

STATEX SKY

Electrostatic Headphones & Portable Electrostatic Headphone Amplifier

USER MANUAL

Thank you for choosing STATEX SKY.

STATEX SKY is a high-performance electrostatic headphone system designed and manufactured for high-fidelity audio reproduction.

Please read this manual carefully before using the headphones and amplifier. Keep this manual for future reference.

1. Package Contents

Depending on the purchased configuration, the package may contain:

- STATEX SKY electrostatic headphones
- STATEX portable electrostatic headphone amplifier
- Headphone connection cable
- Audio input cable
- USB-C charging cable
- User documentation

Package contents may vary depending on configuration and market.

2. About Electrostatic Headphones

Electrostatic headphones operate differently from conventional dynamic or planar magnetic headphones.

The STATEX SKY driver uses an extremely lightweight diaphragm positioned between two stators. A high DC bias voltage is applied to the electrostatic driver, while the audio signal is applied to the stators.

Because of the very low moving mass of the diaphragm, the system is capable of extremely fast transient response and highly detailed sound reproduction.

The headphones require a dedicated electrostatic headphone amplifier and **must not be connected directly to a conventional headphone output**.

3. Important Safety Instructions

Please read these instructions before operating the product.

High Voltage

The electrostatic amplifier generates high internal and output voltages required for operation of the headphones.

Do not open or disassemble the headphones or amplifier.

There are no user-serviceable components inside.

Servicing must be performed only by qualified personnel or by STATEX.

Moisture

Keep the headphones and amplifier dry.

Do not use or store the product:

- in rain;
- near water;
- in bathrooms or other high-humidity environments;
- with wet hands;
- where condensation may occur.

If the product becomes wet, disconnect it and do not use it until it has been inspected and is completely dry.

Hearing Safety

High sound pressure levels may cause permanent hearing damage.

Before starting playback:

1. Reduce the audio source level.
2. Connect the headphones.
3. Start playback.
4. Increase the volume gradually to a comfortable listening level.

Avoid prolonged listening at excessive volume.

Children

Keep the product, cables and packaging materials away from small children.

4. STATEX SKY Electrostatic Headphones

Technical Specifications

Type: Electrostatic headphones

Acoustic design: Open-back

Driver diameter: 99 mm

Driver capacitance: 80 pF without cable

Bias voltage: Minimum 500 V DC (**headphones can withstand up to 800 V DC**)

Frequency capability: Above 100 kHz

Earpads: Replaceable

Headband: Adjustable

Cable length: 2 m

Weight: Approx. 387 g

Specifications may be subject to improvement or modification without prior notice.

5. STATEX Portable Electrostatic Headphone Amplifier

The STATEX portable amplifier is specifically designed to drive capacitive electrostatic headphone loads.

The amplifier uses four parallel high-voltage amplifier sections, with one dedicated amplifier for each stator.

The driver stage operates in Class A and the output stage operates in Class A.

Technical Specifications

Amplifier type: Transistor electrostatic headphone amplifier

Output stage: Class A

Driver stage: Class A

High-voltage amplifiers: Four, one dedicated amplifier for each stator

Bias voltage: 700 V DC

Audio output: 500 V peak at 100 pF load

Rated input level: 400 mV RMS / 140 V per stator

Input impedance: 5 k Ω , line input

Harmonic distortion: $\leq 0.025\%$ at 1 kHz–10 kHz

Supply voltage: 3.7 V DC

Power consumption: 0.56 W at 3.7 V

Battery: Built-in 1400 mAh Li-ion rechargeable battery

Operating time: Up to approximately 7 hours

Charging connector: USB-C

Charging current: 450 mA

Housing: Aluminium alloy

Dimensions: 88 × 46 × 24 mm

Weight: Approx. 100 g including Li-ion battery

Actual battery operating time depends on listening level, source signal and operating conditions.

6. Controls and Connections

The portable amplifier provides connections for:

- STATEX electrostatic headphone output
- Analog line-level audio input
- USB-C charging input
- Power control
- Status indication

Use only the appropriate STATEX headphone connector and compatible cables.

Never force a connector into a socket.

7. Connecting the System

Before connecting the system, reduce the audio source output level.

Step 1 — Connect the Headphones

Insert the STATEX SKY headphone connector fully into the electrostatic headphone output of the amplifier.

Make sure that the connector is correctly aligned.

Do not twist, force or insert the connector at an angle.

Step 2 — Connect the Audio Source

Connect the line-level output of your:

- DAC;
- portable audio player;
- preamplifier;
- streamer;
- computer audio interface;
- or other suitable audio source

to the analog input of the STATEX amplifier.

The rated amplifier input level is **400 mV RMS (effective value, not peak)**.

Step 3 — Switch On

Switch on the STATEX amplifier.

Start playback from the audio source at a low level.

Gradually increase the source level until the desired listening volume is reached.

8. Important — Use Only a Suitable Electrostatic Amplifier

The STATEX SKY is an electrostatic headphone and requires a dedicated high-voltage electrostatic headphone amplifier.

Never connect the SKY headphones directly to:

- a conventional headphone amplifier;
- a speaker amplifier;
- a smartphone headphone output;
- a DAC headphone socket;
- any unidentified high-voltage source.

Incorrect connection may damage the headphones, amplifier or connected equipment.

9. Bias Voltage

The STATEX portable amplifier provides a **700 V DC bias voltage** for the electrostatic headphone driver.

High bias voltage is a normal part of electrostatic headphone operation.

The high-voltage circuitry is contained within the system and should never be accessed by the user.

Do not attempt to measure, modify or adjust the bias voltage unless you are a qualified service technician.

Do not connect electrostatic headphones from another manufacturer unless their electrical requirements and connector configuration have been confirmed as compatible by STATEX.

10. Charging the Amplifier

The amplifier contains a rechargeable **3.7 V, 1400 mAh Li-ion battery**.

Charging is performed through the USB-C port.

Charging Procedure

1. Switch the amplifier off when practical.
2. Connect a suitable USB power adapter to the USB-C charging port.
3. Allow the battery to charge.
4. Disconnect the charging cable when charging is complete.

The nominal charging current is approximately **450 mA**.

Compatible USB Power Supply

The amplifier can be charged using any suitable USB power adapter with an output voltage of **5 V DC** and a current capability of at least **0.5 A (500 mA)**.

A USB power adapter with a higher current rating may also be used, as the amplifier will draw only the current required for charging.

Do not use damaged charging cables, connectors or power supplies.

Do not charge the amplifier if it is wet, excessively hot or physically damaged.

11. Li-ion Battery Safety

The amplifier contains a lithium-ion rechargeable battery.

To reduce the risk of fire, overheating or battery damage:

- do not puncture or crush the amplifier;
- do not expose it to fire;
- do not expose it to excessive heat;
- do not short-circuit the charging connector;
- do not use the product if the battery appears swollen or damaged;
- do not attempt to replace the battery unless authorized by STATEX;
- use a suitable USB charging source;
- discontinue use if the amplifier becomes abnormally hot, emits an unusual smell or shows physical deformation.

For long-term storage, store the amplifier in a cool, dry location.

12. Normal Electrostatic Headphone Behaviour

Electrostatic headphones are highly sensitive mechanical and electrical devices.

Under some circumstances, unusual sounds may occur when putting the headphones on, removing them or rapidly changing the air pressure around the earpads.

A brief clicking, crackling or membrane-related sound caused by pressure changes does not necessarily indicate a defect.

However, persistent crackling, strong channel imbalance, distortion or loss of output should be investigated.

If abnormal operation continues, stop using the product and contact STATEX.

13. Open-Back Design

STATEX SKY uses an open-back acoustic construction.

This provides unrestricted movement of air behind the electrostatic diaphragm and contributes to the natural acoustic presentation of the headphones.

Because of the open-back design:

- external sounds will remain audible;
- people nearby may hear the reproduced audio;
- the headphones do not provide significant isolation from environmental noise.

Use the headphones in a reasonably quiet listening environment for best results.

14. Handling the Headphones

Electrostatic drivers contain extremely thin diaphragms and should be handled with care.

Do not:

- press on the driver grille;
- insert objects through the grille;
- expose the headphones to liquids;
- drop the headphones;
- pull the headphones by the cable;
- place heavy objects on the headphones;
- expose them to excessive dust or humidity.

When disconnecting the cable, hold the connector rather than pulling on the cable.

15. Cleaning

Headphones

Clean the external surfaces using a soft, dry cloth.

The earpads may be gently wiped with an appropriate soft cloth.

Do not use:

- alcohol;
- aggressive cleaning agents;
- solvents;
- aerosol cleaners;
- excessive water.

Never allow liquid to enter the driver assembly.

Amplifier

Disconnect all cables before cleaning.

Use a soft, dry cloth.

Never spray cleaning fluid directly onto the amplifier.

16. Storage

When the system is not in use:

- switch off the amplifier;
- store the headphones in a clean and dry environment;
- avoid direct sunlight;
- avoid high temperatures;
- protect the headphones from dust;
- avoid placing pressure on the earcups or driver grilles.

For extended storage, periodically check the condition of the amplifier and battery.

17. Troubleshooting

No Sound

Check that:

- the amplifier is switched on;
- the battery is charged;
- the headphones are fully connected;
- the audio source is connected correctly;
- the source is playing;
- the source output level is not muted or set too low.

Sound From One Channel Only

Check:

- the headphone connector;
- the audio input cable;
- left/right balance at the source;
- the source device using another known audio system.

If the problem remains, contact STATEX.

Distorted Sound

Reduce the source output level.

Verify that the source is providing a suitable line-level signal.

Check all connectors and cables.

Crackling or Intermittent Sound

Small transient sounds associated with movement or pressure around an electrostatic diaphragm can occur.

Persistent or unusually loud crackling may indicate contamination, excessive humidity, a connection problem or a technical fault.

Stop using the product and contact STATEX if the condition persists.

Amplifier Does Not Switch On

Recharge the battery through the USB-C port.

If the amplifier still does not operate after charging, contact STATEX.

18. Compatibility

STATEX SKY is designed for use with a compatible STATEX electrostatic headphone amplifier.

Electrostatic headphone systems from different manufacturers may use different:

- bias voltages;
- connector pin assignments;
- output voltages;
- electrical configurations.

Physical connector similarity does **not** guarantee electrical compatibility.

Do not use third-party electrostatic amplifiers, adapters or cables unless compatibility has been confirmed.

19. Transportation

Switch the amplifier off before transportation.

Protect the headphones against mechanical impact and pressure.

The amplifier contains a rechargeable **Li-ion battery**. Transportation, particularly air transportation, may therefore be subject to applicable lithium-battery transport regulations.

Transport the product in suitable protective packaging and comply with the requirements of the carrier and applicable local and international regulations.

20. Environmental Information

Do not dispose of the amplifier or its Li-ion battery with unsorted household waste.

Where applicable, dispose of electrical equipment and rechargeable batteries through an authorized collection or recycling system in accordance with local regulations.

21. Service

Do not attempt to repair or modify the electrostatic driver, high-voltage amplifier or battery system yourself.

Opening or modifying the product may create a safety hazard and may affect warranty coverage.

For inspection, repair or replacement parts, contact STATEX or an authorized STATEX distributor.

22. Manufacturer

STATEX

Plovdiv, Bulgaria

Website: statex.pro

23. Technical Summary

STATEX SKY Electrostatic Headphones

Parameter	Specification
Technology	Electrostatic
Acoustic design	Open-back
Driver diameter	99 mm
Driver capacitance	80 pF without cable
Bias voltage	Minimum 500 V DC; headphones can withstand up to 800 V DC
Frequency capability	Above 100 kHz
Cable length	2 m
Weight	Approx. 387 g
Earpads	Replaceable
Headband	Adjustable

STATEX Portable Electrostatic Headphone Amplifier

Parameter	Specification
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Driver stage	Class A
Output stage	Class A
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Bias voltage	700 V DC
Audio output	500 V peak at 100 pF load
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Input impedance	5 k Ω , line input

Parameter	Specification
Harmonic distortion	$\leq 0.025\%$ at 1 kHz–10 kHz
Supply voltage	3.7 V DC
Power consumption	0.56 W at 3.7 V
Battery	Built-in 1400 mAh Li-ion rechargeable battery
Operating time	Up to approx. 7 hours
Charging connector	USB-C
Charging current	450 mA
USB power adapter	5 V DC, minimum 0.5 A
Housing	Aluminium alloy
Dimensions	88 × 46 × 24 mm
Weight	Approx. 100 g including battery

IMPORTANT SAFETY NOTICE

This product generates high voltages internally for the operation of electrostatic headphones. Do not open, modify or attempt to service the product yourself.

Read this manual before use and retain it for future reference.

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