräten (einschließlich Verstärkern), die Wärme erzeugen.
7. Heben Sie nicht den Sicherheitszweck des polarisierten oder geerdeten Steckers auf. Ein polarisierter Stecker hat zwei Klingen, von denen eine breiter ist als die andere (nur für USA und Kanada). Ein geerdeter Stecker hat zwei Klingen und einen dritten Erdungszapfen. Die breite Klinge oder der dritte Zapfen dienen Ihrer Sicherheit. Wenn der mitgelieferte Stecker nicht in Ihre Steckdose passt, konsultieren Sie einen Elektriker, um die veraltete Steckdose zu ersetzen.
8. Verwenden Sie nur vom Hersteller empfohlene Anbaugeräte und Zubehörteile.



9. Verwenden Sie nur spezifizierte Wagen, Ständer, Stative, Halterungen oder Tische. Achten Sie darauf, dass der Wagen/Geräte-Kombination beim Bewegen nicht umkippt.

10. Ziehen Sie bei Gewittern oder bei längerer Nichtbenutzung den Stecker.

11. Lassen Sie nur qualifiziertes Personal für Wartungsarbeiten arbeiten, besonders nach Beschädigungen.

12. Das Gerät mit schützendem Erdungsterminal muss an eine Steckdose mit schützender Erdungsverbindung angeschlossen werden.

13. Wenn der Netzstecker oder ein Gerätekuppler als Trennvorrichtung verwendet wird, muss die Trennvorrichtung leicht bedienbar bleiben.

14. Vermeiden Sie die Installation in engen Räumen wie Bücherregalen.

15. Platzieren Sie keine offenen Flammenquellen, wie brennende Kerzen, auf dem Gerät.

16. Betriebstemperaturbereich von 5° bis 45°C (41° bis 113°F).

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PT Instruções de Segurança Importantes



Terminais marcados com o símbolo carregam corrente elétrica de magnitude suficiente para constituir um risco de choque elétrico. Use apenas cabos de alto-falantes de alta qualidade com plugues TS de ¼" ou plugues com trava de torção pré-instalados. Todas as outras instalações e modificações devem ser efetuadas por pessoas qualificadas.

Este símbolo, onde quer que apareça, alerta para a presença de tensão perigosa não isolada dentro do invólucro - uma tensão que pode ser suficiente para constituir um risco de choque.

Este símbolo, onde quer que o encontre, alerta-o para a leitura das instruções de manuseamento que acompanham o equipamento. Por favor leia o manual de instruções.

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**Atenção**

De forma a diminuir o risco de choque eléctrico, não remover a cobertura (ou a secção de trás). Não existem peças substituíveis por parte do utilizador no seu interior. Para esse efeito recorrer a um técnico qualificado.

**Atenção**

Para reduzir o risco de incêndios ou choques eléctricos o aparelho não deve ser exposto à chuva nem à humidade. Além disso, não deve ser sujeito a salpicos, nem devem ser colocados em cima do aparelho objectos contendo líquidos, tais como jarras.

**Atenção**

Estas instruções de operação devem ser utilizadas, em exclusivo, por técnicos de assistência qualificados. Para evitar choques eléctricos não proceda a reparações ou intervenções, que não as indicadas nas instruções de operação, salvo se possuir as qualificações necessárias. Para evitar choques eléctricos não proceda a reparações ou intervenções, que não as indicadas nas instruções de operação. Só o deverá fazer se possuir as qualificações necessárias.

**Aviso**

Consulte as informações na parte externa do invólucro inferior para obter informações eléctricas e de segurança antes de instalar ou operar o dispositivo.

1. Por favor, leia e siga todas as instruções e advertências.
2. Mantenha o aparelho longe da água (exceto para produtos destinados a uso externo).
3. Limpe apenas com um pano seco.
4. Não obstrua as aberturas de ventilação. Não instale em espaços confinados. Instale apenas de acordo com as instruções do fabricante.
5. Proteja o cabo de alimentação contra danos, especialmente nos plugs e na tomada do aparelho.
6. Não instale próximo a fontes de calor, como radiadores, registros de calor, fogões ou outros aparelhos (incluindo amplificadores) que produzam calor.
7. Não desfaça a finalidade de segurança da tomada polarizada ou do tipo com aterramento. Uma tomada polarizada possui duas lâminas, sendo uma mais larga que a outra (apenas para EUA e Canadá). Uma tomada com aterramento possui duas lâminas e uma terceira ponta de aterramento. A lâmina larga ou a terceira ponta são fornecidas para sua segurança. Se o plug fornecido não se encaixa na sua tomada, consulte um electricista para substituir a tomada obsoleta.
8. Use apenas acessórios e equipamentos recomendados pelo fabricante.
9. Use apenas carrinhos, suportes, tripés, suportes ou mesas especificados. Tenha cuidado para evitar tombamentos ao mover a combinação carrinho/aparelho.

10. Desconecte durante tempestades ou se não estiver em uso por um longo período.

11. Use apenas pessoal qualificado para serviços, especialmente após danos.

12. O aparelho com terminal de aterramento protetor deve ser conectado a uma tomada de corrente com conexão de aterramento protetor.

13. Quando o plugue de corrente ou um acoplador de aparelho é usado como dispositivo de desconexão, o dispositivo de desconexão deve permanecer prontamente operável.

14. Evite instalar em espaços confinados, como estantes.

15. Não coloque fontes de chama nua, como velas acesas, no aparelho.

16. Faixa de temperatura de operação de 5° a 45°C (41° a 113°F).

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IT**Informazioni importanti**

I terminali contrassegnati da questo simbolo conducono una corrente elettrica di magnitudine sufficiente a costituire un rischio di scossa elettrica. Utilizzare solo cavi per altoparlanti professionali di alta qualità con jack sbilanciati da 6,35mm. o connettori con blocco a rotazione. Tutte le altre installazioni o modifiche devono essere eseguite esclusivamente da personale qualificato.



Questo simbolo, ovunque appaia, avverte della presenza di una tensione pericolosa non isolata all'interno dello chassis, tensione che può essere sufficiente per costituire un rischio di scossa elettrica.



Questo simbolo, ovunque appaia, segnala importanti istruzioni operative e di manutenzione nella documentazione allegata. Si invita a leggere il manuale.

**Attenzione**

Per ridurre il rischio di scosse elettriche, non rimuovere il coperchio superiore (o la sezione posteriore). All'interno non ci sono parti riparabili dall'utente. Per la manutenzione rivolgersi a personale qualificato.

**Attenzione**

Per ridurre il rischio di incendi o scosse elettriche, non esporre questo apparecchio a pioggia e umidità. L'apparecchio non deve essere esposto a gocciolio o schizzi di liquidi e nessun oggetto contenente liquidi, come vasi, deve essere collocato sull'apparecchio.

**Attenzione**

Queste istruzioni di servizio sono destinate esclusivamente a personale qualificato. Per ridurre il rischio di scosse elettriche non eseguire interventi di manutenzione diversi da quelli contenuti nel manuale di istruzioni. Le riparazioni devono essere eseguite da personale di assistenza qualificato.

**Avvertimento**

Consultare le informazioni sulla parte esterna dell'invólucro inferiore per ottenere informazioni elettriche e di sicurezza prima di installare o utilizzare il dispositivo.

1. Si prega di leggere e seguire tutte le istruzioni e gli avvertimenti.
2. Mantenere l'apparecchio lontano dall'acqua (tranne che per i prodotti destinati all'uso all'aperto).
3. Pulire solo con un panno asciutto.
4. Non ostruire le aperture di ventilazione. Non installare in spazi ristretti. Installare solo secondo le istruzioni del produttore.
5. Proteggere il cavo di alimentazione dai danni, soprattutto alle spine e alla presa dell'elettrodomestico.
6. Non installare vicino a fonti di calore come termosifoni, bocchette di calore, fornelli o altri apparecchi (compresi gli amplificatori) che producono calore.
7. Non eludere lo scopo di sicurezza della spina polarizzata o della spina con messa a terra. Una spina polarizzata ha due lame di cui una più larga dell'altra (solo per USA e Canada). Una spina con messa a terra ha due lame e una terza spina di messa a terra. La lama larga o la terza spina sono fornite per la vostra sicurezza. Se la spina fornita non si adatta alla vostra presa, consultare un elettricista per la sostituzione della presa obsoleta.
8. Utilizzare solo accessori e attrezzature raccomandati dal produttore.



9. Utilizzare solo carrelli, supporti, treppiedi, staffe o tavoli specificati. Prestare attenzione per evitare il ribaltamento durante lo spostamento della combinazione carrello/apparecchio.

10. Scollegare durante le tempeste o se non viene utilizzato per un lungo periodo.

11. Utilizzare solo personale qualificato per la manutenzione, specialmente dopo danni.

12. L'apparecchio con terminale di messa a terra protettiva deve essere collegato a una presa di corrente con connessione di messa a terra protettiva.

13. Se la spina di rete o un accoppiatore dell'elettrodomestico viene utilizzato come dispositivo di disconnessione, il dispositivo di disconnessione deve rimanere facilmente utilizzabile.

14. Evitare l'installazione in spazi ristretti come librerie.

15. Non posizionare fonti di fiamma nuda, come candele accese, sull'apparecchio.

16. Intervallo di temperatura di funzionamento da 5° a 45°C (da 41° a 113°F).

DISCLAIMER LEGALE

Music Tribe non si assume alcuna responsabilità per eventuali danni che possono essere subito da chiunque si affidi in tutto o in parte a qualsiasi descrizione, fotografia o dichiarazione contenuta qui. Specifiche tecniche, aspetti e altre informazioni sono soggette a modifiche senza preavviso. Tutti i marchi sono di proprietà dei rispettivi titolari. Midas, Klark Teknik, Lab Gruppen, Lake, Tannoy, Turbosound, TC Electronic, TC Helicon, Behringer, Bugera, Aston Microphones e Coolaudio sono marchi o marchi registrati di Music Tribe Global Brands Ltd. © Music Tribe Global Brands Ltd. 2024 Tutti i diritti riservati.

GARANZIA LIMITATA

Per i termini e le condizioni di garanzia applicabili e le informazioni aggiuntive relative alla garanzia limitata di Music Tribe, consultare online i dettagli completi su community.musictribe.com/support.

NL Belangrijke veiligheidsvoorschriften



Aansluitingen die gemerkt zijn met het symbool voeren een zodanig hoge spanning dat ze een risico vormen voor elektrische schokken. Gebruik uitsluitend kwalitatief hoogwaardige, in de handel verkrijgbare luidsprekerkabels die voorzien zijn van ¼" TS stekkers. Laat uitsluitend gekwalificeerd personeel alle overige installatie- of modificatiehandelingen uitvoeren.



Dit symbool waarschuwt u, waar het ook verschijnt, voor de aanwezigheid van ongeïsoleerde gevaarlijke spanning binnenin de behuizing – spanning die voldoende kan zijn om een risico op elektrische schokken te vormen.



Dit symbool wijst u altijd op belangrijke bedienings- en onderhoudsvoorschriften in de bijbehorende documenten.



Wij vragen u dringend de handleiding te lezen.



Attentie

Verwijder in geen geval de bovenste afdekking (van het achterste gedeelte) anders bestaat er gevaar voor een elektrische schok. Het apparaat bevat geen te onderhouden onderdelen. Reparatiewerkzaamheden mogen uitsluitend door gekwalificeerd personeel uitgevoerd worden.



Attentie

Om het risico op brand of elektrische schokken te beperken, dient u te voorkomen dat dit apparaat wordt blootgesteld aan regen en vocht. Het apparaat mag niet worden blootgesteld aan neerdruppelend of opspattend water en er mogen geen met water gevulde voorwerpen – zoals een vaas – op het apparaat worden gezet.



Attentie

Deze onderhoudsinstructies zijn uitsluitend bedoeld voor gekwalificeerd onderhoudspersoneel. Om elektrische schokken te voorkomen, mag u geen andere onderhoudshandelingen verrichten dan in de bedieningsinstructies vermeld staan. Reparatiewerkzaamheden mogen alleen uitgevoerd worden door gekwalificeerd onderhoudspersoneel.



Waarschuwing

Raadpleeg de informatie op de buitenkant van de onderste behuizing voor elektrische en veiligheidsinformatie voordat u het apparaat installeert of bedient.

1. Gelieve alle instructies en waarschuwingen zorgvuldig te lezen en op te volgen.
2. Houd het apparaat uit de buurt van water (behalve voor producten bedoeld voor gebruik buitenshuis).
3. Reinig alleen met een droge doek.
4. Blokkeer de ventilatieopeningen niet. Installeer niet

in een afgesloten ruimte. Installeer alleen volgens de instructies van de fabrikant.

5. Bescherm de voedingskabel tegen schade, vooral bij stekkers en het stopcontact van het apparaat.

6. Installeer niet in de buurt van warmtebronnen zoals radiatoren, warmte registers, fornuizen of andere apparaten (inclusief versterkers) die warmte produceren.

7. Hef het veiligheidsdoel van de gepolariseerde of geaarde stekker niet op. Een gepolariseerde stekker heeft twee pennen waarvan één breder is dan de andere (alleen voor de VS en Canada). Een geaarde stekker heeft twee pennen en een derde aardingspen. De brede pen of de derde pen zijn voor uw veiligheid. Als de meegeleverde stekker niet in uw stopcontact past, raadpleeg dan een elektricien om het verouderde stopcontact te vervangen.

8. Gebruik alleen accessoires en apparatuur die door de fabrikant worden aanbevolen.



9. Gebruik alleen gespecificeerde karren, stands, statieven, beugels of tafels. Wees voorzichtig om kantelen te voorkomen bij het verplaatsen van de kar/apparaatcombinatie.

10. Trek de stekker uit tijdens stormen of als het apparaat gedurende lange tijd niet wordt gebruikt.

11. Gebruik alleen gekwalificeerd personeel voor onderhoud, vooral na schade.

12. Het apparaat met een beschermende aardingsaansluiting moet worden aangesloten op een stopcontact met een beschermende aardingsverbinding.

13. Als de stekker van het stopcontact of een apparaatkoppeling als het ontkoppelingapparaat wordt gebruikt, moet het ontkoppelingapparaat gemakkelijk bedienbaar blijven.

14. Vermijd installatie in afgesloten ruimtes zoals boekenkasten.

15. Plaats geen open vlambronnen, zoals brandende kaarsen, op het apparaat.

16. Bedrijfstemperatuurbereik van 5° tot 45°C (41° tot 113°F).

WETTELIJKE ONTKENNING

Music Tribe aanvaardt geen aansprakelijkheid voor enig verlies dat kan worden geleden door een persoon die geheel of gedeeltelijk vertrouwt op enige beschrijving, foto of verklaring hierin. Technische specificaties, verschijningen en andere informatie kunnen zonder voorafgaande kennisgeving worden gewijzigd. Alle handelsmerken zijn eigendom van hun respectievelijke eigenaren. Midas, Klark Teknik, Lab Gruppen, Lake, Tannoy, Turbosound, TC Electronic, TC Helicon, Behringer, Bugera, Aston Microphones en Coolaudio zijn handelsmerken of gedeponeerde handelsmerken van Music Tribe Global Brands Ltd. © Music Tribe Global Brands Ltd. 2024 Alle rechten voorbehouden.

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BEPERKTE GARANTIE

Voor de toepasselijke garantievoorwaarden en aanvullende informatie met betrekking tot de beperkte garantie van Music Tribe, zie de volledige details online op community.musictribe.com/support.

SE Viktiga säkerhetsanvisningar



 Uttag markerade med symbolen leder elektrisk strömstyrka som är tillräckligt stark för att utgöra en risk för elchock. Använd endast högkvalitativa, kommersiellt tillgängliga högtalarkablar med förhandsinstallerade ¼" TS-kontakter. All annan installering eller modifikation bör endast utföras av kompetent personal.


 Denna symbol, var den än förekommer, varnar för närvaron av farlig, oisolerad spänning inuti höljet - spänning som kan vara tillräcklig för att utgöra en risk för stöt.

 Den här symbolen hänvisar till viktiga punkter om användning och underhåll i den medföljande dokumentationen. Var vänlig och läs bruksanvisningen.

 **Försiktighet**
Minska risken för elektriska stötar genom att aldrig ta av höljet upptill på apparaten (eller ta av baksidan). Inuti apparaten finns det inga delar som kan repareras av användaren. Endast kvalificerad personal får genomföra reparationer.

 **Försiktighet**
För att minska risken för brand och elektriska stötar ska apparaten skyddas mot regn och fukt. Apparaten går inte utsätts för dropp eller spill och inga vattenbehållare som vasar etc. får placeras på den.

 **Försiktighet**
Serviceinstruktionen är enbart avsedd för kvalificerad servicepersonal. För att undvika risker genom elektriska stötar, genomför inga reparationer på apparaten, vilka inte är beskrivna i bruksanvisningen. Endast kvalificerad fackpersonal får genomföra reparationerna.

 **Varning**
Vänligen se informationen på utsidan av bottenhöljet för elektrisk och säkerhetsinformation innan du installerar eller använder enheten.

1. Vänligen läs och följ alla instruktioner och varningar noggrant.

- Håll apparaten borta från vatten (utom för utomhusprodukter).
- Rengör endast med en torr trasa.
- Blockera inte ventilationsöppningarna. Installera inte i trånga utrymmen. Installera endast enligt tillverkarens anvisningar.
- Skydda nätkabeln från skador, särskilt vid kontakter och apparatkontakten.
- Installera inte nära värme källor som element, värmeregistrar, spisar eller andra apparater (inklusive förstärkare) som producerar värme.
- Förstör inte säkerhetsfunktionen hos den polariserade eller jordade kontakten. En polariserad kontakt har två blad varav ett är bredare än det andra (endast för USA och Kanada). En jordad kontakt har två blad och en tredje jordningsstift. Det breda bladet eller det tredje stiftet är till för din säkerhet. Om den medföljande kontakten inte passar i ditt uttag, kontakta en elektriker för att byta ut det föråldrade uttaget.

8. Använd endast tillbehör och tillbehör som rekommenderas av tillverkaren.



9. Använd endast specificerade vagnar, ställ, stativ, fästen eller bord. Var försiktig för att förhindra vältningsrisk när du flyttar vagnen/ apparatkombinationen.

10. Koppla ur under åskväder eller om enheten inte används under en längre tid.

11. Använd endast kvalificerad personal för service, särskilt efter skador.

12. Apparaten med skyddsjordanslutning ska anslutas till ett vägguttag med skyddsjordanslutning.

13. Om nätkontakten eller en apparatkoppling används som fränkopplingsanordning måste fränkopplingsanordningen vara lätt åtkomlig.

14. Undvik installation i trånga utrymmen som bokhyllor.

15. Placera inte öppna lågor, som tända ljus, på apparaten.

16. Driftstemperaturområde 5° till 45°C (41° till 113°F).

FRISKRIVNINGSKLAUSUL


Music Tribe tar inget ansvar för någon förlust som kan drabbas av någon person som helt eller delvis förlitar sig på någon beskrivning, fotografi eller uttalande som finns här. Tekniska specifikationer, utseenden och annan information kan ändras utan föregående meddelande. Alla varumärken tillhör respektive ägare. Midas, Klark Teknik, Lab Gruppen, Lake, Tannoy, Turbosound, TC Electronic, TC Helicon, Behringer, Bugera, Aston Microphones och Coolaudio är varumärken eller registrerade varumärken som tillhör Music Tribe Global Brands Ltd. © Music Tribe Global Brands Ltd. 2024 Alla Rättigheter reserverade.


BEGRÄNSAD GARANTI


För tillämpliga garantivillkor och ytterligare information om Music Tribes begränsade garanti, se fullständig information online på community.musictribe.com/support.


PL Ważne informacje o bezpieczeństwie





 Terminale oznaczone symbolem przenoszą wystarczająco wysokie napięcie elektryczne, aby stworzyć ryzyko porażenia prądem. Używaj wyłącznie wysokiej jakości fabrycznie przygotowanych kabli z zainstalowanymi wtyczkami ¼" TS. Wszystkie inne instalacje lub modyfikacje powinny być wykonywane wyłącznie przez wykwalifikowany personel techniczny.

 Ten symbol, gdziekolwiek się pojawi, informuje Cię o obecności niez izolowanego niebezpiecznego napięcia wewnątrz obudowy - napięcia, które może stanowić ryzyko porażenia.

 Ten symbol informuje o ważnych wskazówkach dotyczących obsługi i konserwacji urządzenia w dołączonej dokumentacji. Proszę przeczytać stosowne informacje w instrukcji obsługi.

 **Uwaga**
W celu wyeliminowania zagrożenia porażenia prądem zabrania się zdejmowania obudowy lub tylnej ścianki urządzenia. Elementy znajdujące się we wnętrzu urządzenia nie mogą być naprawiane przez użytkownika. Naprawy mogą być wykonywane jedynie przez wykwalifikowany personel.

 **Uwaga**
W celu wyeliminowania zagrożenia porażenia prądem lub zapalenia się urządzenia nie wolno wystawiać go na działanie deszczu i wilgotności oraz dopuszczać do tego, aby do wnętrza dostała się woda lub inna ciecz. Nie należy stawiać na urządzeniu napelnionych cieżką przedmiotów takich jak np. wazony lub szklanki.

 **Uwaga**
Prace serwisowe mogą być wykonywane jedynie przez wykwalifikowany personel. W celu uniknięcia zagrożenia porażenia prądem nie należy wykonywać żadnych manipulacji, które nie są opisane w instrukcji obsługi. Naprawy wykonywane mogą być jedynie przez wykwalifikowany personel techniczny.

**Ostrzeżenie**

Przed zainstalowaniem lub uruchomieniem urządzenia prosimy zwrócić uwagę na informacje umieszczonej na zewnętrznej części dolnej obudowy dotyczącej informacji elektrycznych i bezpieczeństwa.

1. Proszę przeczytać i ściśle przestrzegać wszystkich instrukcji i ostrzeżeń.
2. Trzymaj urządzenie z dala od wody (z wyjątkiem produktów przeznaczonych do użytku na zewnątrz).
3. Czyść tylko suchą szmatką.
4. Nie blokuj otworów wentylacyjnych. Nie instaluj w zamkniętym miejscu. Instaluj tylko zgodnie z instrukcjami producenta.
5. Zabezpiecz przewód zasilający przed uszkodzeniem, zwłaszcza przy wtyczkach i gnieździe urządzenia.
6. Nie instaluj w pobliżu źródeł ciepła, takich jak grzejniki, rejestratory ciepła, kuchenki lub inne urządzenia (w tym wzmacniacze), które generują ciepło.
7. Nie unieważniaj celu bezpieczeństwa wtyczki spolaryzowanej lub wtyczki z uziemieniem. Wtyczka spolaryzowana ma dwie wtyczki, z których jedna jest szersza niż druga (tylko dla USA i Kanady). Wtyczka z uziemieniem ma dwie wtyczki i trzeci bolc uziemiający. Szeroka wtyczka lub trzeci bolc są dostarczone dla Twojego bezpieczeństwa. Jeśli dostarczona wtyczka nie pasuje do Twojego gniazdka, skonsultuj się z elektrykiem w celu wymiany przestarzałego gniazdka.
8. Używaj tylko akcesoriów i dodatków zalecanych przez producenta.



9. Używaj tylko określonych wózków, stojaków, statywów, uchwytów lub stolików. Uważaj, aby uniknąć przewrócenia wózka/kombinacji urządzenia podczas przemieszczania.

10. Odłączaj w czasie burz lub jeśli urządzenie nie jest używane przez długi okres.
11. Korzystaj tylko z kwalifikowanego personelu do serwisowania, zwłaszcza po uszkodzeniach.
12. Urządzenie z zabezpieczonym terminalem uziemiającym powinno być podłączone do gniazdka sieciowego z połączeniem ochronnym.
13. Jeśli wtyczka sieciowa lub złącze urządzenia jest używane jako urządzenie odłączające, urządzenie odłączające powinno pozostać łatwo dostępne.
14. Unikaj instalacji w zamkniętych miejscach, takich jak biblioteczki.
15. Nie umieszczaj źródeł otwartego ognia, takich jak palące się świece, na urządzeniu.
16. Zakres temperatury pracy od 5° do 45°C (od 41° do 113°F).

ZASTRZEŻENIA PRAWNE

Music Tribe nie ponosi odpowiedzialności za jakiegokolwiek straty, które mogą ponieść osoby, które polegają w całości lub w części na jakimkolwiek opisie, fotografii lub oświadczeniu zawartym w niniejszym dokumencie. Specyfikacje techniczne, wygląd i inne informacje mogą ulec zmianie bez powiadomienia. Wszystkie znaki towarowe są własnością ich odpowiednich właścicieli. Midas, Klark Teknik, Lab Gruppen, Lake, Tannoy, Turbosound, TC Electronic, TC Helicon, Behringer, Bugera, Aston Microphones i Coolaudio są znakami towarowymi lub zastrzeżonymi znakami towarowymi firmy Music Tribe Global Brands Ltd. © Music Tribe Global Brands Ltd. 2024 Wszystkie prawa zastrzeżone.

OGRANICZONA GWARANCJA

Aby zapoznać się z obowiązującymi warunkami gwarancji i dodatkowymi informacjami dotyczącymi ograniczonej gwarancji Music Tribe, zapoznaj się ze wszystkimi szczegółami w trybie online pod adresem community.musictribe.com/support.

JP 安全にお使いいただくために

感電の恐れがありますので、カバーやその他の部品を取り外したり、開けたりしないでください。高品質なプロ用スピーカーケーブル (1/4" TS 標準ケーブルおよびツイスト ロッキング プラグケーブル) を使用してください。



このシンボルは、どこに現れても、筐体内部に絶縁のない危険な電圧が存在しており、これは感電の危険性を構成する可能性があることを示しています。



火事および感電の危険を防ぐため、本装置を水分や湿気のあるところには設置しないで下さい。装置には決して水分がかからないように注意し、花瓶など水分を含んだものは、装置の上には置かないようにしてください。



注意
このマークが表示されている箇所には、内部に高圧電流が生じています。手を触れると感電の恐れがあります。

**注意**

取り扱いとお手入れの方法についての重要な説明が付属の取扱説明書に記載されています。ご使用前に良くお読みください。

**注意**

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**警告**

デバイスの取り付けまたは操作を行う前に、電気および安全に関する情報については、底部の外装に記載されている情報を参照してください。

1. すべての指示と警告を注意深く読み、従ってください。
2. 装置を水から離してください (屋外用の製品を除く)。
3. 乾いた布でしか清掃しないでください。
4. 換気口を塞がないでください。密閉されたスペースには取り付けしないでください。必ず製造元の指示に従って取り付けしてください。
5. 電源コードを特にプラグやアプライアンスの差込口に損傷から守ってください。
6. 暖房器、ヒーター、ストーブ、アンプなど発熱する機器の近くには取り付けしないでください。
7. 偏光または接地型プラグの安全目的を妨げないでください。偏光プラグは片方がもう一方より幅が広いものです (アメリカとカナダ専用)。接地型プラグは二本の刃と三本目のアースプラグがついています。幅の広い刃または三本目のプラグは安全のために設けられています。提供されたプラグがコンセントに合わない場合は、電気技師に相談して陳腐化したコンセントを交換してください。
8. 製造元が推奨するアタッチメントやアクセサリだけを使用してください。



9. 指定されたカート、スタンド、三脚、ブラケット、またはテーブルだけを使用してください。カート/装置の組み合わせを移動する際には倒れないように注意してください。

10. 嵐時や長期間使用しない場合はプラグを抜いてください。
11. 特に損傷後は、修理には資格のある専門家を利用してください。

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12. 保護アース端子のある装置は、保護アース接続のあるメインの電源コンセントに接続してください。

13. メインプラグまたはアプライアンスコブラが切断装置として使用される場合、切断装置は操作可能でなければなりません。

14. 書棚などの密閉された空間には設置しないでください。

15. ろうそくなどの明火を装置に置かないでください。

16. 動作温度範囲は 5° から 45°C までです (41° から 113°F)。

法的放棄

ここに含まれる記述、写真、意見の全体または一部に依拠して、いかなる人が損害を生じさせた場合にも、Music Tribe は一切の賠償責任を負いません。技術仕様、外観およびその他の情報は予告なく変更になる場合があります。商標はすべて、それぞれの所有者に帰属します。Midas, Klark Teknik, Lab Gruppen, Lake, Tannoy, Turbosound, TC Electronic, TC Helicon, Behringer, Bugera, Aston Microphones および Coolaudio は Music Tribe Global Brands Ltd. の商標または登録商標です。© Music Tribe Global Brands Ltd. 2024 無断転用禁止。

限定保証

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CN 重要的安全须知



产品输出端子带有此标志表示此端子具有大电流, 存在触电危险。仅限使用带有 ¼" TS 或扭锁式插头的高品质专业扬声器线。与这些端子连接的外部导线需要由经过指导的人员来安装和使用厂家提供的导线或指定的导线。



此标志提醒您, 产品内存在未绝缘的危险电压, 有触电危险。



此标志提醒您查阅所附的重要的使用及维修说明。请阅读有关手册。



小心

为避免着火或触电危险, 请勿将此产品置于雨淋或潮湿中。此产品也不可受液体滴溅, 盛有液体的容器也不可置于其上, 如花瓶等。



小心

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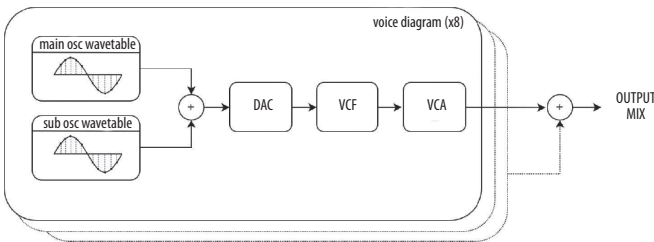
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About this manual

This manual offers a comprehensive guide to the Wave synthesizer, detailing its functionality and features. Additionally, it includes a brief introduction to wavetable synthesis, providing insight into the theory behind this synthesis method. We highly recommend reading through this manual to fully acquaint yourself with the controls and enhance your experience with the instrument.

Introduction

The Wave is an 8-voice hybrid wavetable synthesizer that combines digital and analog sound generation techniques to deliver rich and complex sounds. Unlike conventional analog synthesizers that rely on voltage-controlled oscillators, The Wave employs digitally crafted waveforms housed in wavetables for sound generation. Each voice in this system is composed of a pair of oscillators, the main and the sub. These oscillators are combined and then transformed into analog signals via a Digital-to-Analog Converter (DAC). Following this conversion, the signal is directed through a Voltage-Controlled Filter (VCF) and a Voltage-Controlled Amplifier (VCA), completing the sound production process.

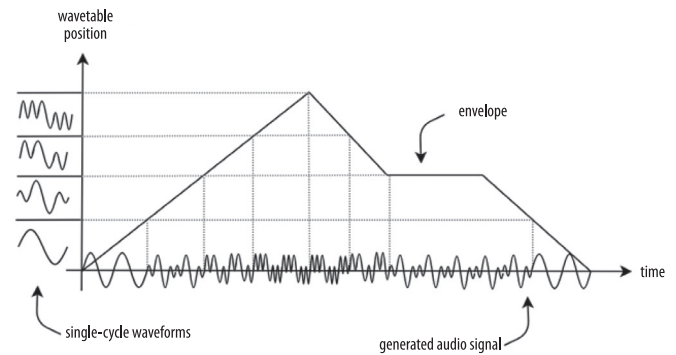


To further enhance sound design capabilities, the Wave includes a comprehensive modulation matrix, three envelope generators, and a low-frequency oscillator with four waveforms and adjustable delay. Creative possibilities are expanded with an extensive set of keyboard modes and split points, allowing the synth to be used in standard 8-voice polyphony, unison, or bi-timbral configurations with a layered keyboard.

The Wave offers 30 factory wavetables and 64 user-defined wavetables, each containing 64 waveforms. Additionally, there are 32 slots available for user-defined transients. Both user-defined wavetables and transients can be downloaded using the SynthTribe app.

How Wavetable synthesis works

Wavetable synthesis is a digital sound generation technique based on the periodic reproduction of single-cycle waveforms. Introduced for the first time in the eighties and pioneered by artists such as Depeche Mode, Tangerine Dream and Tears for Fears, wavetable synthesis is widely used today by musicians and sound designers for the versatility it offers. In a wavetable synthesizer, single-cycle waveforms are stored in tables called wavetables. What sets wavetable synthesis apart from other generation techniques is the ability to sweep through the wavetable, generating complex, evolving sounds. Like any other modulation destination, wavetable sweeping can be controlled by various modulation sources such as envelopes and LFOs, expanding the sonic possibilities. The image graphically depicts how the output sound changes when sweeping the wavetable using a four-stage ADSR envelope. For the sake of simplicity, a wavetable with four waveforms is considered.



When transitioning from one waveform to the next, artifacts can be generated due to phase discontinuities between waveforms resulting in abrupt transitions. This characteristic is typical of the first wavetable synthesizers and contributes to their distinctive sound. The Wave offers the option to reduce these artifacts through the Osc setting in the User menu. With this setting engaged, the adjacent waveforms are morphed together resulting in smoother transitions.

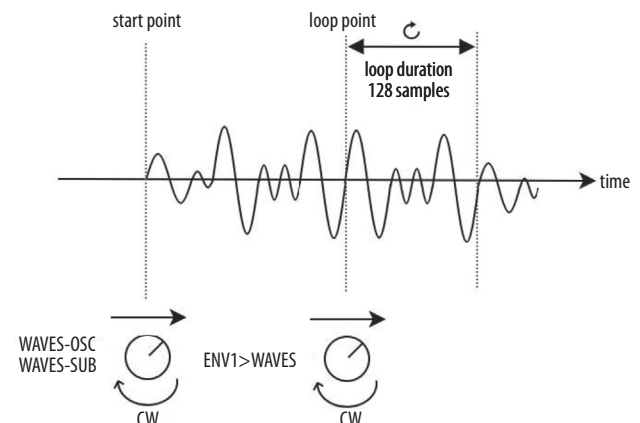
Each of the Wave synthesizer wavetables contains 64 single cycle waveforms. In each wavetable the last four waveforms emulate the typical analog waveforms: Sawtooth, pulse, square and triangle. In addition to the envelope, the waveform position can be further modulated by many sources including the LFO, Aftertouch, Modulation wheel, Pitch wheel, expression pedal and keyboard, further extending the expressiveness of the instrument. The Wave also offers the possibility to store and reproduce up to 32 transient sounds, adding to its sonic capabilities.

Each voice consists of two independent oscillators, one main oscillator and a secondary sub oscillator. The position of each oscillator inside the wavetable can be controlled using the Waves-Osc and Waves-Sub controls. When sweeping through the wavetable the sub oscillator waveform can be set to run in parallel with the main oscillator or to be manually controlled.

In addition to the wavetable selected from the Program menu, each program has an additional wavetable called the Upper wavetable, which can be enabled via the UW option in the Digital menu. These two wavetables are linked in a looping sequence, meaning that when any modulation source exceeds the wavetable lower or upper limits, the upper wavetable will become audible.

Working with transients

The Wave also supports transient sounds, which are short audio samples you can import using the SynthTribe app. When a transient slot is selected from the Program menu, the WAVE text is replaced with TRAN. In this mode, Waves-Osc and Waves-Sub set the start points for the main and sub oscillators, while ENV1>WAVES sets the loop point for both oscillators. The loop size is fixed to 128 samples. For information on how to import custom transients, please refer to the section "User Waves and Transients".



Preset Wavetables and Transients

As mentioned in the introduction the Wave comes with 30 preset wavetables and one preset transient. In addition to this a number of the user defined slots have wavetables in them from the factory, which can be overwritten if required. The preset wavetables are:

No	Name	Description
0	Harmonic Bliss	This wavetable features pronounced harmonics ranging from 1 to 8, mimicking the behavior of a resonant filter. The waveform corresponding to wave number 00 is a pure sine wave.
1	Harmonic Bliss2	This wavetable boasts enhanced higher harmonics alongside a dual virtual analog filter (VCF) simulation.
2	Bells	Extending the features of the previous wavetables, this one is particularly suited for producing vibes, bells, and tubular bell sounds.
3	WindSweep ResoFlute	Offering a sine-to-rectangular sweep and a low-resonance virtual analog filter (VCF) simulation, this wavetable is optimized for creating clarinet and flute-like tones
4	Churchy	Waves 00-47 exhibit progressively escalating high harmonics, each with increasing amplitudes. Waves 47-59 continue this trend at an accelerated pace. Additionally, this wavetable lends itself well to creating delay effects and evoking the resonance of church bells.
5	Harmonic MixBlend	This wavetable accentuates very high harmonics, delivering effects akin to wavetable 016 but with a more blended, mixture-like character.
6	WoodwindSweep ResoVibe	Featuring a sine-to-ramp sweep and subtle low-resonance virtual analog filter (VCF) effects, this wavetable is well-suited for generating woodwind sounds.
7	SylvanSweep ResoWind	With a sine-to-ramp sweep and gentle low-resonance virtual analog filter (VCF) effects, this wavetable excels in producing woodwind-like timbres.
8	PercuStrings	This wavetable offers a highpass VCF simulation without resonance. Wave 00 exhibits minimal or absent fundamental frequencies, while Wave 25 features a maximum amplitude fundamental. Ideal for crafting dark percussive strings and bass tones with click-like attacks.
9	VoxEnsemble	Characterized by robust middle-range harmonics, these formants are well-suited for ring modulation and vocal-like textures.
10	Reso	Similar to wavetable 9.
11	Chiaroscuro	Featuring low formants, this wavetable ranges from dark (Wave 00) to bright (Wave 32) and back to dark (Wave 59).
12	SweepingHigh	This wavetable showcases sweeping high formants
13	HarmonicStrike	This wavetable features powerful high-order harmonics with a subdued fundamental, perfect for crafting bright percussive keyboard instrument sounds such as clavichord and harpsichord. Sweeping through the waves creates an amplitude modulation effect, with Wave 00 at maximum amplitude, Wave 24 at minimum amplitude, and Wave 59 back to maximum. For intriguing noise effects, experiment with significant detuning and dissonant low chords.
14	OrganicRegisters	Offering a variety of organ registers, including Sine, Hammond, Lowery, and Church organ tones.
15	HarmonicSaw Accordionizer	Harmonics 2 and 3 transition to a sawtooth sweep, ideal for generating harmonium, accordion, and harmonica-like sounds
16	SweepFrenzy	Sweeping this wavetable results in wild amplitude modulation effects, featuring multiple peaks and dips in amplitude.
17	Spectrum Shift	Wave 00 presents the fundamental and second harmonic, while Wave 14 features only the fundamental. Wave 40 showcases high harmonics, and Wave 59 returns to the fundamental alone.
18	Harmonic Sweep Oscillation	Sweeping this wavetable yields a high-low-high harmonic sweep effect.
19	ElectricP	Waves 00-32 consist of static waveforms with prominent upper harmonics resembling strings, accompanied by a few lower harmonics. Wave 59 lacks a fundamental frequency.
20	Robotic	This wavetable facilitates rapid, discrete alterations between low and high harmonics, ideal for achieving sample and hold effects. Wave 00 begins with a sine wave.
21	StrongHrm	Transitioning from a sine wave to high-frequency formants.
22	EchoScape Spectrum	Tailored for echoing effects, this wavetable offers waveforms ranging from the original attack plus one delay to two colored delays. Wave 00 starts with a sine wave.
23	HighHarmonic Emphasis	Prominent high harmonics
24	Organic Ascend Sweep	Static organ-like tones. When swept, creates ascending high harmonic sweeps.
25	EchoColor Spectrum Shift	Waves 59 to 49 transition from bright to sine wave. Waves 48 to 33 feature a colored delay, while Waves 33 to 18 are sine waves. Waves 17 to 00 incorporate a colored delay echo.
26	BrassForm SawVariants	Various iterations of sawtooth waves characterized by robust, bright formants, perfect for brass-like timbres.
27	VoxForm	Formant sweeps enable the creation of vocal and choir sounds when controlled by a keyboard.
28	PhaseString Ensemble	Sawtooth waves with phasing, ideal for ensemble string sounds.
29	PulseShift Modulation	Transitioning from square to rectangular to narrow pulse waves, with sweeps producing pulse-width modulation effects.
30	Upper Wavetable	

The Wave is shipped with additional wavetables in slots 64 – 83, which can be over-written using SynthTribe:

No	Name	Description
64	Pipes Xfade	Crossfade of two Church Organ Pipe Waveforms
65	PD_Saw PWM	SAW Waveshaper
66	DX_Tubular	Famous DX Tubular sound
67	DX_E.Guitar	Jazz Guitar
68	DX_FullTine	Famous Full Tines Sound
69	Vibe-rant	Vibraphone Waveforms
70	DX_Bass	Digital Bass
71	StratoSweep	Crossfade of four digital synth waveforms
72	FormantPad	Rotating Phase Shifter
73	FairVox	Famous Fairlight Voices
74	SpaceSweep	Famous D50 Synth Sound
75	SoundTrack	LA Filter Sweep
76	PWMstringer	SAW+PWM_Square+Sub Juno Sound
77	Hoover	Juno 106 PWM
78	PD_Saw	CZ Phase Distortion SAW
79	PD_SQU	CZ Phase Distortion SQU
80	PD_TPL	CZ Phase Distortion TRI Pulse
81	PD_DBL	CZ Phase Distortion Double Sine
82	PD_SPL	CZ Phase Distortion Sine Pulse
83	PD_RES	CZ Phase Distortion Resonant
84	Wurlli Wave	Electric Reed Piano
85	Rhodos	Electric Piano
86	Vorcode	Vocal Jam

The preset transients are:

No	Name	Description
31	PianoSaxo	Piano and Saxophone Sample
32	PanFlute	Wood Flute
33	Pizzi	String Section Pizzicato
34	Steel Guitar	Plugged Steel String
35	Elec. Cello	PM Solo String Sound
36	Xylophon	Xylophone with hard Mallet
37	Harp	Plugged Harp String
38	Pizzagogo	Famous D50 Sound
39	Soft Bell EP	PM Electric Piano
40	Medium EP	Medium Velocity EP Tone
41	Trumpet	Solo Trumpet Tone
42	Mute Trumpet	Muted Trumpet Tone
43	Duuhh	Scat Voices

Note that transients 32 – 38 can be over-written using SynthTribe.

Modulation Matrix

The Wave synthesizer offers a wide range of modulation options, providing the user with virtually infinite capabilities in terms of sound design. MAIN-OSC and SUB-OSC pitch, Waves, VCF, and VCA can be modulated through various settings accessible in the menus. The table below shows the modulation matrix. The types of modulation, and their options are discussed in Top Panel below; and in the Digital Menu section.

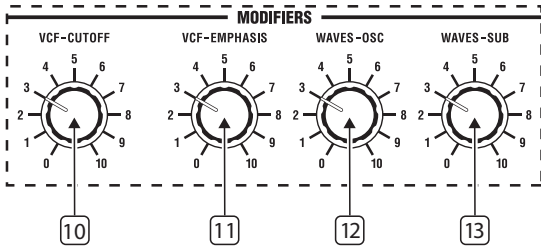
Destination / Source	Pitch Bend	Mod Wheel(1)	LFO(2)	KEY	Velocity	AF(3)	Exp Ped(4)	ENV1	ENV2	ENV3
MAIN-OSC PITCH	x		x							x
SUB-OSC PITCH	x		x							x
WAVES (MAIN and SUB)	x	x	x	x		x	x	x		x
Filter Cutoff	x	x	x	x	x	x	x	x		
Loudness			x	x	x	x	x		x	
Filter emphasis		x					x			

(1) & (2) Modulation wheel can be either used as a direct source of modulation or to control the amount of modulation by the LFO.

(3) After touch must be enabled in the User menu (setting TOUCH).

(4) The Expression Pedal can be assigned to directly modulate these parameters. If it is set to EXP:5, it will have the same effect as turning the MOD wheel.

Modifiers

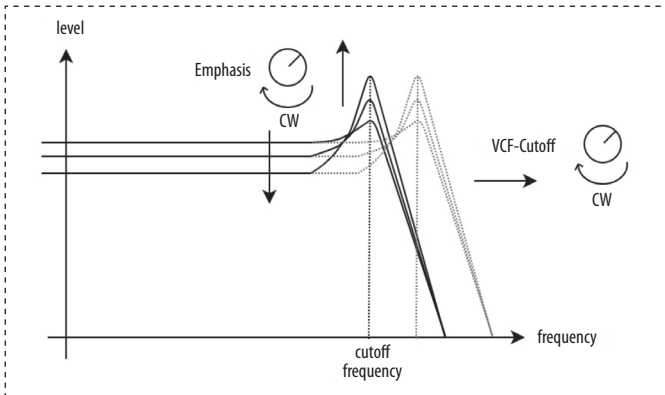


- 10 **VCF Cutoff** – controls the cutoff frequency of the low pass filter.
- 11 **VCF Emphasis** – controls the resonance of the filter.

Each of the voices of the Wave synthesizer is equipped with a 24dB per octave voltage-controlled low-pass filter, based on the reproduction of the SSM2044 chip.

The VCF-Cutoff knob sets the filter cutoff frequency: frequencies below this threshold pass unchanged, while frequencies above it are attenuated. Turning the VCF-Cutoff knob clockwise increases the cutoff frequency, so when the knob is turned fully clockwise, the sound passes unchanged.

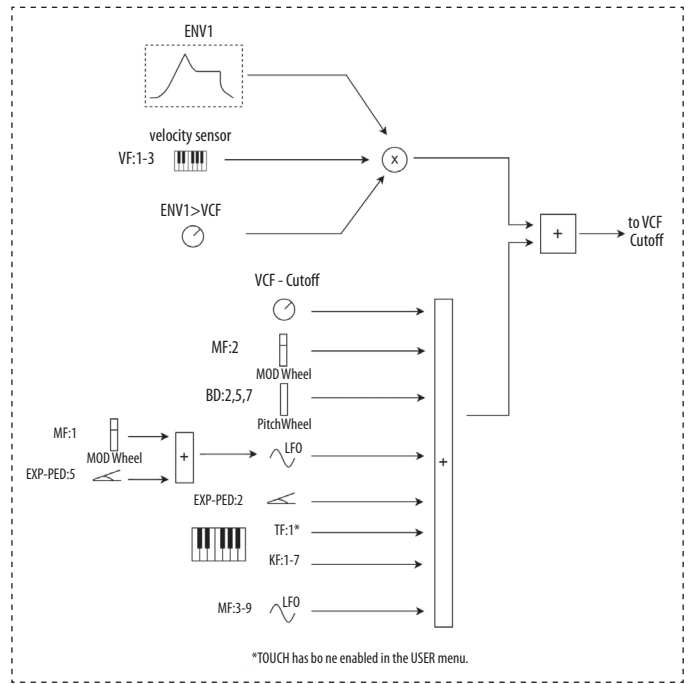
The Emphasis control adjusts the filter resonance, emphasizing the frequencies around the cutoff frequency set by the VCF-Cutoff knob. If the resonance is increased significantly, the filter will start to self-oscillate, generating a sine wave whose frequency depends on the VCF Cutoff. You can experiment the effect of the resonance by increasing the Emphasis knob. Setting the emphasis to values below 50%, produces the typical bright sound. Please note that one of the characteristics of the SSM2044 is the dependency between resonance and output signal level: as the resonance increases, the filter output level decreases. The operation of the filter is depicted in the image below.



Filter Modulation

Filter Cutoff frequency can be modulated by the following sources:

- Pitch bend (Option BD in Digital menu)
- Modulation Wheel (Option MF in Digital menu)
- Low Frequency Oscillator (Option MF in Digital menu)
- Keyboard (Option KF in Digital menu)
- Velocity (Option VF in Digital menu)
- Envelope 1 (Default)
- Expression Pedal (Option EXP-PED in USER menu)
- Channel Aftertouch (Option TL in Digital menu)



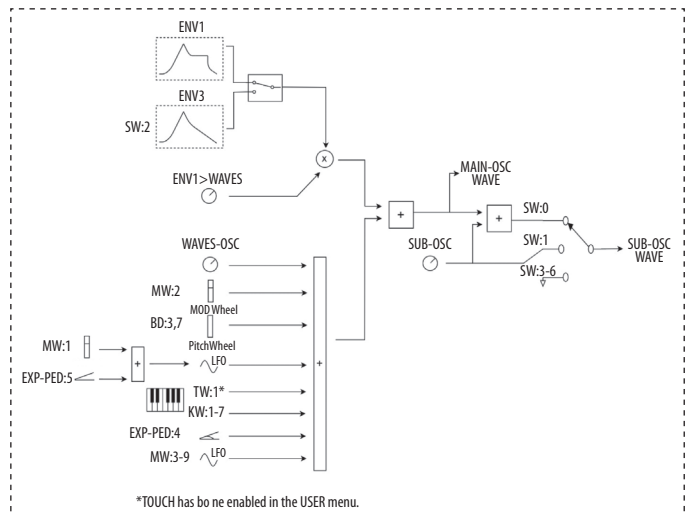
- 12 **Waves Osc** – steps through the waveforms of the selected wavetable for the main oscillator, from 00 to 63.
- 13 **Waves Sub** – steps through the waveforms of the selected wavetable for the sub oscillator, from 00 to 63.

If the selected waveform is a transient one (31-63) then controls 12 and 13 will set the sample playback start points for the main and sub oscillators.

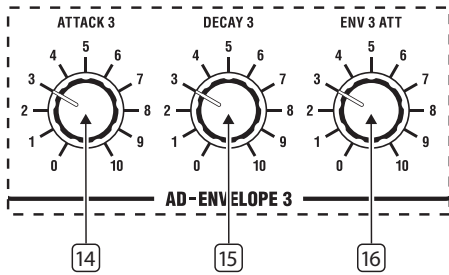
Waves Modulation

Main and Sub oscillator waves can also be modulated by:

- Pitch bend (Option BD in Digital menu)
- Modulation wheel (Option MW in Digital menu)
- LFO (Option MW in Digital menu)
- Keyboard (Option KW in Digital menu)
- Aftertouch (Option TW in Digital menu)
- Expression pedal (Option EXP-PED in USER menu)
- Envelope 1 or Envelope 3 (Option SW in Digital menu)

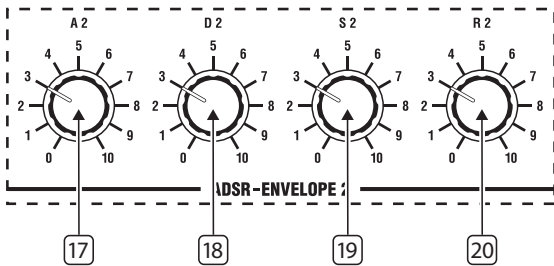


Envelope Generator 3



- 14 **EG3 Attack** – controls the attack time for the third envelope.
- 15 **EG3 Decay** – controls the decay time for the third envelope.
- 16 **EG3 Attenuation** – attenuates (reduces) the maximum output of the third envelope generator. This has a different effect according to what the third envelope is being used for: if it is being used on the pitch of the oscillator then in position five there is no modulation, with lower settings resulting in negative action and higher in positive. When used for modulating the wavetables then the settings run from no modulation at 0 to full (63 wavetable steps) at 10. This modulation is added to the WAVES SUB value.

Envelope Generator 2

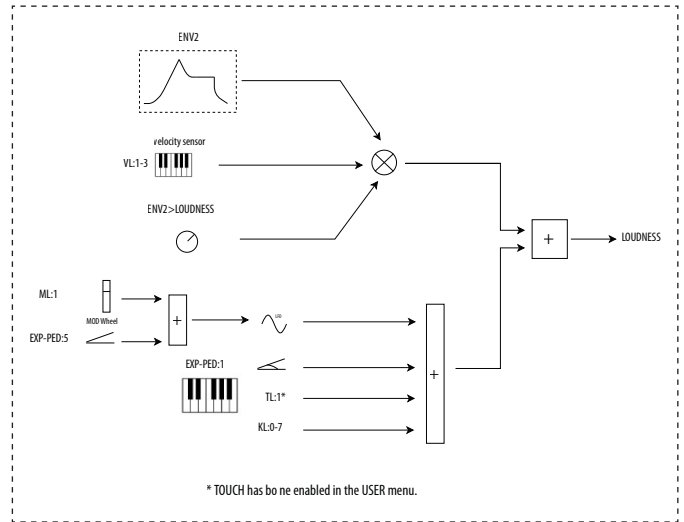


- 17 **EG 2 Attack** – controls the attack time for the loudness envelope. If the Envelope attack rate is set above 47 then the attack will fully complete even if the key is released; and will then move to the release phase. This can be used for filter and wavetable sweeps.
- 18 **EG 2 Decay** – controls the decay time for the loudness envelope.
- 19 **EG 2 Sustain** – controls the sustain level for the loudness envelope following Decay.
- 20 **EG 2 Release** – controls the release time for the loudness envelope.

Loudness modulation

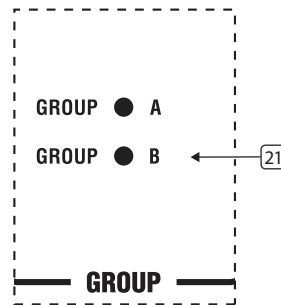
Loudness can be modulated by the following sources:

- LFO (Option ML in Digital menu)
- Keyboard (Option KL in Digital menu)
- Velocity (Option VL in Digital menu)
- Aftertouch (Option TL in Digital menu)
- Expression pedal (Option EXP-PED in USER menu)
- Envelope 2 (Default)



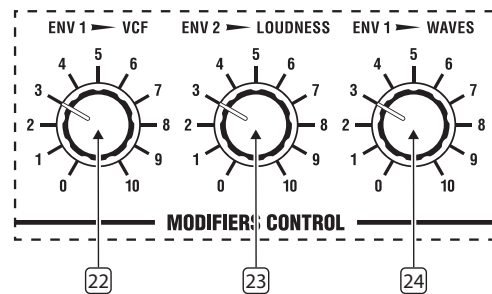
Note that the ML option set to 1 switches on direct modulation through the LFO if FIRM is 0. When FIRM is set to 1, then the amount of LFO loudness modulation is determined by the Mod wheel. See User Menu and Digital Menu sections below.

Group



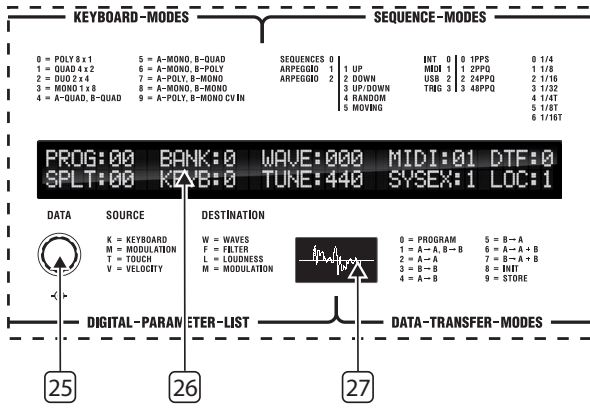
- 21 **Group** – each program has two sounds associated with it, in groups A and B. The group LEDs indicate which sound can be edited when using the DIGITAL/TUNING/ANALOG menus. If both LEDs are lit, parameter changes effect both group sounds. In KEYB POLY 8x1 mode, the lit LED indicates which sound is used. (if both LEDs are lit, group B sound is used).

Modifiers Control



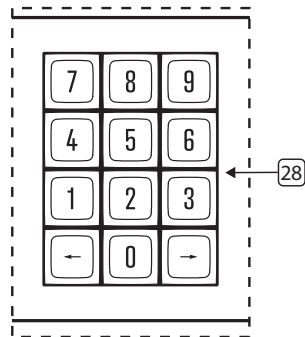
- 22 **Env 1 VCF** – controls the amount of filter modulation from Envelope Generator 1.
- 23 **Env 2 Loudness** – this control adjusts the output level of the active group; and can be used to balance group A and B sounds when used together or in a split mode.
- 24 **Env 1 Waves** – controls the use of Envelope Generator 1 to step through the waveforms in the wavetable in use. If a transient is selected then this control will set the loop point for sample playback for both the main oscillator and the sub-oscillator.

Display



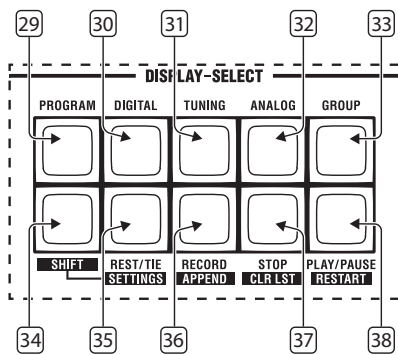
- 25 **Data Control** – used as an alternative to the keypad for entering values. Turn the control to the desired value then press to change the value.
- 26 **LCD Display** – 2 x 40 character display, showing different parameter information according to which button on the keypad is in use. The display is vitally important when using the various menus.
- 27 **OLED Display** – The OLED display serves as an oscilloscope, displaying the real-time output waveform of the synth. During calibration, it provides calibration information. It also shows the names of selected wavetables and transients when in editing mode and confirms successful receipt of wavetables or transients transferred via SynthTribes.

Numeric Keypad



- 28 **Numeric Keypad** – used for direct number entry and cursor control.

Display/Menu Select and Sequencer Controls



- 29 **Program** – calls up the program menu to the display. This is the default menu on power-up. Pressing the button twice calls up the User menu. See Program and User Menus below for full detail.
- 30 **Digital** – calls up the digital parameters to the display for editing. See Digital menu below for full detail.

- 31 **Tuning** – calls up the tuning parameters to the display for editing. See Tuning menu below for full detail.
- 32 **Analog** – calls up the analog parameters to the display for editing. See Analog menu below for full detail.
- 33 **Group** – each program has two sounds associated with it, in groups A and B. The group LEDs indicate which sound can be edited when using the DIGITAL/TUNING/ANALOG menus. If both LEDs are lit, parameter changes effect both group sounds. In KEYB POLY 8x1 mode, the lit LED indicates which sound is used. (if both LEDs are lit, group B sound is used).

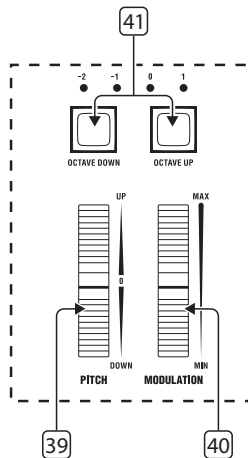
SEQUENCER BUTTONS

- 34 **Shift** – used to access the shifted functions on buttons 35 - 38.
- 35 **Rest/Tie** – pressing this button while holding a note or chord will extend (tie) the note(s) across more than one step of the sequence. Pressing it without holding any notes will insert a rest at that point in the sequence.
- 36 **Record** – puts the sequencer into Record mode.
- 37 **Stop** – when a sequence is running pressing the stop button stops the sequence and resets it to the first position.
- 38 **Play/Pause** – if a sequence is not running then pressing this button starts it. A further press will pause the sequence, but unlike the use of the Stop button will not reset to first position. Pressing the button a third time will restart the sequence from the point that it was paused.

Using the Shift button with the four sequencer buttons adds additional functions:

- Shift & 35 – Settings** – accesses sequencer settings menu. See Sequencer Menu below for full detail.
- Shift & 36 – Append** – after using the </> buttons to go to a specific step in the sequence pressing Shift and 36 allows you to add additional notes to those already recorded on the selected step, to the maximum allowed by the keyboard settings; or to replace the already programmed note(s), depending on the OVP settings in the Sequencer menu.
- Shift & 37 – Clr Lst** – Clear Last allows steps to be erased from the sequence, starting with the last step recorded. Pressing and holding Clear Last will erase the whole sequence.
- Shift & 38 – Restart** – when a sequence is running pressing Shift and 38 restarts it from the first step.

Performance Controls



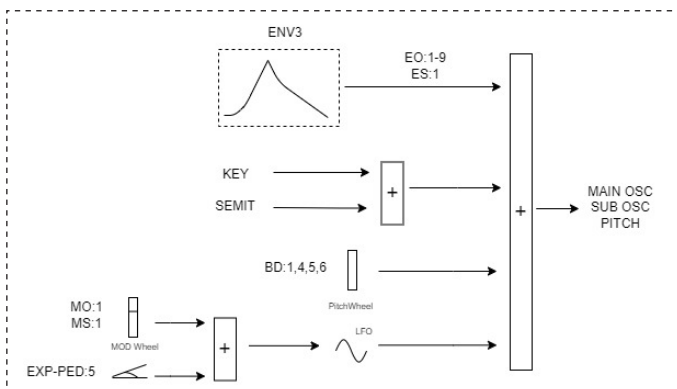
- 39 **Pitch Wheel** – the function of the Pitch Wheel is configured through the BD option in the Digital menu. It can operate as a traditional pitch bend controller for one or both oscillators or be assigned to control other parameters, such as filter cutoff or wavetable position. The wheel automatically returns to its center position when released.

Main and Sub Oscillator Modulation

Both the Main and Sub oscillators' pitch can be modulated by the following sources:

- Pitch bend (Option BD in Digital menu)
- LFO (Option MO and SO in Tuning menu, through the MOD wheel)
- Expression pedal (Option EXP-PED:5 in USER menu, through the LFO if MO/SO is activated)
- Envelope 3 (Option EO and ES in Tuning menu)

Note: Bend Interval (BI) in Digital menu determines amount of Pitch Wheel modulation. EO2 - 9 in TUNING menu activates polyphonic portamento.



40 Modulation Wheel – can be used for various types of modulation depending on the user settings. Please note that the wheel position is stored in each preset, separate for Group A and B sound parameters.

41 Octave Up/Down – transposes the keyboard up by one octave or down by one or two octaves, as indicated by the associated LEDs.

Menus

Program Menu

```

PROG:00  BANK:0  WAVE:021  MIDI:01  DTF:0
SPLT:00  KEYB:0  TUNE:440  SYSEX:0  LOC:1
  
```

This is the default menu, which you will see on the display when you power up. It indicates the status of the Wave.

Please note that where two characters are required on a data entry then a leading zero should be added for single figure numbers (eg 01 for 1.) Parameters are navigated using the left and right cursor controls on the numeric keypad **[28]**; or by using the data encoder **[25]**.

From left to right / top row:

PROG – indicates the current program number from 0 to 99.

BANK – indicates the program bank in use, 0 or 1.

WAVE/TRAN – indicates the wavetable or transient associated with the current program, from 0 to 127. Positions 0 to 30 are the preset wavetables, position 31 is a preset transient wave, positions 32 to 63 are user defined transients and positions 64 to 127 are user defined wavetables.

MIDI – indicates the MIDI transmit and receive channel that your Wave is set to.

0 – indicates that MIDI is switched off; no messages will be transmitted or received.

1-16 – indicates that the Wave will transmit and receive on the specified channel (MIDI mode 3).

DTF – indicates Data Transfer status as follows:

0. Program (default)
1. A – A, B – B: the program data for the group A sound is loaded into the group A edit buffer, and that of group B to the group B edit buffer. Wavetable, split and keyboard mode are unaffected.
2. A – A: the program data for the group A sound is loaded into the group A edit buffer. Group B, wavetable, split and keyboard mode are unaffected.
3. B – B: the program data for the group B sound is loaded into the group B edit buffer. Group A, wavetable, split and keyboard mode are unaffected.
4. A – B: the program data for the group A sound is loaded into the group B edit buffer. Group A, wavetable, split and keyboard mode are unaffected.
5. B – A: the program data for the group B sound is loaded into the group A edit buffer. Group B, wavetable, split and keyboard mode are unaffected.
6. A – A & B: the program data for the group A sound is loaded into both edit buffers. Wavetable, split and keyboard mode are unaffected.
7. B – A & B: the program data for the group B sound is loaded into both edit buffers. Wavetable, split and keyboard mode are unaffected.
8. INIT: this option resets the Wave to its factory settings. You will be asked to type 1 to confirm reset or 0 to cancel.
9. Store

To use the Data Transfer menu to store your edited programs take the following steps:

1. Make your edits as required.
2. Move the cursor in the program menu to DTF. The number next to the DTF indicator should be 0, which is the default setting.
3. Press 9.
4. Select the required program bank (0 or 1).
5. Move the cursor to the PG (program) position and select the program number that you wish to write to, even if you are writing to the same program memory. You will be asked to confirm the write operation by typing 1 for yes or 0 for no. This completes the operation, and DTF will return to 0.

From left to right / bottom row:

SPLT – allows the programming of keyboard split point for use with keyboard modes 4 – 8 as discussed below. The lowest octave of the keyboard, in -2 octave mode, is represented by 0 – 12; -1 octave mode 13-24; 0 octave mode 25-36 etc. The note selected as the split point will be the lowest note of the upper keyboard.

KEYB – indicates which keyboard mode is in use:

0. Poly (default) – eight note polyphony with one oscillator voice and one sub-oscillator voice for each note, sound can be switched between Group A and Group B using button 34.
1. Quad – four note polyphony with two oscillator voices and two sub-oscillator voices for each note, four voices each from Group A (odd numbers) and B (even numbers).
2. Duo – duophonic operation with four oscillator voices and four sub-oscillator voices for each note, four voices each from Group A (odd numbers) and B (even numbers).
3. Mono (Unison) – monophonic operation with all eight oscillator voices and eight sub-oscillator voices for each note, four voices each from Group A (odd numbers) and B (even numbers).
4. A - Quad, B - Quad – split mode with four note polyphony for each sound in Group A and Group B, with Group A sounds on the upper keyboard and Group B on the lower.
5. A – Mono, B – Quad – split mode where the Group A sound is monophonic with four oscillator voices and four sub-oscillator voices and the Group B sound is four note polyphonic with one oscillator voice and one sub-oscillator voice per note played, with Group A sounds on the upper keyboard and Group B on the lower.
6. A – Mono, B – Poly – split mode where the Group A sound is monophonic with two oscillator and two sub-oscillator voices and the Group B sound is six note polyphonic with one oscillator voice and one sub-oscillator voice per note played, with Group A sounds on the upper keyboard and Group B on the lower.
7. A – Poly, B – Mono – split mode where the Group A sound is six note polyphonic with one oscillator voice and one sub-oscillator voice per note played and group B is monophonic with two oscillator and two sub-oscillator voices, with Group A sounds on the upper keyboard and Group B on the lower.
8. A – Mono, B – Mono – split mode where Group A and Group B are monophonic, with four oscillator voices and four sub-oscillator voices each, with group A sounds on the upper keyboard and group B on the lower.
9. A – Poly, B – Mono CV IN – Group A sound is 7 notes polyphonic, monophonic Group B sound is controlled by CV/GATE Inputs on the rear panel

TUNE – indicates the master tuning of the Wave. Normally this would be set to A = 440 (Hz), but it can be adjusted in the range 400 Hz to 499 Hz

SYSEX – Used for manual dump of program data.

- 0 – default (no action).
- 1 – sends current edit buffer data.
- 2 – sends current program data.
- 3 – sends current bank.
- 4 – sends sequencer edit buffer.
- 5 – sends current program's sequencer data.
- 6 – sends current bank's sequencer data.

LOC – selects whether local control from the internal keyboard is active, or whether the Wave will only respond to incoming MIDI messages:

- 0 = Off (keyboard and controls transmit MIDI, Sound Engine is controlled only through MIDI IN)
- 1 = Enabled (keyboard and MIDI IN controls Sound Engine)

User Menu

```
PROG:00 EXP-PED:0 TOUCH:3 BRT:50 CNT:50
V0.2.14 PAR-COM:0 FIRM:1 OSC:1 LFO:1
```

The User Menu is selected by pressing the Program button **[29]** twice. It shows global parameters and allows them to be edited. Parameters are navigated using the left and right cursor controls on the numeric keypad **[28]**

From left to right / top row:

PROG – shows the current program number, which can be changed in this menu.

EXP-PEDAL – if a footpedal is connected to socket 56 (Expression Pedal) on the rear panel this option allows you to select what action the pedal will have:

- 0 = Off (the pedal will have no effect).
- 1 = Loudness (works with the ENV 2 Loudness control).
- 2 = Filter Frequency (works with the VCF Cutoff control).
- 3 = Filter Emphasis (works with the VCF Emphasis control).
- 4 = Wave (works with the Waves Osc control).
- 5 = Modulation Wheel (duplicates the modulation wheel).

Note that the use of an expression pedal does not disable the control that it is duplicating, the two work together until the maximum value is reached. So, for example, if the ENV 2 Loudness control is at its maximum value and option 1 is selected the pedal will have no effect.

TOUCH – selects how Channel Aftertouch is transmitted and received by the Wave:

- 0 = Off (no aftertouch is transmitted or received over MIDI)
- 1 = Aftertouch is enabled and transmitted over MIDI
- 2 = Aftertouch is enabled and received over MIDI only, not from the internal keyboard.
- 3 = Aftertouch is enabled and both transmitted and received over MIDI

BRT – allows the brightness of the LCD display to be adjusted between minimum (00) and maximum (99).

CNT – allows the contrast of the LCD display to be adjusted between minimum (00) and maximum (99).

From left to right /bottom row

V – indicates the current Firmware version. Firmware updates are available through the SynthTribe app; and it is advisable to run the app regularly to check if there are updates available.

PAR-COM – the PAR-COM setting determines if the Wave receives and transmits MIDI CC messages that adjust the sound parameters.

- 0 = No Sound Parameter Changes are transmitted or received
- 1 = Sound Parameter Changes are transmitted only.
- 2 = Sound Parameter Changes are received only.
- 3 = Sound Parameter Changes are both transmitted and received

A good example of how to use PAR-COM would be the recording of MIDI CC data in a DAW: switch the Wave to Local Off and connect to the DAW using USB. Use the Wave's keyboard to play the selected sound and the controls to modify it. All MIDI data will be recorded into the DAW, and the DAW will control the Wave in real time. The recording can then be edited if necessary until you are happy with it; and played back as required.

FIRM – indicated the firmware emulation setting:

- 0 = Original firmware: this setting reproduces the original accurately.
- 1 = Enhanced: this setting introduces some enhancements:
 - Disables LFO delay completely when DELAY=0
 - Increases LFO->Loudness modulation range
 - Leaves ADSR envelope 2 shape intact when ML=1 and adds Mod Wheel control (see Digital Menu below).
 - Reduces Wave sweep range for MW=½ (see Digital Menu below)

OSC – indicated the oscillator quality setting:

- 0 = Original firmware
- 1 = Enhanced (less aliasing and improved wave sweeping)

LFO – indicated the LFO precision setting:

- 0 = Original firmware (LFO is quite wobbly, especially at high speeds)
- 1 = Modern (Improved timing and precision)

Digital Menu



```

PROG:00  UW0 SW0 KW0 KF0 KL0 MW0 MF0 ML0
GROUP:3  BD1 BI0 TW0 TF0 TL0 TM0 UF0 UL0
  
```

The Digital Menu, selected by Digital button [\[30\]](#), shows the digital parameters of your selected program, and allows them to be edited. Parameters are navigated using the left and right cursor controls on the numeric keypad [\[28\]](#).

The two character control abbreviations refer to the source (first character) and destination (second character) of each setting, with the exception of the first two options, which reference the Upper wavetable and the Sub-oscillator. The sources are:

- K – keyboard, or incoming MIDI notes.
- M – modulation from the LFO.
- B – pitchbend from the internal bend wheel, or from an external MIDI source.
- T – aftertouch from the keyboard or from an external MIDI source.
- V – velocity from the keyboard or from an external MIDI source.

These are variously applied to the following destinations:

- W – Wavetable position.
- F – the voltage controlled filter.
- L – the VCA (loudness).
- M – modulation intensity from the LFO.

With the exception of the pitchbend options, where D represents pitchbend destination and I represents its interval or range.

From left to right / top row:

PROG – shows the current program number, which can be changed in this menu

UW – changes from normal wavetable to Upper Wavetable. The settings are:

- 0 – The selected Wavetable is used. WT Positions 60 - 63 and table wrapping is enabled
- 1 – The upper Wavetable is used, which contains the most interesting waves from all 30 wavetables
- 2 – The selected Wavetable is used. Wavetable locations 60 - 63 and wavetable wrapping are disabled. (Very useful for Wavetable sweeping)

SW – indicates the sub-oscillator waveform status. There are seven settings:

- 0 – waveform is the same as the main oscillator, plus any modification made using the Waves Sub control [\[13\]](#).
- 1 – the sub-oscillator waveform is set only by the Waves Sub control [\[13\]](#).
- 2 – replaces envelope generator 1 with envelope generator 3 to sweep through the waves in the wavetable, as set by Env 1 – waves control [\[24\]](#).
- 3 – switches the sub-oscillator off.
- 4 – The sub-oscillator output is muted and used to hard-sync the main oscillator. The frequency of the main oscillator can be adjusted with the Waves Sub control [\[13\]](#)
- 5 – The sub-oscillator waveform is set only by the Waves Sub control [\[13\]](#). Its output is used for ring-modulation with the main-oscillator
- 6 – The Sub-oscillator turns into a noise generator. The Noise level can be adjusted with the Waves Sub control [\[13\]](#)

KW – the keyboard controls the waveform for each note played. There are eight settings:

- 0 – the keyboard effect is switched off. All notes will have the waveform selected.
- 1-3 – as higher notes are played the waveform will shift to a higher waveform in the wavetable.
- 4 – each note will have its own waveform. The lowest C on the keyboard will have the waveform selected by the Waves Osc control [\[12\]](#); each subsequent key will take the waveform below that in the table. If the first waveform is reached then the next note will take the highest waveform (63).
- 5-7 – stronger versions of 4, whereby waveforms are skipped.

KF – the frequency of the filter is tracked by the keyboard. There are eight settings:

- 0 – No keyboard tracking
- 1-2 – keyboard tracking is less than 100%
- 3 – keyboard tracking is approximately at 100% (double VCF frequency for every octave)
- 4-6 – keyboard tracking is between 100% and 200%
- 7 – keyboard tracking is approximately at 200%

KL – the loudness of the voltage controlled amplifier is tracked by the keyboard. There are eight settings:

- 0-3 – higher keys will sound louder than lower keys (subject to the settings on envelope generator 2).
- 4 – all keys have the same loudness.
- 5-7 – lower keys will sound louder than higher keys (subject to the settings on envelope generator 2).

MW – controls the wavetable position modulation by the modulation wheel and LFO.

- 0 – off.
- 1 – waveform LFO sweeping is controlled by Mod Wheel.
- 2 – waveform is swept directly by Mod Wheel.
- 3-9 – waveform is swept by the LFO by between 10% and 100%.

MF – controls filter frequency and resonance modulation by the modulation wheel and LFO.

- 0 – off.
- 1 – filter frequency LFO sweeping is controlled by the modulation wheel
- 2 – filter frequency can be controlled directly by the modulation wheel
- 3 – filter emphasis can be controlled directly by the modulation wheel
- 4-9 – filter frequency is modulated by the waveform LFO constantly by between 10% and 100%.

ML – controls whether the loudness of the VCA can be controlled by the modulation LFO. 0 is off, 1 is on. For emulation of the original this sets a constant low amplitude modulation by the LFO. However, when enhanced FIRMWARE in the USER menu is enabled this controls LFO loudness modulation of the VCA by the Mod Wheel

Left to right / bottom row:

GROUP – indicates whether the display is showing settings for Group A or Group B. Switched with Group button [33](#)

BD – controls what the pitchbend wheel will affect. There are eight settings:

- 0 – pitchbend wheel is off.
- 1 – pitchbend (oscillator and sub-oscillator).
- 2 – filter frequency cutoff.
- 3 – waveform sweep.
- 4 – pitchbend (sub-oscillator only).
- 5 – pitchbend (oscillator and sub-oscillator) plus filter frequency cutoff.
- 6 – pitchbend (oscillator and sub-oscillator) plus waveform sweep.
- 7 – filter frequency cutoff and waveform sweep.

BI – controls the pitchbend wheel range. There are six settings:

- 0 – two semitones.
- 1 – major third (four semitones).
- 2 – fifth (seven semitones).
- 3 – one octave (twelve semitones).
- 4 – two octaves (24 semitones).
- 5 – one octave (12 semitones) in semitones steps.

TW - controls aftertouch for waveform sweeping and LFO modulation:

- 0 – off
- 1 – aftertouch controls waveform sweeping
- 2 – aftertouch controls LFO waveform modulation

TF - controls aftertouch for filter frequency sweeping and LFO modulation:

- 0 – off
- 1 – aftertouch controls filter frequency sweeping
- 2 – aftertouch controls LFO filter frequency modulation

TL - controls aftertouch for loudness and loudness modulation:

- 0 – off
- 1 – aftertouch controls loudness
- 2 – aftertouch controls LFO loudness modulation

TM – allows aftertouch control of the modulation wheel:

- 0 – off
- 1 – on.

VF - sets the sensitivity for velocity control of filter frequency cutoff:

- 0 – off
- 1 – low sensitivity.
- 2 – medium sensitivity.
- 3 – high sensitivity.

VL – sets the sensitivity of velocity control of loudness (VCA level):

- 0 – off
- 1 – low sensitivity.
- 2 – medium sensitivity.
- 3 – high sensitivity

Tuning Menu

```

PROG:00  DETU:3  MO:0  MS:0  EO:0  ES:0  BI:0
GROUP:a  SEMIT:  0  0  0  0  0  0  0

```

The Tuning Menu allows individual voices to be detuned, which can be used to provide interesting effects, especially in monophonic or duophonic modes. Parameters are navigated using the left and right cursor controls on the numeric keypad [28].

Left to right / top row:

PROG – shows current program number, which can be changed in this menu

DETU – indicates detuning between the sub-oscillator and the main oscillator. There are ten settings:

- 0 – no detuning.
- 1 – slight detuning.
- 2 – increased detuning.
- 3 – obvious detuning.
- 4 – strong detuning.
- 5 – detuned by five semitones up.
- 6 – detuned by one octave up.
- 7 – detuned by two octaves up.
- 8 – detuned by one octave down.
- 9 – detuned by two octaves down.

MO – switches pitch modulation of the main oscillator. 0 is off, 1 is on.

MS – switches pitch modulation of the sub-oscillator. 0 is off, 1 is on.

EO – switches pitch modulation of the main oscillator by envelope generator 3:

- 0 – off.
- 1 – on
- 2-9 – enable a portamento effect with increasing glide time

ES – switches pitch modulation of the sub-oscillator by envelope generator 3. 0 is off, 1 is on.

BI – sets the range of the bend wheel. There are six settings:

- 0 – two semitones.
- 1 – major third (four semitones).
- 2 – fifth (seven semitones).
- 3 – octave (12 semitones).
- 4 – two octaves (24 semitones).
- 5 – one octave (12 semitones) in semitone steps.

Left to right / bottom row:

GROUP – indicates whether the display is showing settings for Group A or Group B. Switched with Group button [33]

SEMIT – each of the eight voices can be detuned upwards, with the detuning indicated on the display. Values can either be entered for each voice using the numeric keypad [28] or by using the keyboard. 0 indicates that there is no detuning and is represented on the keyboard by the bottom C key. The largest possible detuning is 63 semitones when entered manually, or 48 when entered from the keyboard using the top C key. The octave buttons [41] have no effect in this instance.

The cursor will automatically move to the next voice when a key is pressed, but it is possible to navigate forward or back using the cursor controls on the numeric keypad [28], which is necessary when entering values manually.

It should also be noted that excessive SEMIT detuning can take higher notes out of the Wave's note range; and that therefore some notes will not sound when played, so care should be taken when using this function.

A good use of SEMIT detuning, which is found in many of the Wave presets, is to place the group B sound in a different octave to those of group A when layering, for example using keyboard mode 1. Group A is left as normal, group B tuned two octaves higher.

```

PROG: 0  DETU:3  MO:0  MI:0  EO:0  ES:0  BI:0
GROUP:a  SEMIT:  0  0  0  0  0  0  0

```

```

PROG: 0  DETU:3  MO:0  MI:0  EO:0  ES:0  BI:0
GROUP:b  SEMIT: 24 24 24 24 24 24 24

```

Another example would be to allow the detuning of group A voices against group B voices when using split keyboard modes, as in the following example:

In the program menu set the keyboard mode to 4 (Quad A/B) and a keyboard split point of your choice. This means that the odd numbered voices are assigned to the group A sound and the even to group B. In the Tuning menu set the SEMIT value of each odd numbered voice to 24, as shown below:

```

PROG: 0  DETU:3  MO:0  MI:0  EO:0  ES:0  BI:0
GROUP:a  SEMIT: 24 0 24 0 24 0 24 0

```

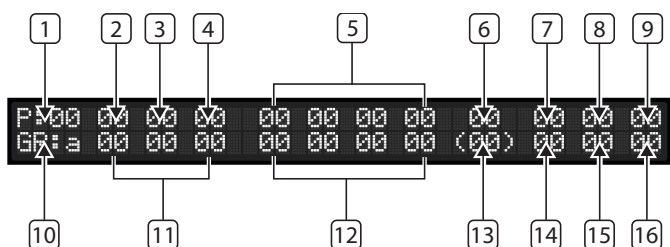
The upper keyboard (group A) notes will sound two octaves higher than those of the lower keyboard (group B); and the sub-oscillator will be noticeably detuned from the main in both groups.

Analog Menu

The analogue menu displays the stored positions of the analog controls on the top panel. Altering the position of any of the controls will replace the stored value with the actual position of the control, but this will not be written to memory unless the Data Transfer writing procedure is followed. Values can also be changed using the numeric keypad to move to the desired control and entering a number between 00 and 63 using the keypad or the data control.

The numbers represent the following settings and controls:

- ① Program Number
- ② LFO Delay
- ③ LFO Waveshape
- ④ LFO Rate
- ⑤ Envelope Generator 1 Attack/Decay/Sustain/Release
- ⑥ Filter Cutoff
- ⑦ Filter Emphasis
- ⑧ Waves Osc
- ⑨ Waves Sub



- ⑩ Group A or B
- ⑪ Envelope Generator 3 Attack/Decay/Attenuation
- ⑫ Envelope Generator 2 Attack/Decay/Sustain/Release
- ⑬ Modulation Wheel
- ⑭ Modifier Envelope 1 to VCF
- ⑮ Modifier Envelope 2 to Loudness
- ⑯ Modifier Envelope 1 to Waves

Sequencer Menu



The Sequencer Menu is accessed by pressing and holding the Shift button **[34]** and pressing the Settings button **[35]**, or by pressing any of the sequencer controls **[35]–[38]**.

Left to Right / top row:

PR – indicates the current program, which can be changed within the menu

MOD – indicates which mode the sequencer/arpeggiator is in. The first digit shows whether the sequencer or arpeggiator is active:

- 0 – the sequencer is active (second digit cannot be altered). See Using The Sequencer section below.
- 1 – arpeggiator 1 is active.
- 2 – arpeggiator 2 is active.

The second digit shows which arpeggiator mode is selected when the arpeggiator is active:

- 1 – up.
- 2 – down.
- 3 – up and down.
- 4 – random.
- 5 – moving (the root of the arpeggiation moves through the notes held).

Using the simple example of a C major chord (C / E / G) the various arpeggiator modes would result in:

- 11: C, E, G, C, E, G etc.
- 12: G, E, C, G, E, C etc.
- 13: C, E, G, G, E, C etc.
- 14: E, G, E, C, G, C or similar.
- 15: C, E, G, E, C, G, G, C, E etc.
- 21 – 25: as 11 – 15 but with the octave above added.

When the arpeggiator is in use a footswitch connected to the Sustain Pedal socket on the rear panel **[57]** will hold the arpeggio without the need to key hands on the keyboard. A latching switch allows the foot to be removed as well. Note that when the arpeggio is held in this way the constituent notes cannot be changed or added to. When used with the arpeggiator the pedal will not affect the sustain function of ENV 2 as it usually would.

CLK – indicates the clock source and rate where appropriate. The first digit shows the source:

- 0 – internal.
- 1 – DIN MIDI.
- 2 – USB MIDI.
- 3 – Analog trigger (via the rear panel Sync In socket).

The second digit shows the clock rate for the internal clock and external analog trigger. The rate is fixed at 24 pulse per quarter note for the MIDI clocks, and when one of them is selected the second digit cannot be altered:

- 0 – 1 pulse per step
- 1 – 2 ppqn
- 2 – 24 ppqn
- 3 – 48 ppqn

So, for example, a setting of 02 would utilize the internal clock at a rate of 24 ppqn; whereas 30 would use an external analog clock from the Sync In socket **[52]** on the rear panel expecting 1 pps.

GAT – indicates the gate duration, which can be adjusted between 1 and 99. Default is 50.

DIV – indicates the clock division for sequenced or arpeggiated notes:

- 0 – ¼ note
- 1 – ⅛ note
- 2 – ⅙ note
- 3 – ⅓₂ note
- 4 – ¼ note triplet
- 5 – ⅛ note triplet
- 6 – ⅙ note triplet

BPM – when the internal clock is selected then the bpm can be set in the range 40 ppm to 240 bpm, with a default setting of 100 bpm. When any of the external clock sources are selected then their bpm will be calculated and indicated.

MTN – indicates whether the metronome is active (1) or inactive (0).

OVP – the first digit indicates whether overdub is disabled (0); where new notes will replace what is currently programmed onto the current step, or enabled (1) where new notes will be added to the step until the maximum number (eight per step) is reached. The second digit indicates whether the keyboard will transpose the sequencer (0), which is the default, or play voices independently of it (1).

SAVE – typing 1 against SAVE saves the programmed sequence and the values of GATE and DIV as part of the current program.

STEP – shows the current step of the sequence to the left of the colon, and the total number of steps programmed to the right.

STATUS – indicates the current sequencer status: STOP, PLAY, RECORD or APPEND

To copy a sequence from one program memory to another load the program that you want to copy to, then move the cursor to the PR number, press Shift and type the number of the program that you want to copy from. The sequence will copy into your current program when you release the shift button.

Using The Sequencer

The Wave stores a polyphonic sequence of up to 64 steps, with up to eight notes on each step, in each program. There are four controls associated with the sequencer, which also have additional functions when using the Shift button.

To start recording a sequence press the Record button **[36]**.

Any notes or chords that you play will be recorded into the sequence, and the step counters will advance by one. The </> buttons with shift can be used to navigate through steps that have been recorded. While in Record mode new notes can be added to a recorded step by navigating to the step and playing them, up to the maximum of eight notes per step if overdub mode is switched on. After a sequence has been recorded then append can be used to either add or replace notes on a selected step, depending on the overdub setting; or to add new steps to the sequence up to the maximum of 64.

When you have finished recording press the Record button again, or press Stop **[37]**.

To play back the sequence press Play **[38]**. Pressing Play again will pause the sequence. A further press resumes playback from the pause point.

To store your sequence move the cursor to Save, then type 1 to complete the write procedure.

If an error is made while programming a sequence then the Clr Last (Shift and Stop) button can be used to erase the last note. Holding the buttons for more than two seconds will erase all steps.

Pressing any key on the keyboard while a sequence is playing will instantly transpose the sequence if the second digit of OVP is set to 0. If it is set to 1 then the keyboard will have no effect on the sequence, but will be used to play voices that the sequencer is not using. If VL (Velocity Loudness) is selected in the digital menu then the velocity of the key used to transpose the sequence will be applied to all steps while the sequence is transposed.

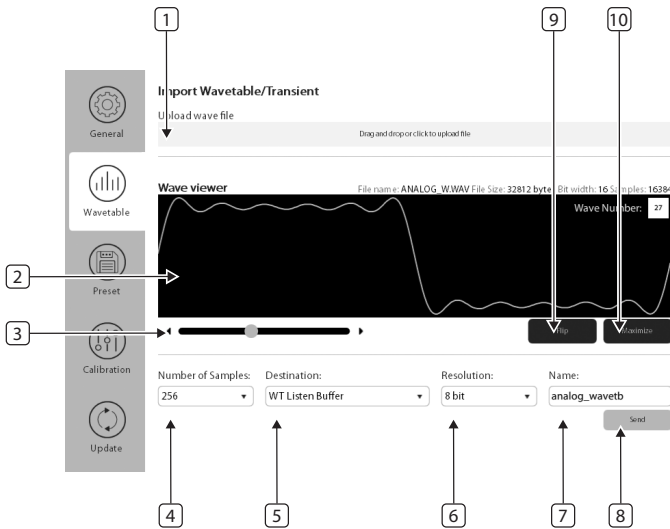
Sequencer use examples

Append: after you have programmed some notes and chords you may wish to add in additional steps. Start the Append process by pressing Shift and Record (the display will show APPEND) at bottom right). Press and hold the Shift button then use the <> keys on the numeric keypad to move through the recorded steps, which will sound as you navigate. Move to step 00 and whatever you play will be added before the original first step; move to the last step and new steps will be added at the end of the sequence, until step 64 is reached. Move to a step at any point between the beginning and the end and new steps will be added after the step you navigate to.

Overdub: the overdub facility can be used to add additional notes to steps that have already been recorded. First ensure that the leading digit of the OVP option is set to 1 (the second digit is not necessary for this function). Put the Wave into record mode, then record some notes. When you have recorded enough steps press Stop. Re-activating record mode allows you to add additional notes to each step; and to continue recording additional steps after the final step of the first pass if required. Note that the maximum number of notes allowed on each step is eight, so trying to add a ninth note is not possible.

User Waves and Transients

One of the key features of the Wave synthesizer is the ability to import custom wavetables and transients, created using third-party tools. This can be done through the SynthTribe App, which you can connect to your WAVE synthesizer via USB on your PC or Mac. Once connected, launch the SynthTribe App and navigate to the Wavetable tab to access the import window.



Loading Files

To import a file, simply click or drag and drop the file at the top of the import window ①. The app accepts standard uncompressed Mono WAV files. Once loaded, the file's information and waveform will be displayed in the wave viewer ②. You can navigate through the waveform using the navigation slider ③.

Configuring Waveform Samples

Wavetables can have different sample lengths per waveform depending on the export settings of the third-party application. Common lengths include 128, 256, 512, 1024, 2048 and 4096 samples. To ensure full compatibility, the SynthTribe app automatically down-samples the wavetable to match the Wave synthesizer's requirement of 128 samples per waveform, with 64 waves per wavetable.

Use the Number of Samples window ④ to adjust the sample count per waveform based on your wavetable file. This adjustment will immediately update the waveform display to reflect the chosen sample set. If the file contains more than 64 waves, only the first 64 will be used, while any remaining slots will be left empty if fewer waves are present.

For transients, no down-sampling occurs, and the full wavetable memory is utilized. As a result, the Number of Samples option is disabled, and the entire transient is displayed in the viewer.

Selecting Destination

You can choose one of three destinations for your wave from the Destination drop-down menu ⑤:

- User Wavetables (locations 64–127)
- User Transients (locations 32–63)
- WT / TR Listen Buffers

Waves sent to the user wavetable or transient locations will be saved into the Wave's no-volatile memory. If either of the Listen Buffers is selected then the wave or transient of the current program will be replaced by three dashes (---) and the wave will not be saved. This is a useful way of previewing how a user wave or transient will sound without committing it to memory.

Setting Resolution and Naming

The Resolution window ⑥ gives the option of sending the waveform in 8 or 16 bit form. The Name window ⑦ shows the name of the file that was imported, with the option to edit in the window.

Sending the Wavetable or Transient

When all the parameters have been set satisfactorily use the Send button ⑧ to send the file to your chosen destination. This takes around 8 seconds, with the progress displayed in the app. Once the file has been successfully received the Wave's OLED display will momentarily show the file name and destination.

Additional Functions

The Flip and Maximize buttons ⑨ ⑩ provide two extra tools for refining your waveforms:

- Flip reverses the wavetable, swapping the order of waves (e.g., wave 0 becomes wave 63). This can be useful when programming sounds, particularly when sweeping through the table with the ADSR 1 envelope.
- Maximize normalizes the waveform, scaling all values proportionally to ensure the highest peak reaches the maximum output level. This is helpful when the imported wavetable or transient has low audio levels, ensuring optimal volume without affecting the waveform's shape and dynamics.

Programs

The Wave comes with two banks of 100 programs from the factory. Bank 0 contains our Behringer sounds, Bank 1 contains some classic Wave programs.

Bank 0

PROG	NAME	KEYB	WT/TR	AT
0	Thingie	Poly	21	
1	Space Sweep	Poly	74	
2	Dynamic Tines	Poly	68	
3	Bass & Juno Sweep	A poly, B mono	29	X
4	Dynamic Prophet Brass	Poly	24	X
5	Stratos	Poly	71	
6	Bass & Voco Trem	A poly, B mono	86	
7	Wurli One	Poly	84	
8	Jazz Guitar	Poly	67	
9	Rotary B3	Poly	27	
10	Bass & PWM Strings	A poly, B mono	29	
11	Tomita's Bass	Poly	0	X
12	Church Pipes	Poly	64	
13	Dream Vibes	Poly	69	
14	Fretless & Tines	A poly, B mono	68	
15	BellTasia	Poly	2	
16	Tubular	Poly	66	
17	CZ Sawer	Poly	78	
18	FM Brass	Poly	6	X
19	WAVE Waves	Poly	16	X
20	FairVox	Poly	73	
21	PanFlute	Poly	32	X
22	Pizzicato	Poly	33	
23	Steel Guitar	Poly	34	
24	Xylophone	Poly	36	
25	Sail Away	Poly	38	
26	PWMstringer	A poly, B mono	76	
27	Soft Bell EP	Poly	39	
28	Dusty Rhodos	Poly	40	
29	Solo Trumpet	Poly	41	X
30	Mute Trumpet	Poly	42	X
31	Duuuh	Poly	43	X
32	Bass & Wurli	A poly, B mono	84	
33	Sync Solo	Quad	30	X
34	Synth Flute	Poly	30	X
35	Alto Sax	Poly	31	X
36	Retro Split	A poly, B mono	19	X
37	Strings'n Solo	Quad A/B	29	X
38	Matrix Strings	Poly	24	
39	Alpha Pad	Poly	65	

PROG	NAME	KEYB	WT/TR	AT
40	Cosmic Soup	Poly	18	
41	HarpOon	Poly	37	
42	Square Solo	Poly	24	X
43	Fantasia	Poly	22	
44	Synth Pizzi	Poly	30	
45	Super Saw	Poly	0	
46	Organ Chariot	Poly	14	
47	Noise Siren	Poly	24	
48	Piano X	Poly	31	
49	Percussion	Poly	0	
50	Drone Harmonica	Poly	11	
51	FanWAVEia	Poly	17	
52	Lyle's Solo	Poly	30	X
53	FM Bass1	Poly	70	
54	PWM Pad	Poly	72	
55	Solina 1	Poly	71	
56	808 Bass	Poly	20	
57	SYNC	Poly	0	X
58	WAVE SeqSplit	A poly, B mono	6	X
59	Synth Cello	Poly	35	X
60	SoundTrack	Poly	24	X
61	Solead	Poly	77	
62	LA Strings	Poly	82	X
63	Crystal Waves	Poly	17	
64	80s Rig	A poly, B mono	71	
65	JunPad & CV-Bass	A poly, B mono CV in	24	
66	Fendi Rhodos	Poly	85	
67	Funky Wurli	Poly	84	
69	Arpeggio PAD	Poly	18	
69	Ding Ding	Poly	86	
70	Short Bell	Poly	2	
71	Square Arp	Poly	8	X
72	Reso Harp	Poly	9	X
73	Harpsi Bell	Poly	12	X
74	Steel Organ	Poly	18	
75	Spring Pad	Poly	19	
76	Octave Bell	Poly	23	
77	Yoga Temple	Poly	25	
78	Steel Drum	Poly	2	
79	Chime Bell	Poly	1	
80	Matrix Strings 2	Poly	6	
81	Wheel Pad	Poly	14	
82	Organic Synth	Poly	14	
83	Squared Dreams	Poly	29	
84	Robotic	Poly	20	
85	Reso Phase	Poly	26	

PROG	NAME	KEYB	WT/TR	AT
86	Arcade Pad	Poly	19	
87	PWM Solo	Poly	29	
88	VCF SSM2044	Poly	0	
89	ARP Lead	Quad	3	
90	Spring Pad	Poly	19	
91	Reso Dive Organ	Poly	27	
92	ArpEratus	Poly	0	
93	EquiSAW	Poly	26	
94	Woody SQU	Poly	14	
95	Wave Chase	Poly	14	
96	Poly Bass	Poly	14	
97	Wave Slide	Poly	14	
98	Landscape	Poly	14	
99	Formant Drop	Poly	14	

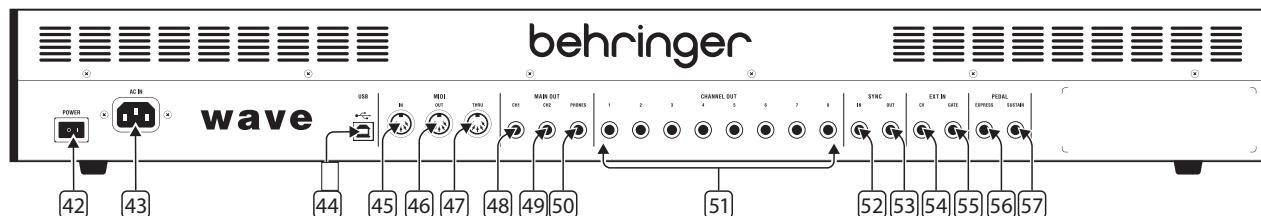
Bank 1

PROG	NAME	KEYB	WT/TR	AT
0	WAVE Swirl	Poly	17	
1	Modulated Vibraphone	Poly	8	
2	Harmonic Glide	Poly	0	
3	WAVE Tone 16	Poly	18	
4	Resonant Extended Synth	Poly	27	
5	Belli Pad	Poly	0	
6	KW Organ	Poly	14	
7	Waow!	Quad	18	
8	Organ 1	Poly	20	
9	Organ 2	Poly	20	
10	Bellgan	Quad	20	
11	Wave Organ	Poly	18	
12	Filter Mod	Poly	14	
13	WAVE Sitar	Poly	9	
14	Sawyer	Poly	0	
15	StringPan	Poly	28	
16	Inspired by Fender Keys	Poly	8	
17	Inspired by Electric Keys	Poly	8	
18	Env Sync	Poly	28	
19	Punchy with Quinte	Poly	24	
20	Wave Shaping	Quad	6	
21	Concert Piano	Poly	31	
22	Brass Bel	Quad	0	
23	Punchy	Poly	24	
24	Dynamic Spinet	Quad	13	
25	Bubble Square	Poly	0	
26	Cosmic Spinet	Poly	5	

PROG	NAME	KEYB	WT/TR	AT
27	Upright Piano	Poly	23	
28	Citrus	Quad	20	
29	Wave Bypass	Poly	15	
30	Synth	Poly	0	
31	Pulse Width Synth	Poly	28	
32	Resonant Synth Attack	Poly	14	
33	Tinkle	Poly	24	
34	Sawtooth Extended Synth	Poly	28	
35	Punchy with Resonance	Poly	9	
36	Punchy Metal	Quad	13	
37	Punchy Chime	Poly	2	
38	Electric 12-String	Quad	28	
39	Chime	Poly	4	
40	Long Space Chime	Poly	24	
41	Chime-like	Quad	4	
42	Delicate Punch	Poly	0	
43	Mallet Keys	Quad	2	
44	Vibrating Keys	Poly	2	
45	Punchy 3	Poly	15	
46	Saxophone	Poly	31	
47	Brass Section 1	Poly	26	
48	Trumpet Section	Quad	26	
49	Perc. / Extended	Poly	6	
50	Deep Brass	Poly	7	
51	Trombone Section	Poly	26	
52	Brass Ensemble	Quad	26	
53	Blended Brass	Quad	26	
54	High Register Flute	Poly	3	
55	Woodwind Flute	Poly	3	
56	String Ensemble 1	Quad	16	
57	String Ensemble 2	Quad	29	
58	Vox Ocean	Poly	27	
59	ChoirTasia	Quad	27	
60	Ethereal Strings	Poly	29	
61	Ethereal Strings	Quad	29	
62	Poly with Sync FX	Quad	28	
63	Echo Bell Pad	Poly	25	
64	Reed Instrument	Poly	10	
65	Concert Piano + Saxophone	A-Quad, B-Quad	31	
66	Studio Organ	Poly	14	
67	Cathedral Organ	Poly	14	
68	Orgish Bell	Poly	14	
69	High Perc	Poly	24	

PROG	NAME	KEYB	WT/TR	AT
70	Perc	Poly	24	
71	Organ 3	Poly	14	
72	Organ 1 Redux	Poly	20	
73	Raw Choir	Poly	27	
74	Blended Choir	Quad	27	
75	Ethereal Choir	Quad	21	
76	Ethereal Choir 2	Quad	27	
77	FX	Poly	25	
78	Space Poly	Quad	16	
79	FX Poly	Quad	20	
80	Sync-stortion	Poly	28	
81	Elec Piano	Poly	30	
82	Poly Pad	Poly	30	
83	Funk Saw	Poly	14	
84	Simple Organ	Poly	30	
85	Glockenspiel	Quad	4	
86	Harp-une	Poly	29	
87	Chain Saw Bass	Poly	13	
88	Soundcard FM	Poly	26	
89	Full Keys	Quad	30	
90	Concert Piano Strings	Poly	31	
91	Concert Piano with Wave Tone	Poly	31	
92	Concert Piano with Sax	A-Quad, B-Quad	31	
93	Perc for Sequencer	Poly	0	
94	Delay	Poly	25	
95	Pitch Shift	Poly	0	
96	FX	Poly	13	
97	Quirky	Mono	13	
98	Delay Effect	Poly	25	
99	Sample & Hold	Poly	20	

Rear Panel



- 42 **Power Switch**
- 43 **IEC Power Inlet** – connects to AC power source in the range 100 – 240 volt, using the supplied IEC cable.
- 44 **USB Socket** – connects to your computer for MIDI control and firmware updates.
- 45 **MIDI IN DIN** – allows control of the Wave from an external MIDI source using 5-pin DIN lead.
- 46 **MIDI OUT DIN** – outputs MIDI messages from the Wave to other connected equipment using 5-pin DIN lead.
- 47 **MIDI THRU DIN** – passes messages received at the MIDI IN socket to external MIDI equipment using 5-pin DIN lead.
- 48 **Channel 1 Output** – unbalanced audio output using 6.35mm (1/4") TS jack. If the Basis control (1) is set to minimum then the Wave will be in mono. When Basis is above minimum then this carries the left hand part of the signal.
- 49 **Channel 2 Output** – carries the right hand part of the signal when Basis is above minimum. Doubles up the mono output of Channel 1 when the Basis control is set to minimum.
- 50 **Phones** – stereo headphone output on 6.35mm TRS jack.
- 51 **Channel Outs** – unbalanced outputs for individual voices on 6.35mm (1/4") TS jacks. Voices will still feed the main left and right outputs when channel outs are in use.
- 52 **Sync In** – external synchronization input for the sequencer and arpeggiator, selected in the sequencer menu. The socket is TRS with the start/stop function on the ring and the clock on the tip.
- 53 **Sync Out** – outputs a trigger pulse in time with the internal sequencer and arpeggiator. The socket is TRS with the start/stop function on the ring and the clock on the tip.
- 54 **CV In** – allows control of group B voices, monophonically, from an external 1 volt/octave CV source, when in Keyboard Mode 9. CV range is -5 V to +5 V.
- 55 **Gate In** – allows the envelope generators to be controlled by an external gate, when in Keyboard Mode 9.
- 56 **Expression Pedal** – allows connection of a footpedal, such as the Behringer FC600, to control a variety of parameters based on the selected settings.
- 57 **Sustain Pedal** – allows notes to be held indefinitely at the sustain level of envelope generator 2 using a footswitch.

Calibration

The Wave is fully calibrated at the factory, but recalibration can be performed if needed. Four types of calibrations are available: VCA/VCF, CV Input, Mod Wheel, and Pitch Wheel. All calibrations are initiated through the Synthtribe app, while VCA/VCF calibration can also be accessed directly from the synth via a specific key combination at startup. Instructions and results are shown on the OLED screen during the process.

VCA/VCF Calibration

For best results, allow the Wave to warm up for 45 minutes before starting the calibration. To begin, power cycle the Wave while holding the ANALOG (32) and GROUP (33) buttons. The OLED will display the calibration progress, which may take up to 200 seconds.

CV Input Calibration

This calibration requires playing a note on the Wave's keyboard or an external MIDI keyboard while supplying the corresponding voltage to the CV Input on the rear panel. Then, play a second note with a new CV input.

Mod Wheel Calibration

To calibrate the Mod Wheel, move it to its maximum position, then back to the minimum position as instructed on the OLED.

Pitch Wheel Calibration

For the Pitch Wheel calibration, move the wheel to its maximum position and hold it until prompted to release, then move it to the minimum position and hold until instructed to release.

MIDI CCs

Apart from note on/off messages on the selected channel (see MIDI under Program Menu above) the Wave also responds to, and transmits, the following MIDI messages:

Control #	Range	Function	Transmit	Receive	Remarks
0	0-1	Bank Select MSB	X	X	
1	0-127	Modulation Wheel	X	X	
6	0-127	NRPN Data MSB	1.)	2.)	Data Value
7	0-127	Volume	1.)	2.)	MASTER VOLUME
8	0-127	Balance	1.)	2.)	BASIS
11	0-127	Expression Pedal	X	X	
12	0-127	DELAY	1.)	2.)	LFO Delay
13	0-127	WAVESHAPE	1.)	2.)	LFO Shape
14	0-127	RATE	1.)	2.)	LFO Rate
15	0-127	ATTACK 3	1.)	2.)	Env 3 - Attack
16	0-127	DECAY 3	1.)	2.)	Env 3 - Decay
17	0-127	ENV 3 ATT	1.)	2.)	Env 3 - Amount
18	0-127	A1	1.)	2.)	Env 1 - Attack
19	0-127	D1	1.)	2.)	Env 1 - Decay
20	0-127	S1	1.)	2.)	Env 1 - Sustain
21	0-127	R1	1.)	2.)	Env 1 - Release
22	0-127	A2	1.)	2.)	Env 2 - Attack
23	0-127	D2	1.)	2.)	Env 2 - Decay
24	0-127	S2	1.)	2.)	Env 2 - Sustain
25	0-127	R2	1.)	2.)	Env 2 - Release
26	0-127	WAVES-OSC	1.)	2.)	Main Osc Wave Tab Position
27	0-127	WAVES-SUB	1.)	2.)	Sub Osc Wave Tab Position
28	0-127	ENV 1 -> VCF	1.)	2.)	Env1 -> VCF Frequency Mod
29	0-127	ENV 2 -> LOUDNESS	1.)	2.)	Preset Volume
30	0-127	ENV 1 -> WAVES	1.)	2.)	Env1 -> Wave Pos Mod
31	0-2	Group Select	1.)	2.)	0=A, 1=B, 2=A+B
32	0-1	Bank Select LSB	X	X	
64	0/127	Sustain Pedal	X	X	
71	0-127	VCF-EMPHASIS	1.)	2.)	Filter Resonance
74	0-127	VCF-CUTOFF	1.)	2.)	Filter Frequency
98	0-127	NRPN Para# LSB	1.)	2.)	Lower 7 bits
99	0-127	NRPN Para# MSB	1.)	2.)	Higher 7 bits
120		All Sound Off		X	
121		Reset all Controllers		X	
122	0/127	Local Control	X	X	0=Off/127=On
123		All Notes Off		X	
					X = Yes
					1.) When PAR-COM=1,3
					2.) When PAR-COM=2,3

MIDI NRPNS

The Wave also responds to, and transmits, MIDI NRPNS

MSB	LSB	14-bit	Parameter Name	Range	Notes
0	0	00	WAVETB	0-127	Wavetable (32-127 = User WT/Trans)
0	1	01	SPLIT	0-99	Split Point
0	2	02	KEYB	0-9	Keyboard Mode
0	3	03	DTF	0-7	Preset Data recall Mode
0	4	04	TUNE	0-99	Tuning (400-499)
0	5	05	EXP-PEDAL	0-5	Expression Pedal Function
0	6	06	TOUCH	0-3	Channel Aftertouch
0	7	07	BRT	0-99	LCD Brightness
0	8	08	CNT	0-99	LCD Contrast
0	9	09	FIRM	0-1	Firmware Mode
0	10	10	OSC	0-1	Oscillator Mode
0	11	11	LFO	0-1	LFO Mode
0	12	12	UW	0-2	Upper WT Select
0	13	13	SW	0-6	Sub Osc Mode
0	14	14	KW	0-7	Key -> Wave Mod
0	15	15	KF	0-7	Key -> Filter Mod
0	16	16	KL	0-7	Key -> Loudness Mod
0	17	17	MW	0-9	Mod Wheel -> Wave Mod
0	18	18	MF	0-9	Mod Wheel -> Filter Mod
0	19	19	ML	0-1	Mod Wheel -> Loudness Mod
0	20	20	BD	0-7	Bender Destination
0	21	21	BI	0-5	Bender Interval
0	22	22	TW	0-2	Touch -> Wave Mod
0	23	23	TF	0-2	Touch -> Filter Mod
0	24	24	TL	0-2	Touch -> Loudness Mode
0	25	25	TM	0-1	Touch -> Mod Wheel
0	26	26	VF	0-3	Velocity -> Filter Mod
0	27	27	VL	0-3	Velocity -> Loudness Mod
0	28	28	DETU	0-9	Sub Osc Detuning
0	29	29	MO	0-1	Mod -> Main Osc Pitch
0	30	30	MS	0-1	Mod -> Sub Osc Pitch
0	31	31	EO	0-9	Env3 -> Main Osc Pitch
0	32	32	ES	0-1	Env3 -> Main Sub Pitch
0	33	33	SEMIT V1	0-63	Voice 1 - Semi Offset
0	34	34	SEMIT V2	0-63	Voice 2 - Semi Offset
0	35	35	SEMIT V3	0-63	Voice 3 - Semi Offset
0	36	36	SEMIT V4	0-63	Voice 4 - Semi Offset
0	37	37	SEMIT V5	0-63	Voice 5 - Semi Offset
0	38	38	SEMIT V6	0-63	Voice 6 - Semi Offset
0	39	39	SEMIT V7	0-63	Voice 7 - Semi Offset
0	40	40	SEMIT V8	0-63	Voice 8 - Semi Offset
0	41	41	STATE	0-3	Arp/Seq - State (Stop,Play,Rec,Overdub)
0	42	42	MOD	0-25	Arp/Seq - Mode

MSB	LSB	14-bit	Parameter Name	Range	Notes
0	43	43	CLK	0-34	Arp/Seq - Clock Selection
0	44	44	GAT	1-99	Arp/Seq - Gate Time
0	45	45	DIV	0-6	Arp/Seq - Sequencer Time
0	46	46	BPM	40-240	Arp/Seq - Speed (MSB/LSB)

Notes:

Data change commands (RX & TX)

1. Bn 63 00
2. Bn 62 *ParNum*
3. Bn 06 *Value*

(n = MIDI Chan. (0 - 15) *ParNum* = 0 - 37 *Value* = 0 - 127)

Bank Select (RX & TX)

1. Bn 00 00
2. Bn 20 *BankNum*

(n = MIDI Chan, (0 - 15) *BankNum* = 0 or 1)

All numbers are in HEX format.

SysEx

This section describes how the Wave responds to SysEx commands. Note that all numbers are Hex.

SysEx Data Format

MIDI SysEx transmissions always begin with data 0xF0, end with 0xF7.

WAVE Data Structure of MIDI SysEx Messages

F0	Manu ID	Model ID	Device ID	PKT	SPKT	Data	F7
----	---------	----------	-----------	-----	------	------	----

Description of SysEx structure

Field (Hex)	Description
F0	System exclusive start.
00 20 32	Manufacturer ID (Behringer GmbH)
00 01 39	Model ID (WAVE)
Device ID	Always '0' for the WAVE
PKT	Packet Type
SPKT	Sub Packet Type (SPKT is absent for some packets)
Version	Data Package Version Byte (currently 0x0)
Data	Payload of packet
F7	End of system exclusive

SysEx Preset Data

Byte	Group	Menu	Parameter Name	Range	Notes
0-15		NAME	PRESET NAME	32-126	16x ASCII Character Bytes
16		PROGRAM	WAVETB	0-127	Wavetable (32-127 = User TR/WT)
17		PROGRAM	SPLIT	0-99	Split Point
18		PROGRAM	KEYB	0-9	Keyboard Mode
19	A	TUNING	DETU	0-9	Sub Osc Detuning
20	A	TUNING	MO	0-1	Mod -> Main Osc Pitch
21	A	TUNING	MS	0-1	Mod -> Sub Osc Pitch
22	A	TUNING	E0	0-1	Env3 -> Main Osc Pitch
23	A	TUNING	ES	0-1	Env3 -> Main Sub Pitch
24	A	TUNING	SEMIT V1	0-63	Voice 1 - Semi Offset
25	A	TUNING	SEMIT V2	0-63	Voice 2 - Semi Offset
26	A	TUNING	SEMIT V3	0-63	Voice 3 - Semi Offset
27	A	TUNING	SEMIT V4	0-63	Voice 4 - Semi Offset
28	A	TUNING	SEMIT V5	0-63	Voice 5 - Semi Offset
29	A	TUNING	SEMIT V6	0-63	Voice 6 - Semi Offset
30	A	TUNING	SEMIT V7	0-63	Voice 7 - Semi Offset
31	A	TUNING	SEMIT V7	0-63	Voice 8 - Semi Offset
32	A	ANALOG	DELAY	0-127	LFO Delay
33	A	ANALOG	WAVESHAPE	0-127	LFO Shape

Byte	Group	Menu	Parameter Name	Range	Notes
34	A	ANALOG	RATE	0-127	LFO Rate
35	A	ANALOG	A1	0-127	Env 1 - Attack
36	A	ANALOG	D1	0-127	Env 1 - Decay
37	A	ANALOG	S1	0-127	Env 1 - Sustain
38	A	ANALOG	R1	0-127	Env 1 - Release
39	A	ANALOG	VCF-CUTOFF	0-127	Filter Frequency
40	A	ANALOG	VCF-EMPHASIS	0-127	Filter Resonance
41	A	ANALOG	WAVES-OSC	0-127	Main Osc Wave Tab Position
42	A	ANALOG	WAVES-SUB	0-127	Sub Osc Wave Tab Position
43	A	ANALOG	ATTACK 3	0-127	Env 3 - Attack
44	A	ANALOG	DECAY 3	0-127	Env 3 - Decay
45	A	ANALOG	ENV 3 ATT	0-127	Env 3 - Amount
46	A	ANALOG	A2	0-127	Env 2 - Attack
47	A	ANALOG	D2	0-127	Env 2 - Decay
48	A	ANALOG	S2	0-127	Env 2 - Sustain
49	A	ANALOG	R2	0-127	Env 2 - Release
50	A	ANALOG	MOD WHL	0-127	Mod Wheel Position
51	A	ANALOG	ENV 1 -> VCF	0-127	Env1 -> VCF Frequency Mod
52	A	ANALOG	ENV 2 -> LOUDNESS	0-127	Preset Volume
53	A	ANALOG	ENV 1 -> WAVES	0-127	Env1 -> Wave Pos Mod
54	A	DIGITAL	UW	0-2	Upper WT Select
55	A	DIGITAL	SW	0-6	Sub Osc Mode
56	A	DIGITAL	KW	0-7	Key -> Wave Mod
57	A	DIGITAL	KF	0-7	Key -> Filter Mod
58	A	DIGITAL	KL	0-7	Key -> Loudness Mod
59	A	DIGITAL	MW	0-9	Mod Wheel -> Wave Mod
60	A	DIGITAL	MF	0-9	Mod Wheel -> Filter Mod
61	A	DIGITAL	ML	0-1	Mod Wheel -> Loudness Mod
62	A	DIGITAL	BD	0-7	Bender Destination
63	A	DIGITAL	BI	0-5	Bender Interval
64	A	DIGITAL	TW	0-2	Touch -> Wave Mod
65	A	DIGITAL	TF	0-2	Touch -> Filter Mod
66	A	DIGITAL	TL	0-2	Touch -> Loudness Mode
67	A	DIGITAL	TM	0-1	Touch -> Mod Wheel
68	A	DIGITAL	VF	0-3	Velocity -> Filter Mod
69	A	DIGITAL	VL	0-3	Velocity -> Loudness Mod
70	B	TUNING	DETU	0-9	Sub Osc Detuning
71	B	TUNING	MO	0-1	Mod -> Main Osc Pitch
72	B	TUNING	MS	0-1	Mod -> Sub Osc Pitch
73	B	TUNING	EO	0-9	Env3 -> Main Osc Pitch
74	B	TUNING	ES	0-1	Env3 -> Main Sub Pitch
75	B	TUNING	SEMIT V1	0-63	Voice 1 - Semi Offset
76	B	TUNING	SEMIT V2	0-63	Voice 2 - Semi Offset
77	B	TUNING	SEMIT V3	0-63	Voice 3 - Semi Offset
78	B	TUNING	SEMIT V4	0-63	Voice 4 - Semi Offset
79	B	TUNING	SEMIT V5	0-63	Voice 5 - Semi Offset

Byte	Group	Menu	Parameter Name	Range	Notes
80	B	TUNING	SEMIT V6	0-63	Voice 6 - Semi Offset
81	B	TUNING	SEMIT V7	0-63	Voice 7 - Semi Offset
82	B	TUNING	SEMIT V7	0-63	Voice 8 - Semi Offset
83	B	ANALOG	DELAY	0-127	LFO Delay
84	B	ANALOG	WAVESHAPE	0-127	LFO Shape
85	B	ANALOG	RATE	0-127	LFO Rate
86	B	ANALOG	A1	0-127	Env 1 - Attack
87	B	ANALOG	D1	0-127	Env 1 - Decay
88	B	ANALOG	S1	0-127	Env 1 - Sustain
89	B	ANALOG	R1	0-127	Env 1 - Release
90	B	ANALOG	VCF-CUTOFF	0-127	Filter Frequency
91	B	ANALOG	VCF-EMPHASIS	0-127	Filter Resonance
92	B	ANALOG	WAVES-OSC	0-127	Main Osc Wave Tab Position
93	B	ANALOG	WAVES-SUB	0-127	Sub Osc Wave Tab Position
94	B	ANALOG	ATTACK 3	0-127	Env 3 - Attack
95	B	ANALOG	DECAY 3	0-127	Env 3 - Decay
96	B	ANALOG	ENV 3 ATT	0-127	Env 3 - Amount
97	B	ANALOG	A2	0-127	Env 2 - Attack
98	B	ANALOG	D2	0-127	Env 2 - Decay
99	B	ANALOG	S2	0-127	Env 2 - Sustain
100	B	ANALOG	R2	0-127	Env 2 - Release
101	B	ANALOG	MOD WHL	0-127	Mod Wheel Position
102	B	ANALOG	ENV 1 -> VCF	0-127	Env1 -> VCF Frequency Mod
103	B	ANALOG	ENV 2 -> LOUDNESS	0-127	Preset Volume
104	B	ANALOG	ENV 1 -> WAVES	0-127	Env1 -> Wave Pos Mod
105	B	DIGITAL	UW	0-2	Upper WT Select
106	B	DIGITAL	SW	0-3	Sub Osc Mode
107	B	DIGITAL	KW	0-7	Key -> Wave Mod
108	B	DIGITAL	KF	0-7	Key -> Filter Mod
109	B	DIGITAL	KL	0-7	Key -> Loudness Mod
110	B	DIGITAL	MW	0-9	Mod Wheel -> Wave Mod
111	B	DIGITAL	MF	0-9	Mod Wheel -> Filter Mod
112	B	DIGITAL	ML	0-1	Mod Wheel -> Loudness Mod
113	B	DIGITAL	BD	0-7	Bender Destination
114	B	DIGITAL	BI	0-5	Bender Interval
115	B	DIGITAL	TW	0-2	Touch -> Wave Mod
116	B	DIGITAL	TF	0-2	Touch -> Filter Mod
117	B	DIGITAL	TL	0-2	Touch -> Loudness Mode
118	B	DIGITAL	TM	0-1	Touch -> Mod Wheel
119	B	DIGITAL	VF	0-3	Velocity -> Filter Mod
120	B	DIGITAL	VL	0-3	Velocity -> Loudness Mod

Global SysEx

Byte	Parameter	Range	Synth Tribe	Notes	Parameters
0	MIDI	0-16	YES	MIDI Channel	0 = off
1	TTUNE	0-99	YES	Tuning: 400-499 Hz	
2	SYSEX	0/1	NO	SysEx RX/TX	on/off
3	LOCAL	0/1	YES	Local	on/off
4	EXP_PED	0-5	YES	Expression Pedal Mode	(see Table)
5	TOUCH	0-3	YES	Channel Aftertouch Mode	(see Table)
6	BRT	0-99	YES	LCD Brightness	
7	CNT	0-99	YES	LCD Contrast	
8	PAR-COM	0-3	YES	Edit Parameters MIDI RX/TX	(see Table)
9	FIRM	0/1	YES	Firmware Enhancements	on/off
10	OSC	0/1	YES	Oscillator Enhancements	on/off
11	LFO	0/1	YES	LFO Enhancements	on/off
12	MOD	0-2 / 11-15 / 21-25	YES	Arp/Seq Mode	(see Table)
13	CLK	00-03 / 12/22/30-33	YES	Clock Source and Rate	(see Table)
14	GAT	1-99	YES	Gate Time	(see Table)
15	DIV	0-6	YES	Clock Division	(see Table)
16	BPM (MSB)	40-240	YES	Tempo (Bits 8-13)	
17	BPM (LSB)	40-240	YES	Tempo (Bits 0-7)	
18	MTN	0/1	YES	Metronome mode	on/off
19	OVP	00/01/10/11	YES	Overdub & Transpose modes	(see Table)

EXP_PED Parameters

0	Off
1	Loudness
2	VCF-Cutoff
3	VCF-Emphasis
4	Wavetable Position
5	Modulation Wheel

Par-Com

0	Off
1	Sound Parameter TX
2	Sound Parameter RX
3	Sound Parameter TX & RX

CLK

Value = Mode + 10*Clock_Rate

Mode	Clock Rate
0 = Internal	0 = 1 ppqn
1 = DIN MIDI	1 = 2 ppqn
2 = USB MIDI	2 = 24 ppqn
3 = Analog Trigger	3 = 48 ppqn

OVP

Value = Overdub + 10*Key_Transpose

Overdub	Key_Transpose
0 = Disabled	0 = Enabled
1 = Enabled	1 = Disabled

Touch

0	Off
1	MIDI TX
2	MIDI RX
3	MIDI TX & RX

MOD

Value = Mode_A + 10*Mode_B

Mode_A	Mode_B
0 = Sequencer	(0 when Mode_A=0)
1 = Arpeggiator 1	1 = Up
2 = Arpeggiator 2	2 = Down
	3 = Up & Down
	4 = Random
	5 = Moving

DIV

0	¼ Note
1	⅛ Note
2	⅓ Note
3	½ Note
4	¾ Note Triplet
5	⅞ Note Triplet
6	⅙ Note Triplet

Sequencer SysEx Data

Byte	Parameter Name	Range	Notes
0	GAT	0-99	
1	DIV	0-6	
2	Step-1 / Voice-1	0-127	Seq Data
3	Step-1 / Voice-2	0-127	
4	Step-1 / Voice-3	0-127	
5	Step-1 / Voice-4	0-127	
6	Step-1 / Voice-5	0-127	
7	Step-1 / Voice-6	0-127	
8	Step-1 / Voice-7	0-127	
9	Step-1 / Voice-8	0-127	
10	Step-2 / Voice-1	0-127	
11	Step-2 / Voice-2	0-127	
...	
513	Step-64 / Voice-8	0-127	
514	Step-1 / Attr. Byte	0-127	Attribute Byte for Step-1
...			
577	Step-64 / Attr. Byte	0-127	Attribute Byte for Step-64

Wave Specific SysEx

PKT = 0x74 (Wave specific):

SPKT: 0x04 → Initiate Calibration

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Calib Type	F7
----	---------	----------	-----------	------	------	------------	----

Type: 0=VCA/VCF 1=CV-IN 2=MOD Wheel 3=PITCH Wheel

SPKT: 0x05 → Program Preset Sound Parameters Dump Request

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Bank Num	Preset Num	F7
----	---------	----------	-----------	------	------	----------	------------	----

SPKT: 0x06 → Response for Program Preset Sound Parameters Dump Request / Dump to WAVE Preset Sound Parameters (and store to Preset#):

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Bank Num	Preset Num	Version	D0	...	Dn	Checksum	F7
----	---------	----------	-----------	------	------	----------	------------	---------	----	-----	----	----------	----

D0 ... Dn: Preset Value (n = 120)
Checksum = (u8)(D0+...+Dn)&0x7F

SPKT: 0x07 → Edit Buffer Sound Parameters Dump Request

F0	Manu ID	Model ID	Device ID	0x74	SPKT	F7
----	---------	----------	-----------	------	------	----

SPKT: 0x08 → Response for Edit Buffer Sound Parameters Dump Request / Dump Sound Parameters to WAVE Edit Buffer:

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Version	D0	...	Dn	Checksum	F7
----	---------	----------	-----------	------	------	---------	----	-----	----	----------	----

D0 ... Dn: Preset Value (n = 120)
Checksum = (u8)(D0+...+Dn)&0x7F

SPKT: 0x0A → Response for Dump to WAVE Preset Sound Parameters (and store to Preset#):

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Bank Num	Preset Num	Status	F7
----	---------	----------	-----------	------	------	----------	------------	--------	----

Status: 0 = Data Length/Checksum were wrong / 1 = Success

SPKT: 0x0C → Response to Dump Sound Parameters to WAVE Edit Buffer:

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Status	F7
----	---------	----------	-----------	------	------	--------	----

Status: 0 = Data Length/Checksum were wrong / 1 = Success

SPKT: 0x0D → Program Sequencer Data Dump Request

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Bank Num	Preset Num	F7
----	---------	----------	-----------	------	------	----------	------------	----

SPKT: 0x0E → Response for Program Sequencer Data Dump Request / Dump to WAVE Sequencer Data (and store to Preset#):

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Bank Num	Preset Num	Version	D0	...	Dn	Checksum	F7
----	---------	----------	-----------	------	------	----------	------------	---------	----	-----	----	----------	----

D0 ... Dn: Preset Value (n = 577)
Checksum = (u8)(D0+...+Dn)&0x7F

SPKT: 0x0F → Edit Buffer Sequencer Data Dump Request

F0	Manu ID	Model ID	Device ID	0x74	SPKT	F7
----	---------	----------	-----------	------	------	----

SPKT: 0x10 → Response for Edit Buffer Sequencer Data Dump Request / Dump Sequencer Data to WAVE Edit Buffer:

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Version	D0	...	Dn	Checksum	F7
----	---------	----------	-----------	------	------	---------	----	-----	----	----------	----

D0 ... Dn: Preset Value (n = 577)
Checksum = (u8)(D0+...+Dn)&0x7F

SPKT: 0x12 → Response for Dump to WAVE Sequencer Data (and store to Preset#):

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Bank Num	Preset Num	Status	F7
----	---------	----------	-----------	------	------	----------	------------	--------	----

Status: 0 = Data Length/Checksum were wrong / 1 = Success

SPKT: 0x14 → Response to Dump Sequencer Data to WAVE Edit Buffer:

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Status	F7
----	---------	----------	-----------	------	------	--------	----

Status: 0 = Data Length/Checksum were wrong / 1 = Success

SPKT: 0x5D → WAVE User Wavetable Receive

F0	Manu ID	Model ID	Device ID	0x74	SPKT	WAVE Num	Position	Version	D0	...	Dn	Checksum	F7
----	---------	----------	-----------	------	------	----------	----------	---------	----	-----	----	----------	----

WAVE Num:

- 0 → Store in Edit Listen Buffer and treat data as a wavetable.
- 1 → Store in Edit Listen Buffer and treat data as a transient (sample).
- 32-127 → Store in User WT location (32-63 is used as TR, 64-127 is used as WT)

Position determines the Wave slot in Wavetable (0-63)
 (After the Wavetable data for Position 63 has been received it will be stored.
 If the Edit Buffer was the selected destination, it will be used as the active Wavetable).
 D0 ... Dn: Encoded Sample data (n = 308)

SPKT: 0x5E → Response for WAVE User Wavetable Receive

F0	Manu ID	Model ID	Device ID	0x74	SPKT	WAVE Num	Position	Status	F7
----	---------	----------	-----------	------	------	----------	----------	--------	----

Status: 0 = Data Length/Checksum were wrong / 1 = Success

SPKT: 0x5F → TR/WT Slot Usage/Name List Data Dump Request

F0	Manu ID	Model ID	Device ID	0x74	SPKT	F7
----	---------	----------	-----------	------	------	----

SPKT: 0x60
 Response for TR/WT Slot Usage/Name List Data Dump Request

F0	Manu ID	Model ID	Device ID	0x74	SPKT	Version	D0	...	Dn	Checksum	F7
----	---------	----------	-----------	------	------	---------	----	-----	----	----------	----

D0 ... Dn: Preset Value (n = 1535). The data contains:
 0000-0015: TR-32 "Slot Name" (16 ASCII character bytes 0x20-0x7e)
 (...)
 0496-0511: TR-63 "Slot Name" (16 ASCII character bytes 0x20-0x7e)
 0512-0527: WT-64 "Slot Name" (16 ASCII character bytes 0x20-0x7e)
 (...)
 1520-1535: TR-127 "Slot Name" (16 ASCII character bytes 0x20-0x7e)
 CheckSum = (u8)(D0+...+Dn)&0x7F

PKT = 0x75 / 0x76 / 0x77 (Wave specific):

PKT: 0x75 → Request Global Parameters Values

F0	Manu ID	Model ID	Device ID	0x75	F7
----	---------	----------	-----------	------	----

PKT: 0x76 → Response for Global Parameters Dump Request /
 Dump Global Parameters to WAVE:

F0	Manu ID	Model ID	Device ID	0x76	Version	D0	...	Dn	Checksum	F7
----	---------	----------	-----------	------	---------	----	-----	----	----------	----

D0 ... Dn: Global Data (n = 19)
 CheckSum = (u8)(D0+...+Dn)&0x7F

BEHRINGER WAVE MIDI SysEx Wave Table data package format

The data block starts with 16 bytes which are ASCII characters for the TR/WT name:
 Bytes 0-15: 0x20-0x7e (ASCII Character 32-126)

After that follows 128 x 16 bit of PCM sample data (signed INT - Hi-Byte, Lo-Byte)

However, since in Midi SysEx messages bytes can only use the lower 7 bit, the data is encoded in 7 byte blocks. An additional byte is added at the beginning of each block which contains the highest bits of the 7 bytes:

Source Data:

- byte 0: [a7] [a6] [a5] [a4] [a3] [a2] [a1] [a0]
- byte 1: [b7] [b6] [b5] [b4] [b3] [b2] [b1] [b0]
- byte 2: [c7] [c6] [c5] [c4] [c3] [c2] [c1] [c0]
- byte 3: [d7] [d6] [d5] [d4] [d3] [d2] [d1] [d0]
- byte 4: [e7] [e6] [e5] [e4] [e3] [e2] [e1] [e0]
- byte 5: [f7] [f6] [f5] [f4] [f3] [f2] [f1] [f0]
- byte 6: [g7] [g6] [g5] [g4] [g3] [g2] [g1] [g0]

Gets transmitted as:

- byte 0: [0] [g7] [f7] [e7] [d7][c7] [b7] [a7]
- byte 1: [0] [a6] [a5] [a4] [a3][a2] [a1] [a0]
- byte 2: [0] [b6] [b5] [b4] [b3][b2] [b1] [b0]
- byte 3: [0] [c6] [c5] [c4] [c3] [c2] [c1] [c0]
- byte 4: [0] [d6] [d5] [d4] [d3] [d2] [d1] [d0]
- byte 5: [0] [e6] [e5] [e4] [e3] [e2] [e1] [e0]
- byte 6: [0] [f6] [f5] [f4] [f3] [f2] [f1] [f0]
- byte 7: [0] [g6] [g5] [g4] [g3] [g2] [g1] [g0]

The encoding of the 256 bytes results in 36 blocks of 7+1 bytes. The remaining 4 bytes are encoded in the same way:

Source Data:

- byte 0: [a7] [a6] [a5] [a4] [a3] [a2] [a1] [a0]
- byte 1: [b7] [b6] [b5] [b4] [b3] [b2] [b1] [b0]
- byte 2: [c7] [c6] [c5] [c4] [c3] [c2] [c1] [c0]
- byte 3: [d7] [d6] [d5] [d4] [d3] [d2] [d1] [d0]

Gets transmitted as:

- byte 0: [0] [--] [--] [--] [d7][c7] [b7] [a7]
- byte 1: [0] [a6] [a5] [a4] [a3][a2] [a1] [a0]
- byte 2: [0] [b6] [b5] [b4] [b3] [b2] [b1] [b0]
- byte 3: [0] [c6] [c5] [c4] [c3] [c2] [c1] [c0]
- byte 4: [0] [d6] [d5] [d4] [d3] [d2] [d1] [d0]

The total number of bytes in the data block is:


16 ASCII bytes + 36 x blocks of (7+1) bytes + one block of (4+1) bytes = 309 bytes

Troubleshooting

Q1. Voices are out of tune.

- Check if any of the SEMIT and/or DETU settings in the Tuning menu are enabled. Make sure global TUNE is set to 440 in the Program menu.
- Perform VCA and VCF calibration. For more information about how to perform calibration please refer to the calibration section above.
- Check MO, SO, EO, ES settings in the Digital menu.

Q2. The synth does not generate any sound.

- Check that output audio is connected to your sound system.
- Check that the master volume control  is above minimum level.
- Check that LOC is enabled in the Program menu.
- Make sure ENV1->Loudness is not set to Zero.

Q3. After touch does not work

- Check that TOUCH parameter in User menu is correctly configured.
- Check whether the other modulation sources are maximising the modulation.
- If you are using an external keyboard, check that it is transmitting on the right MIDI channel.

Q4. Wave does not respond to external MIDI.

- Verify that your midi source is correctly connected to Wave (MIDI DIN or USB) and that you are transmitting on the right MIDI channel. You can change the Wave MIDI channel from the Program menu (MIDI: --).
- If CC messages are involved, please verify that the PARAM settings in User menu are correctly configured.

Q5. Wave does not send MIDI data

- Check that Wave is connected to destination MIDI device.
- Check that the Wave MIDI channel corresponds to the destination MIDI channel.
- If CC messages are involved, please verify that the PARAM settings in the User menu are correctly configured.

Q5. Some of the modulation sources in the Digital menu do not affect the sound.

- In the WAVE some modulation sources can be summed up. This means that if the modulation limit is reached, any additional modulation will not have any effect.

Q6. Sequencer / Arpeggiator do not start when connected to external sequencer

- Make sure sequence is stored
- Check that Wave is connected to external device and MIDI channel is correct
- Check that input source is correctly configured in the Sequencer menu (CLK: --)

Q7. CV IN does not work properly.

- If notes are out of tune, perform CV Input calibration.
- Make sure Gate signal is connected to WAVE and your source device is transmitting the signals.
- Make sure your external device is working correctly.

Q8. SynthTribe (or other apps) do not detect the Wave over USB

- Try a different USB lead, especially if you are using a long one.
- If you are using a USB hub try bypassing it by making a direct connection between your computer and the Wave.

Q9. SynthTribe is unable to communicate with the Wave

- Check that the SYSEX parameter in the Program menu is set to 1.

Q10. Some notes in the upper octaves produce no sound

- Check if there is a large SEMIT detuning in place in the Tuning menu. Large SEMIT detunes can take the Wave above its MIDI note limit.

Glossary

ADSR – Envelope generator with four stages: Attack, Decay, Sustain and Release.

Amplitude – The volume of a sound.

Aftertouch – MIDI data sent when pressure is applied to the keyboard after keys have been played, but while they are still being held.

Arpeggiator – a part of the synthesizer which causes the notes of a chord to be played individually as an arpeggio according to settings.

Attack Time – The first stage of the envelope. Specified as the time taken for the envelope to reach maximum level when keys are played.

Attenuate – To reduce the level of a signal or modulation source.

Bank – A collection of a number of programs.

Basis – controls the positioning of notes across the stereo field.

Cent – Unit of measurement for tuning. One semitone is divided into 100 cents.

Cutoff Frequency – The point at which the filter starts to cut frequencies.

Decay Time – The second stage of the envelope. Specified as the time taken for the sound level to drop from maximum to the sustain level while the played keys are being held.

Digital Audio Workstation (DAW) – A computer based software package that allows the recording, editing and playing back of audio and/or MIDI data.

Division – the fraction of a whole note ($\frac{1}{4}$, $\frac{1}{8}$ etc) that is set for use by the sequencer and arpeggiator.

Emphasis – The emphasis of frequencies centered on the cutoff frequency. Also known as Resonance.

Envelope Generator – Envelope generators can be used to contour the sound. Most commonly used to affect the amplitude (volume) of the sound they can also be used on filters and to affect pitch.

Filter – Filters attenuate the frequencies above or below their cutoff point, thus affecting the timbre of the sound.

Frequency Modulation (FM) – The use of one frequency to modulate another. Typically the use of a low frequency from a low frequency oscillator to add vibrato or tremolo to a sound, but could also be the use of one audio level frequency to modulate another, which would cause a change in timbre.

Global – parameters that affect all programs.

Group – each of the Wave's programs has two sounds, from group A and group B, which can be combined in different ways according to the keyboard mode selected.

Hertz (Hz) – Unit of measurement for frequencies. 1 Hz is one cycle per second.

Invert – change to the opposite, so a positive becomes negative for example.

Keyboard Tracking – Use of the notes played on the keyboard to adjust another parameter, for example.

KiloHertz (kHz) – Common abbreviation for one thousand Hz.

Low Frequency Oscillator (LFO) – An oscillator that runs at a low speed and is used to modulate other parts of the synthesizer.

Musical Instrument Digital Interface (MIDI) – a protocol that allows musical instruments, other peripherals and DAWs to pass data according to a defined standard.

MIDI Clock – a timing signal that is sent as part of the MIDI data.

MIDI Message – data transmitted from one MIDI device to another that constitutes an instruction.

Mix – The balance between two or more signals.

Modulation – The use of sources to control a parameter of a destination.

Monophonic – Only allowing one note to be played at a time.

Noise – A random sound comprising of all frequencies.

Note Priority – Determines which note is played when the maximum number is exceeded. Typically lowest, highest or last.

Octave – A measure of pitch.

Oscillator – The basic sound source of the synthesizer.

Oscillator Sync – The process by which the cycle of one oscillator is synchronized to the cycle of another.

Output – Can refer both to the signal sent out from one part of the synthesizer to another, or to the physical sockets used to connect to external equipment.

Overdub – sets whether notes played on a sequencer step are added to the existing notes on that step; or whether they replace them.

Parameter – A setting whose value can be changed.

Pitch Bend – Changing the pitch of a note up or down while it is being played.

Polyphonic – Capable of playing more than one note at a time, expressed as a number of voices.

Portamento – The effect of 'gliding' the pitch between notes rather than changing instantly.

Program – A stored combination of parameters that make up a sound.

Pulse Wave – A wave similar to a square wave, but whose symmetry can be changed.

Pulse Width Modulation – The modulation of the symmetry of a pulse wave.

Rate – The speed at which an action takes place.

Release Time – The final stage of the envelope. Specified as the time taken for the envelope to reach zero once keys have been released.

Sample & Hold (S&H) – the sampling of a waveform, typically that of an LFO or noise source, to provide a series of voltages at a set rate.

Sawtooth – A waveform resembling the teeth of a saw, with an instantaneous leading edge followed by a gradual decline to zero point.

Self Oscillation – The point at which a filter starts to produce a sine wave output owing to excessive use of emphasis (resonance).

Semitone – A measure of pitch. Each octave contains 12 semitones.

Sequencer – A part of the synthesizer which can be programmed with a series of notes and/or chords which are then repeated back at a selected tempo.

Signal Flow – The path of a signal from one part of the synthesizer to another.

Sine Wave – A smooth waveform that contains only the fundamental frequency with no harmonics.

Square Wave – a symmetrical waveform which changes instantaneously from zero state to full.

Sub-Oscillator – In the case of the WAVE it is simply a 'second Oscillator'.

Sustain Level – The third stage of the envelope. This is the level that the envelope holds at after decay until keys are released.

Synchronization (Sync) – Co-ordinating the timing of devices where one is the master and the other(s) are synchronized to it.

System Exclusive (SysEx) – a system of device-specific messages that allows control over the instrument's functions.

Transient – a sample that is used in place of a wavetable (see below) whose start, end and looping can be manually adjusted or modulated.

Trigger – The activation of a function, for example pressing a key to start the Envelope cycle.

Tune – The adjustment of the pitch of an instrument to be the same as that of another instrument; or the adjustment of one oscillator to be in tune with the other.

Unison – Two or more voices played together on the same key(s).

Universal Serial Bus (USB) – An interface that can be used to connect your synthesizer to a DAW, or to receive firmware updates.

Velocity – The strength at which the keyboard is played, which can be used as a modulation source.

Voltage Controlled Amplifier (VCA) – An amplifier whose level can be adjusted by control voltages, for example from an envelope generator.

Wavetable – the basic audio source for the Wave. Each wavetable contains 64 128 bit waveshapes, which can be 'swept' manually or by a modulation source.

SynthTribe

The SynthTribe app is a convenient way to quickly change some commonly used parameters on the Wave without using menus; and to check for firmware updates. When you first connect your Wave to SynthTribe it will automatically pick up the Wave's settings for the parameters concerned. Please note that this is the only communication from Wave to SynthTribe: if you change any settings on the Wave subsequently SynthTribe will not update unless it is closed and then started again.

Other important information

EN Important information

1. Register online. Please register your new Music Tribe equipment right after you purchase it by visiting musictribe.com. Registering your purchase using our simple online form helps us to process your repair claims more quickly and efficiently. Also, read the terms and conditions of our warranty, if applicable.

2. Malfunction. Should your Music Tribe Authorized Reseller not be located in your vicinity, you may contact the Music Tribe Authorized Fulfiller for your country listed under "Support" at musictribe.com. Should your country not be listed, please check if your problem can be dealt with by our "Online Support" which may also be found under "Support" at musictribe.com. Alternatively, please submit an online warranty claim at musictribe.com BEFORE returning the product.

3. Power Connections. Before plugging the unit into a power socket, please make sure you are using the correct mains voltage for your particular model. Faulty fuses must be replaced with fuses of the same type and rating without exception.

FR Informations importantes

1. Enregistrez-vous en ligne. Prenez le temps d'enregistrer votre produit Music Tribe aussi vite que possible sur le site Internet musictribe.com. Le fait d'enregistrer le produit en ligne nous permet de gérer les réparations plus rapidement et plus efficacement. Prenez également le temps de lire les termes et conditions de notre garantie.

2. Dysfonctionnement. Si vous n'avez pas de revendeur Music Tribe près de chez vous, contactez le distributeur Music Tribe de votre pays : consultez la liste des distributeurs de votre pays dans la page "Support" de notre site Internet musictribe.com. Si votre pays n'est pas dans la liste, essayez de résoudre votre problème avec notre "aide en ligne" que vous trouverez également dans la section "Support" du site musictribe.com. Vous pouvez également nous faire parvenir directement votre demande de réparation sous garantie par Internet sur le site musictribe.com AVANT de nous renvoyer le produit.

3. Raccordement au secteur. Avant de relier cet équipement au secteur, assurez-vous que la tension secteur de votre région soit compatible avec l'appareil. Veillez à remplacer les fusibles uniquement par des modèles exactement de même taille et de même valeur électrique — sans aucune exception.

PT Outras Informações Importantes

1. Registre-se online. Por favor, registre seu novo equipamento Music Tribe logo após a compra visitando o site musictribe.com. Registrar sua compra usando nosso simples formulário online nos ajuda a processar seus pedidos de reparos com maior rapidez e eficiência. Além disso, leia nossos termos e condições de garantia, caso seja necessário.

2. Funcionamento Defeituoso. Caso seu fornecedor Music Tribe não esteja localizado nas proximidades, você pode contatar um distribuidor Music Tribe para o seu país listado abaixo de "Suporte" em musictribe.com. Se seu país não estiver na lista, favor checar se seu problema pode ser resolvido com o nosso "Suporte Online" que também pode ser achado abaixo de "Suporte" em musictribe.com. Alternativamente, favor enviar uma solicitação de garantia online em musictribe.com ANTES da devolução do produto.

3. Ligações. Antes de ligar a unidade à tomada, assegure-se de que está a utilizar a voltagem correcta para o modelo em questão. Os fusíveis com defeito terão de ser substituídos, sem qualquer excepção, por fusíveis do mesmo tipo e corrente nominal.

ES Aspectos importantes

1. Registro online. Le recomendamos que registre su nuevo aparato Music Tribe justo después de su compra accediendo a la página web musictribe.com. El registro de su compra a través de nuestro sencillo sistema online nos ayudará a resolver cualquier incidencia que se presente a la mayor brevedad posible. Además, aproveche para leer los términos y condiciones de nuestra garantía, si es aplicable en su caso.

2. Averías. En el caso de que no exista un distribuidor Music Tribe en las inmediaciones, puede ponerse en contacto con el distribuidor Music Tribe de su país, que encontrará dentro del apartado "Support" de nuestra página web musictribe.com. En caso de que su país no aparezca en ese listado, acceda a la sección "Online Support" (que también encontrará dentro del apartado "Support" de nuestra página web) y compruebe si su problema aparece descrito y solucionado allí. De forma alternativa, envíenos a través de la página web una solicitud online de soporte en periodo de garantía ANTES de devolvernos el aparato.

3. Conexiones de corriente. Antes de enchufar este aparato a una salida de corriente, asegúrese de que dicha salida sea del voltaje adecuado para su modelo concreto. En caso de que deba sustituir un fusible quemado, deberá hacerlo por otro de idénticas especificaciones, sin excepción.

DE Weitere wichtige Informationen

1. Online registrieren. Bitte registrieren Sie Ihr neues Music Tribe-Gerät direkt nach dem Kauf auf der website musictribe.com. Wenn Sie Ihren Kauf mit unserem einfachen online Formular registrieren, können wir Ihre Reparaturansprüche schneller und effizienter bearbeiten. Lesen Sie bitte auch unsere Garantiebedingungen, falls zutreffend.

2. Funktionsfehler. Sollte sich kein Music Tribe Händler in Ihrer Nähe befinden, können Sie den Music Tribe Vertrieb Ihres Landes kontaktieren, der auf musictribe.com unter „Support“ aufgeführt ist. Sollte Ihr Land nicht aufgelistet sein, prüfen Sie bitte, ob Ihr Problem von unserem „Online Support“ gelöst werden kann, den Sie ebenfalls auf musictribe.com unter „Support“ finden. Alternativ reichen Sie bitte Ihren Garantieanspruch online auf musictribe.com ein, BEVOR Sie das Produkt zurücksenden.

3. Stromanschluss. Bevor Sie das Gerät an eine Netzsteckdose anschließen, prüfen Sie bitte, ob Sie die korrekte Netzspannung für Ihr spezielles Modell verwenden. Fehlerhafte Sicherungen müssen ausnahmslos durch Sicherungen des gleichen Typs und Nennwerts ersetzt werden.

IT Informazioni importanti

1. Registrarevi online. Vi invitiamo a registrare il nuovo apparecchio Music Tribe subito dopo averlo acquistato visitando musictribe.com. La registrazione dell'acquisto tramite il nostro semplice modulo online ci consente di elaborare le richieste di riparazione in modo più rapido ed efficiente. Leggete anche i termini e le condizioni della nostra garanzia, qualora applicabile.

2. Malfunzionamento. Nel caso in cui il rivenditore autorizzato Music Tribe non si trovi nelle vostre vicinanze, potete contattare il Music Tribe Authorized Fulfiller per il vostro paese, elencato in "Support" @ musictribe.com. Se la vostra nazione non è elencata, controllate se il problema può essere risolto tramite il nostro "Online Support" che può anche essere trovato sotto "Support" @ musictribe.com. In alternativa, inviate una richiesta di garanzia online su musictribe.com PRIMA di restituire il prodotto.

3. Collegamento all'alimentazione. Prima di collegare l'unità a una presa di corrente, assicuratevi di utilizzare la tensione di rete corretta per il modello specifico. I fusibili guasti devono essere sostituiti, senza eccezioni, con fusibili dello stesso tipo e valore nominale.

NL Belangrijke informatie

- 1. Registreer online.** Registreer uw nieuwe Music Tribe-apparaat direct nadat u deze hebt gekocht door naar musictribe.com te gaan. Door uw aankoop te registreren via ons eenvoudige online formulier, kunnen wij uw reparatieclaims sneller en efficiënter verwerken. Lees ook de voorwaarden van onze garantie, indien van toepassing.
- 2. Storing.** Mocht uw door Music Tribe geautoriseerde wederverkoper niet bij u in de buurt zijn gevestigd, dan kunt u contact opnemen met de door Music Tribe Authorized Fulfiller voor uw land vermeld onder "Support" op musictribe.com. Als uw land niet in de lijst staat, controleer dan of uw probleem kan worden opgelost door onze "Online Support", die u ook kunt vinden onder "Support" op musictribe.com. U kunt ook een online garantieclaim indienen op musictribe.com VOORDAT u het product retourneert.
- 3. Stroomaansluitingen.** Voordat u het apparaat op een stopcontact aansluit, moet u ervoor zorgen dat u de juiste netspanning voor uw specifieke model gebruikt. Defecte zekeringen moeten zonder uitzondering worden vervangen door zekeringen van hetzelfde type en dezelfde waarde.

SE Viktig information

- 1. Registrera online.** Registrera din nya Music Tribe-utrustning direkt efter att du köpt den genom att besöka musictribe.com. Att registrera ditt köp med vårt enkla onlineformulär hjälper oss att behandla dina reparationsanspråk snabbare och mer effektivt. Läs också villkoren i vår garanti, om tillämpligt.
- 2. Fel.** Om din Music Tribe- auktoriserade återförsäljare inte finns i din närhet kan du kontakta Music Tribe Authorized Fulfiller för ditt land listat under "Support" på musictribe.com. Om ditt land inte är listat, kontrollera om ditt problem kan hanteras av vår "Onlinesupport" som också finns under "Support" på musictribe.com. Alternativt kan du skicka in ett online-garantianspråk på musictribe.com INNAN du returnerar produkten.
- 3. Strömanslutningar.** Innan du ansluter enheten till ett eluttag, se till att du använder rätt nätspänning för just din modell. Felaktiga säkringar måste bytas ut mot säkringar av samma typ och märkning utan undantag.

PL Ważna informacja

- 1. Zarejestrować online.** Zarejestruj swój nowy sprzęt Music Tribe zaraz po zakupie na stronie musictribe.com. Zarejestrowanie zakupu za pomocą naszego prostego formularza online pomaga nam szybciej i efektywniej rozpatrywać roszczenia dotyczące naprawy. Przeczytaj również warunki naszej gwarancji, jeśli dotyczy.
- 2. Awaria.** Jeśli Twój autoryzowany sprzedawca Music Tribe nie znajduje się w pobliżu, możesz skontaktować się z autoryzowanym dostawcą Music Tribe dla swojego kraju, wymienionym w sekcji „Wsparcie” na stronie musictribe.com. Jeśli Twojego kraju nie ma na liście, sprawdź, czy Twój problem może zostać rozwiązany przez nasze „Wsparcie online”, które można również znaleźć w sekcji „Wsparcie” na stronie musictribe.com. Alternatywnie, prześlij zgłoszenie gwarancyjne online na musictribe.com PRZED zwrotem produktu.
- 3. Połączenia zasilania.** Przed podłączeniem urządzenia do gniazdka sieciowego upewnij się, że używasz odpowiedniego napięcia sieciowego dla danego modelu. Wadliwe bezpieczniki należy bez wyjątku wymienić na bezpieczniki tego samego typu i wartości.

JP その他の重要な情報

- 1. 登録.** 新しい Music Tribe 機器をご購入後、すぐに musictribe.com にアクセスしてオンライン登録を行ってください。シンプルなオンラインフォームでの登録は、修理請求の処理をより迅速かつ効果率的に行うために役立ちます。また、適用される場合は、保証の利用規約をお読みください。
- 2. 故障.** お近くに Music Tribe 認定販売店がない場合は、musictribe.com の "サポート" セクションに記載されている国別の Music Tribe 認定代理店にお問い合わせください。お住まいの国がリストにない場合は、"オンラインサポート" から問題が解決できるか確認してください。こちらも "サポート" セクションにございます。あるいは、製品を返品する前に、musictribe.com でオンライン保証請求を提出してください。
- 3. 電源接続.** ユニットを電源コンセントに差し込む前に、モデルに適した正しい電圧を使用していることを確認してください。ヒューズが故障した場合は、必ず同じ種類と定格のヒューズに交換してください。

CN 其他的重要信息

- 1. 在线注册.** 购买后, 请访问我们的网站立即注册新的 Music Tribe 设备。使用我们简单的在线表格注册您的购买信息有助于我们更快、更有效地处理您的维修索赔。另外, 请阅读我们保修的条款和条件 (如适用)。
- 2. 无法正常工作.** 如果您所在地区没有 Music Tribe 授权的经销商, 您可以联系您所在国家/地区的 Music Tribe 授权履行者, 其联系方式在 behringer.com 的“支持”部分列出。如果您的国家/地区未列出, 请检查您的问题是否可以通过我们的“在线支持”解决, 该选项也可以在 behringer.com 的“支持”部分找到。或者, 您也可以在退回产品之前在 behringer.com 提交在线保修索赔。
- 3. 电源连接.** 将本设备连接电源前, 请确保使用的电压正确。保险丝需要更换时, 必须使用相同型号及定额的保险丝。

EN

ES

FR

DE

PT

IT

NL

SE

PL

JP

CN

FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION

Behringer

WAVE

Responsible Party Name: **Music Tribe Commercial NV Inc.**

Address: **122 E. 42nd St.1,
8th Floor NY, NY 10168,
United States**

Email Address: **legal@musictribe.com**

WAVE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Important information:

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



Hereby, Music Tribe declares that this product is in compliance with Directive 2014/35/EU, Directive 2014/30/EU, Directive 2011/65/EU and Amendment 2015/863/EU, Directive 2012/19/EU, Regulation 519/2012 REACH SVHC and Directive 1907/2006/EC.

Full text of EU DoC is available at <https://community.musictribe.com/>

EU Representative: Music Tribe Brands DK A/S
Address: Gammel Strand 44, DK-1202 København K, Denmark

UK Representative: Music Tribe Brands UK Ltd.
Address: 8th Floor, 20 Farringdon Street London EC4A 4AB, United Kingdom



Correct disposal of this product: This symbol indicates that this product must not be disposed of with household waste, according to the WEEE Directive (2012/19/EU) and your national law. This product should be taken to a collection center licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the efficient use of natural resources. For more information about where you can take your waste equipment for recycling, please contact your local city office, or your household waste collection service.

We Hear You