Astell&Kern PPF33 includes MQA technology, which enables you to play back MQA audio files and streams, delivering the sound of the original master recording.
The PPF33 Now Playing status shows green or blue light to indicate that the unit is decoding and playing an MQA stream or file, and denotes provenance to ensure that the sound is identical to that of the source material. It glows blue to indicate it is playing an MQA Studio file, which has either been approved in the studio by the artist/producer or has been verified by the copyright owner.
The MQA logo is a trade mark of MQA Limited. © MQA Limited 2019

Disclaimers

The manufacturer, importer, and distributor shall not be liable for damages including accidental and personal injury due to the improper use or operation of this product. The information in this user manual was written based on current product specifications. The manufacturer, Dreamus Company Limited, regularly adds new features via OTA updates and will continue to apply new technologies in the future. Product specifications may be changed without prior notice. There is no warranty against data loss due to the use of this product.

The device must be used a minimum of 5mm away from the body in normal use conditions.

CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED
BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING
TO THE INSTRUCTIONS

The excessive sound pressure from earphones and headphones can cause hearing loss.

Specifi-cations

General Specifications	
Product Name	SP2000
Model	PPF33
Body Color	Stainless Steel / Copper
Body Material	Stainless Steel / Copper
Display	5.0inch 720x1280 touch display
Supported Audio Formats	WAV, FLAC, WMA, MP3, OGG, APE, AAC, ALAC, AIFF, DFF, DSF, MQA
MQA playback	Services (Tidal Masters), Local files, External USB, MQA-CD(ripped)
Sample rate	PCM : 8kHz ~ 768kHz (8/16/24/32bits per Sample) DSD Native: DSD64(1bit 2.8MHz), Stereo / DSD128(1bit 5.6MHz), Stereo / DSD256(1bit 11.2MHz), Stereo / DSD512(1bit 22.4MHz), Stereo
Output Level	Balance 6.0Vrms, Unbalance 3.0Vrms (Condition No Load)
DAC	AKM AK4499EQ DAC x2 (Dual DAC)
Decoding	Support up to 32bit / 768kHz Bit-to-Bit playback
Input	USB Type-C input (for PC & MAC)
Outputs	PHONES (3.5mm) / Balanced Out (2.5mm, only 4-pole supported) Optical Out (3.5mm)
Charging	9V ⎓1.67A / 5V ⎓2A
Wi-Fi	802.11 a/b/g/n/ac (2.4/5/5.8GHz)
Bluetooth	V4.2 (A2DP, AVRCP, aptX™ HD)
Dimensions	3.00"(76.3mm)(W) x 5.19"(132mm)(H) x 0.61"(15.7mm)(D)
Weight	Stainless steel : 14.49oz(410.8g) / Copper : 15.25oz(432.4g)
Feature Enhancements	Firmware upgrade supported(OTA)
Audio Specifications	
Frequency Response	±0.062dB (Condition: 20Hz~20kHz) Unbalanced / ±0.061dB (Condition: 20Hz~20kHz) Balanced, ±0.68dB (Condition: 10Hz~70kHz) Unbalanced / ±0.67dB (Condition: 10Hz~70kHz) Balanced
S/N	120dB @ 1kHz, Unbalanced / 123dB @ 1kHz, Balanced
Crosstalk	138dB @ 1kHz, Unbalanced / 144dB @ 1kHz, Balanced
THD+N	0.0007% @ 1kHz, Unbalanced / 0.0006% @ 1kHz, Balanced
IMD SMPTE	0.0004% 800Hz 10kHz(4:1) Unbalanced / 0.0004% 800Hz 10kHz(4:1) Balanced
Output impedance	Balanced Out 2.5mm (1ohm) / PHONES 3.5mm (2ohm)
Clock Jitter	25ps(Typ)
Reference Clock Jitter	200 Femto Seconds
Memory	
Built-in Memory	512GB(NAND)
External Memory	microSD(Max. 512GB) x 1
Battery	
Capacity	3,700mAh 3.8V Li-ion Battery
Supported OS	
Supported OS	Windows 7,8,10(32/64bit) Mac OS X 10.7 and up