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AUDIO SPHERE

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Warranty 2 years, Prices in CHF, VAT included, product and price changes reserved, replaces all previous price lists

Topology and Key Features of Aurender Master Clocks

A New Standard of Accuracy and Stability

In a digital audio system, the rate at which digital data is transmitted and received is of utmost importance. Ideally, all devices in the digital signal path should be synchronized. A system's digital source like an Aurender and the D/A converter should receive the same ultra precise and ultra stable synchronized clock signal in order to achieve best possible performance.

The MC20 is both a Master Clock and Word Clock generator reducing jitter to infinitesimal levels, which results in the ultimate timbral purity and rock-steady placement of instruments within a system's soundstage.

At the heart of the MC20 is a **rubidium module that generates a 10MHz master clock reference signal**. The rubidium or popularly **"atomic" clock assures** exceptionally accuracy and stability in both the long and short term and establishes an **unprecedentedly low level of phase noise and jitter**. The reduction of jitter and phase noise **removes any trace of "digital glare"**, and instead provides an **unprecedented level of naturalism** to any digital audio source.

Additionally, MC20 contains **two discrete OCXO word clock modules for generating 44.1 kHz and 48 kHz** frequencies and their multiples. MC20 will independently and simultaneously supply the four 10MHz master clock outputs and four Word Clock outputs (2 at 44.1 kHz and 2 at 48 kHz) for **unprecedented versatility with a wide variety of Aurender and third party equipment**.

MC10 delivers exactly the same performance and benefits as its bigger brother but at a much more accessible price. This is made possible by removing the dual OCXO word clock modules and associated interface technology, which only is applicable with a very limited number of DACs like dCS. In retaining the rubidium-module-based 10MHz master clock generator, power supply structure, and vibration mitigation, MC10 retains 100% of the applicable performance benefits of MC20 in the vast majority of product-pairing scenarios.

MC 20 and MC10 are **compatible with any Aurender component that features a CLOCK INPUT**, which are **N20, W20, W20SE, N30SA and AP20**.

Master Clocks

NEW: MC10	Reference Grade Rubidium-Based 10MHz Master Clock Generator	15990
	Rubidium Master Clock Output: 2x 10MHz 75Ω (BNC), 2x 10MHz 50Ω (BNC)	
	Phase Noise Rubidium: < -130dBc / Hz (10 Hz), < -140dBc / Hz (100 Hz)	
	Freq. Short-term Stability Rubidium: $<2\times10^{-11}$ (1s), $<1\times10^{-11}$ (10s), $<2\times10^{-12}$ (100s)	
	Phase Noise Rubidium: < -130dB/Hz (10Hz), < -140dB/Hz (100Hz)	
	Dimensions: 430 x 87 x 370mm; Weight: 12.9kg	

NEW: MC20	Reference Grade Rubidium-Based 10MHz Master Clock Generator with Discrete OCXO Word Clock Outputs	29990
	As above, but adding discrete OXCO word clock outputs	
	Word Clock Output: channel A 2x 75Ω (BNC), channel A 2x 75Ω (BNC)	
	Phase Noise OCXO: < -90dB/Hz (1Hz), < -115dB/Hz (10Hz), < -127dB/Hz (100Hz), < -143dB/Hz (1kHz)	
	Freq. Stability(OCXO: $< 5 \times 10^{-10}$	
	SPDIF Sync Input: Coaxial BNC, 75Ω (BNC 75Ω)	
	Dimensions: 430 x 127 x 370mm; Weight: 20.3kg	

Topology and Key Features of Aurender Music Servers / Streamers	All Aurender Music Servers / Streamers share the same topology and key features as follows:

Audio Design Topology: all hard- and software are optimsed for music playback
CPU Board: proprietary Aurender circuit board
SSD Playback Caching: improving sound quality, reducing wear of HDD
HDD Storage: not preinstalled, depending on product from 1x 2TB up to 2x 10TB HDD
Control: via proprietary Aurenders apps for Android and Apple iOS devices
Music Files Transfer: through USB2.0 ports via app or Ethernet via computer
Streaming Services: **TIDAL, QOBUZ and Spotify** (user account needed)
Internet Radio: **vTuner** and SHOUTcast internet radio services
Codec Support: MQA (optional on some units), DSD (DSF, DFF), AIFF, ALAC, FLAC, WAV, M4A, APE
Color options: silver and black (black only for some units)
Support: remote internet technical support

Music Servers / Streamers

N150 — 3490

SSD Playback Caching: 240GB
Capacity (not preinstalled): user installable (back panel sliding tray) up to 1x 5TB HDD (15mm height max.)
MQA Core Decoder: optional, available through in-app purchase
Digital Output: 1x USB Audio Class 2.0 (Native DSD up to DSD512, PCM up to 32bit/384kHz)
Digital I/O: 1x double isolated Gigabit Ethernet, 2x USB 3.0 (data transfer)
Power Supply: fanless full-linear and UPS (Uninterruptible Power Supply) system
Display: 3.0'' AMOLED
Dimensions: 215 x 63 x 355mm; Weight: 5.3kg

N200 — 6490

SSD Playback Caching: 240GB
Capacity (not preinstalled): user installable (back panel sliding trays) up to 2x 5TB 2.5″ HDD (15mm height max.)
MQA Core Decoder: optional, available through in-app purchase
Jitter reduction: TCXO based precision clock
Digital Outputs: 1x USB Audio Class 2.0 plug-in module with better isolation (Native DSD up to DSD512, DoP up to DSD256; PCM up to 32bit/384kHz), 1x Coaxial (PCM up to 24bit/192kHz)
Digital I/O: 1x double isolated Gigabit Ethernet, 2x USB 3.0 (data transfer)
Power Supply: fanless full-linear and UPS (Uninterruptible Power Supply) system
Display: full-color 6.9" 1280 x 480 IPS LCD
Dimensions: 330 x 96 x 355 mm; Weight: 9.0 kg

N20 — 12990

SSD Playback Caching: 500GB
Capacity (not preinstalled): user installable (back panel sliding trays) up to 2x 5TB 2.5″ HDD (15mm height max.)
MQA Core Decoder: optional, available through in-app purchase
Critical Listening Mode: system activity is reduced lowering overall noise floor dramatically for best possible sound quality
PCM Upsamling: up to 24bit/192kHz
Jitter reduction: FPGA based all Digital Phase-Locked Loop system with OCXO clock
Optional DSD to PCM conversion: FPGA based, user selectable for non-DSD DACs
Digital Outputs: 1x USB Audio Class 2.0 plug-in module with better isolation (Native DSD up to DSD512, DoP up to DSD256; PCM up to 32bit/384kHz), 1x Coaxial, 1x TOS, 1x AES (PCM up to 24bit/192kHz)
Clock Input: 1x BNC 10MHz 75Ω for clocking to Master Clock MC10 or MC20
Digital I/O: 1x double isolated Gigabit Ethernet, 2x USB 3.0 (data transfer)
Power Supply: fanless full-linear and UPS (Uninterruptible Power Supply) system
Display: Full-Color 8.8" 1920 x 480 wide IPS LCD
Dimensions: 430 x 111 x 355 mm; Weight: 13.5 kg

W20SE — 23990

SSD playback caching: 1TB
Capacity (not preinstalled): 1x 4TB SSD for lowest possible noise level
MQA Core Decoder: optional, available through in-app purchase
Critical Listening Mode: system activity is reduced lowering overall noise floor dramatically for best possible sound quality
PCM Upsamling: single wire mode up to 24bit/192kHz, dual wire mode 32bit/384kHz
Superior Jitter Reduction: FPGA based all Digital Phase-Locked Loop system with improved OCXO clock
Digital Outputs: 1x USB Audio Class 2.0 plug-in module with better isolation (Native DSD up to DSD512, DoP up to DSD256; PCM up to 384kHz), 1x Coaxial, 1x TOS (PCM up to 24bit/192kHz), 2x AES (Dual AES wire mode possible for reference DACs to double the level of resolution up to 32bit7384kHz)
Clock Input: 1x BNC 10MHz 75Ω for clocking to Master Clock MC10 or MC20
Digital I/O: 1x double isolated Gigabit Ethernet, 2x USB 3.0 (data transfer)
Audio Power Supply: LiFePO4 (LFP) Battery
CPU Power Supply: fanless full-linear
SSD Isolation: aluminium casing with floating suspension brackets SSDs, rubber damping
Display: 3.7'' Dual AMOLED
Dimensions: 430 x 127 x 370mm; Weight: 21.1kg

Music Servers / Streamers continued

N30SA	Reference two full sized chassis solution SSD Playback Caching: 480GB Capacity (not preinstalled): 1x 8TB SSD, 1x user installable (back panel sliding tray) up to 1x 5TB 2.5″ HDD (15mm height max.) MQA Core Decoder: optional, available through in-app purchase Critical Listening Mode: system activity is reduced lowering overall noise floor dramatically for best possible sound quality PCM Upsamling: up to 24bit/192kHz Jitter reduction: FPGA based all Digital Phase-Locked Loop system with OCXO clock Optional DSD to PCM conversion: FPGA based, user selectable for non-DSD DACs Digital Outputs: 1x USB Audio Class 2.0 plug-in module with better isolation (Native DSD up to DSD512, DoP up to DSD512; PCM up to 32bit/384kHz), 1x Coaxial, 1x TOS, 1x AES (PCM up to 24bit/192kHz) Clock Input: 1x BNC 10MHz 75Ω for clocking to Master Clock MC10 or MC20 Digital I/O: 1x double isolated Gigabit Ethernet, 2x USB 3.0 (data transfer) Power Supply: fanless full-linear and UPS (Uninterruptible Power Supply) system in separate chassis Display: Full-Color 8.8" 1920 x 480 wide IPS LCD Dimensions: 430 x 106 x 352 mm (each); Weight: 22.0 kg	26490

Music Server / Streamer with CD Ripper / Metadata Editor / Library Manager

ACS100	CD Ripping: State-of-the-Art and superior to dBpoweramp (WAV, FLAC or AIFF) thanks to Aurender's custom engineered software optimised for TEAC CD-ROM Automated Ripping: Software for Acronova Nimbie included (hardware purchsed separately with third party or rented with Audiosphere) SSD Playback Caching: 240GB Capacity (not preinstalled): user installable (back panel sliding tray) 2x 2TB 2.5″ 7mm HDD (Raid1 storage 2 TB) Critical Listening Mode: system activity is reduced lowering overall noise floor dramatically for best possible sound quality MQA Core Decoder: optional, available through in-app purchase Digital Outputs: 1x USB Audio Class 2.0 (Native DSD up to DSD512; DoP DSD256; PCM up to 384kHz) Digital I/O: 1x Gigabit Ethernet, 2x USB 3.0 (data transfer) Power Supply: external DC19V/3.42A Display: 4.0″ ips color LCD Dimensions: 215 x 111 x 257mm; Weight: 5.0kg	3890
ACS10	As above, but features added / improved with regards to: Capacity (not preinstalled): up to 2x 10TB HDD (Raid1 storage up to 10TB) Digital Outputs: 1x USB Audio Class 2.0 with ultra low noise power circuitry (Native DSD up to DSD512; DoP DSD256; PCM up to 768kHz) Digital I/O: 1x double isolated Gigabit Ethernet, 2x Gigabit Ethernet, 2x USB 3.0 (data transfer) Power Supply: fanless full-linear and UPS (Uninterruptible Power Supply) system Display: 4.0″ ips color LCD Dimensions: 430 x 96 x 355mm; Weight: 12.1kg	5890

Music Servers / Streamers with full MQA Digital to Analog Converter

NEW: A1000
SSD Playback Caching: 120GB
Capacity: user installable (back panel sliding trays) up to 1x 5TB 2.5″ HDD (15mm height max.)
Filtering: user selectable digital and analog filters for analog outputs
DA-Conversion: dual mono DSD512 Native, PCM up to 32bit/768kHz AK4490REQ DAC chip
Volume control: Aurender app (velocity sensitive), IR remote or rotary control knob
Analog Output: 1x pair RCA, fixed or variable
Digital Output: 1x USB Audio Class 2.0 (DSD512 Native, PCM up to 32bit/768kHz), 1x SPDIF (24bit/192kHz)
Digital I/O: 1x Gigabit Ethernet, 1x USB 3.0 (data transfer)
Digital Inputs: 1x SPDIF, 1x TOS, 1x HDMI ARC
Wireless Streaming Protocol Support: AirPlay, Bluetooth AptX-HD, Google Cast Audio
Power Supply: fanless full-linear
Trigger Output: 1x 12v for external equipment
Display: 6.9″ 1280 x 480 Wide IPS Color LCD
Dimensions: 330 x 68 x 355mm; Weight: 8.3kg
Color: silver

3490

A200
SSD Playback Caching: 240GB
MQA Core Decoder: included
Capacity (not preinstalled): user installable (back panel sliding trays) up to 1x 5TB 2.5″ HDD (15mm height max.)
Jitter reduction: FPGA based all Digital Phase-Locked Loop system with TCXO clock
Filtering: user selectable digital and analog filters for analog outputs
Upsampling: user selectable upsampling PCM up to 32bit/384kHz
DA-conversion: single stereo DSD512 and 768KHz/32bit next generation AK4490EN DAC chip with linear power supply
Volume control: Aurender app (velocity sensitive), IR remote or rotary control knob
Analog Output: 1x pair RCA, fixed or variable
Digital Outputs: 1x USB Audio Class 2.0 with ultra low noise power circuitry (Native DSD up to DSD256, DoP up to DSD256; PCM up to 32bit/768kHz)
Digital I/O: 1x double isolated Gigabit Ethernet, 2x USB 3.0 (data transfer)
Digital Inputs: 1x RCA Coax, 1x TOS up to 24bit/192kHz, DoP DSD64
Power Supply: fanless full-linear and UPS (Uninterruptible Power Supply) system
Display: full-color 6.9" 1280 x 480 IPS LCD
Dimensions: 350 x 96 x 355 mm; Weight: 9.6 kg

6490

A15
SSD Playback Caching: 240GB
MQA Core Decoder: included
Capacity (not preinstalled): user installable (back panel sliding trays) up to 2x 5TB 2.5″ HDD (15mm height max.)
Jitter reduction: FPGA based all Digital Phase-Locked Loop system with TCXO clock
Filtering: user selectable digital and analog filters for analog outputs
Upsampling: user selectable upsampling PCM up to 32bit/384kHz
DA-conversion: dual-mono DSD512 768KHz/32bit next generation AK4490EN DAC chips with dual-mono linear power supplies
Volume control: Aurender app (velocity sensitive), IR remote or rotary control knob
Analog Output: 1x pair XLR, 1x pair RCA, fixed or variable, adjustable gain level
Digital Outputs: 1x USB Audio Class 2.0 with ultra low noise power circuitry (Native DSD up to DSD256, DoP up to DSD256; PCM up to 32bit/768kHz)
Digital I/O: 1x double isolated Gigabit Ethernet, 2x USB 3.0 (data transfer)
Digital Inputs: 1x RCA Coax, 1x TOS up to 24bit/192kHz, DoP DSD64
Power Supply: fanless full-linear and UPS (Uninterruptible Power Supply) system
Display: full-color 6.9" 1280 x 480 IPS LCD
Dimensions: 430 x 96 x 355 mm; Weight: 12.0 kg

8490

A20
SSD Playback Caching: 480GB
MQA Core Decoder: included
Critical Listening Mode: system activity is reduced lowering overall noise floor dramatically for best possible sound quality
Capacity (not preinstalled): user installable (back panel sliding trays) up to 2x 5TB 2.5″ HDD (15mm height max.)
Jitter reduction: FPGA based all Digital Phase-Locked Loop system with OCXO clock
Filtering: user selectable digital and analog filters for analog outputs
Upsampling: user selectable upsampling PCM up to 32bit/768kHz
DA-conversion: dual-mono DSD512 768KHz/32bit next generation flagship AK4497 DAC chips with dual-mono linear power supplies
Volume control: Aurender app (velocity sensitive), IR remote or rotary control knob
Analog Output: 1x pair XLR, 1x pair RCA, fixed or variable, adjustable gain level
Headphone Outputs: 1x 6.5mm Jack
Digital Outputs: 1x USB Audio Class 2.0 with ultra low noise power circuitry (Native DSD up to DSD512, DoP up to DSD256; PCM up to 32bit/768kHz)
Digital I/O: 1x double isolated Gigabit Ethernet, 2x USB 3.0 (data transfer)
Digital Inputs: 1x RCA Coax, 1x BNC Coax, 2x TOS up to 24bit/192kHz, DoP DSD64
Power Supply: fanless full-linear and UPS (Uninterruptible Power Supply) system
Display: 8.8″ 1920 x 480 ips color LCD
Dimensions: 430 x 111 x 355mm; Weight: 14.2kg

14990

Ms / St w full MQA DAC, CD Ripper / Metadata Editor / Library Manager and Headphone Amp

A30	As above, but features added / improved with regards to: CD Ripping: State-of-the-Art and superior to dBpoweramp (WAV, FLAC or AIFF) thanks to Aurender's custom engineered software optimised for TEAC CD-ROM Automated Ripping: Software for Acronova Nimbie included (hardware purchsed separately with third party or rented with Audiosphere) Capacity (not preinstalled): up to 1x 10TB HDD Headphone Outputs: 1x 4pin XLR Balanced, 1x 6.5mm Jack, 1x 3.5mm Minijack Dimensions: 430 x 141 x 355mm; Weight: 17kg	18990

Amplifier with Digital to Analog Converter

X725	DAC and amplifier Control: remote control, via Aurender Android and iOS app if connected to an Aurender Power rating: 2 x 100W @ 8ohms Inputs: 1x USB, 1x TOS Output: 1x pair Cardas patended binding posts Formats: up to 24/192kHz, DSD in native mode Power Supply: fanless full-linear Dimensions: 215 x 45 x 355mm; Weight: 4.7kg Color: silver	2890

Integrated Music Systems

N150 / X725	N150 musicserver and streaming client + X725 DAC and amplifier	5490
ACS100 / X725	ACS 100 Music Server / Streamer / CD Ripper / Dual HDD Storage / Metadata Editor / Library Manager + X725 DAC and amplifier	5990
NEW: AP20	All-In-One Digital Source and Integrated Amp SSD Playback Caching: 480GB MQA Core Decoder: included Critical Listening Mode: system activity is reduced lowering overall noise floor dramatically for best possible sound quality Capacity (not preinstalled): user installable (back panel sliding trays) up to 2x 5TB 2.5″ HDD (15mm height max.) Jitter reduction: FPGA based all Digital Phase-Locked Loop system with OCXO clock Filtering: user selectable digital and analog filters for analog outputs Upsampling: user selectable upsampling PCM up to 32bit/768kHz DA-conversion: dual-mono DSD512 768KHz/32bit next generation flagship AK4497 DAC chips with dual-mono linear power supplies Analog Volume Control: relay-based R2R stereo attenuator, velocity sensitive operation, via Aurender app, IR remote or rotary control knob Power rating: 2 x 200W @ 8ohms, 2 x 350 @ 4ohms Power Supply: fanless full-linear and UPS (Uninterruptible Power Supply) system, 2x 400VA toroidal transformers (left and right power amps), 2x 50W (left and right audio boards), 1x50W (CPU), 1x25W (FPGA) Power Supply Filter Capacitors: 80000uF, 40000 uF per channel Analog Outputs: 1x XLR (variable), 1x WBT NextGen binding post Headphone Outputs: 1x 6.5mm Jack Digital Inputs: 1x RCA Coax, 1x BNC Coax, 2x TOS up to 24bit/192kHz, DoP DSD64 Clock Input: 1x BNC 10MHz 75Ω for clocking to Master Clock MC10 or MC20 Analog Inputs: 2x RCA in, 1x XLR in Digital I/O: 1x double isolated Gigabit Ethernet, 2x USB 3.0 (data transfer) Display: 8.8″ 1920 x 480 ips color LCD Dimensions: 430 x 150 x 361mm; Weight: 25.9kg	22990

Accessories

UC100	USB Converter: Precision Asynchronous USB Audio 2.0 to SPDIF (COAX, PCM up to 192kHz) converter for use with Aurender music servers with USB audio output only Dimensions: 54 x 145 x 30mm; Weight: 0.28kg Color: silver only	890
NEW: TD100	12V Trigger Dongle Provides an interface to send 12V trigger signal to components with 12V trigger inputs for on/off commands. Amps, poweramps, preamp, dacs, or other components within the hifi system can be switched on and off with an Aurender. Settings can be configured in the Aurender Conductor app. Input: USB 5V (Max 700 mAh) Output Ports: 2x 12V DC (Max 100mAh per Port) Supplied Cables: 1x USB cable 0.4m, 2x Mini Jack trigger cables 2.0m Dimensions: 38 x 40 x 22 mm; Weight: 60g	790