

DSD Player Only

DSD Player with DSP

DSD Player with  
DSP Amplifier

DSP Amplifier

Stand-alone DSP

Accessories

**GOLDHORN**

## **GOLDHORN Product Catalog**

P1 / P2 Pro / P3 Plus

P2 DSP Pro / P5 DSP Ultra

P1 DSPA / P2 DSPA Pro / P3 DSPA Plus

DSPA 206 / DSPA 406 / DSPA 810 SE / DSPA 810 Pro / DSPA 816 Pro

DSPA 1012 Plus / DSPA 1216 Plus / DSPA 1616 Ultra / DSPA 2416 Ultra

DSP10 / DSP16 Ultra

Remote Controller for DSP -GD16 / Panel Controller for Player -T3002

Graphene Super-Capacitor M01 & M02

# GOLDHORN

*In this digital age,  
every car owner who wants quality sound will think of Goldhorn's players...*

## Goldhorn Car Digital Players and DSPs

When we talk about car audio upgrade, music source is surely the soul of the car stereo system. In the past decades, sound enthusiasts used to rely on CD players as music source. However, we are now in the digital age-analog is old school and going digital is an unstoppable trend. Therefore, digital players and DSPs are gradually replacing their CD counterparts.

That said, developing car digital players is more difficult than designing other on-road audio products. To deliver high-fidelity sound, engineers need to ensure each subtlety of the wireless streaming music is restored in harsh, acoustically challenging in-car environment. Due to the difficulty of research and development, only a few companies around the globe have successfully designed and produced in-car digital players, and Goldhorn is proudly one of them.

Our R&D team has spent years developing and upgrading our players, And now we have five product lines - DSD Player Only, DSD Player with DSP, DSD Player with DSP Amplifier, DSP Amplifier and Stand-alone DSP. It is noteworthy that P5 DSP Ultra, with its unique combination of the most refined sound technologies, has truly taken the entire industry to new height.

Since Goldhorn can bring unrivaled acoustics at affordable price, Goldhorn's players quickly sweep the market, taking up the largest proportion in all car digital players sold in China. With its presence in this largest car audio market in the world, where most world-famous car stereo brands choose to compete, Goldhorn has now become one of music devotees' favourite brands.

Goldhorn can achieve this feat of audio engineering because it has a strong technical background. Goldhorn has more than 20 years of experience in designing and producing high end home audio products, and its ODM brands enjoy popularity in North America. Goldhorn also has 15 years of experience in information technology and 10 years of experience in car electronics.

Goldhorn wants to promote its sound technologies and the experience it gained in China internationally, so more car owners can enjoy studio-quality sound from Goldhorn's players when on the road.

Goldhorn sincerely wants to cooperate with brands who are interested in high-quality digital players and DSP, either by wholesale, or by ODM. We warmly welcome you to pay a visit to our head office if you are interested in our devices!



## DSD Player Only - P1

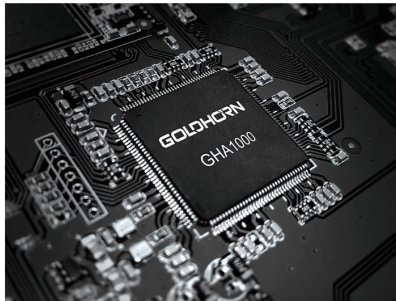
P1 is a pure car digital player with Bluetooth® 5.0 technology. With high level inputs, P1 is compatible with factory head unit and the AUX inputs allow users to connect an additional aftermarket player (e.g. A CD player which is previously installed) to P1. When combined with a DSP, P1 can surely deliver a better audio landscape.

- High-resolution audio files playback: DFF/DSF/WAV/FLAC/APE/AIFF/DSD (up to 256)
- Hi-End components: AKM AK4490 DAC (32-bit / 768 KHz PCM)  
Texas Instruments OPA2604 Operation Amp  
KMG High temperature tolerance electrolytic capacitor (high-reliability under 105°C)
- 4 x High Level Outputs 2 x AUX Inputs
- 1 x Optical Output 1 x Coaxial Output (up to 192 KHz / 24 bit)
- 2 x RCA Outputs
- Intelligent Control: panel control with IPS display,  
wireless digital remote control, APP control
- Lossless streaming via Bluetooth® 5.0 (aptX) and WiFi connection

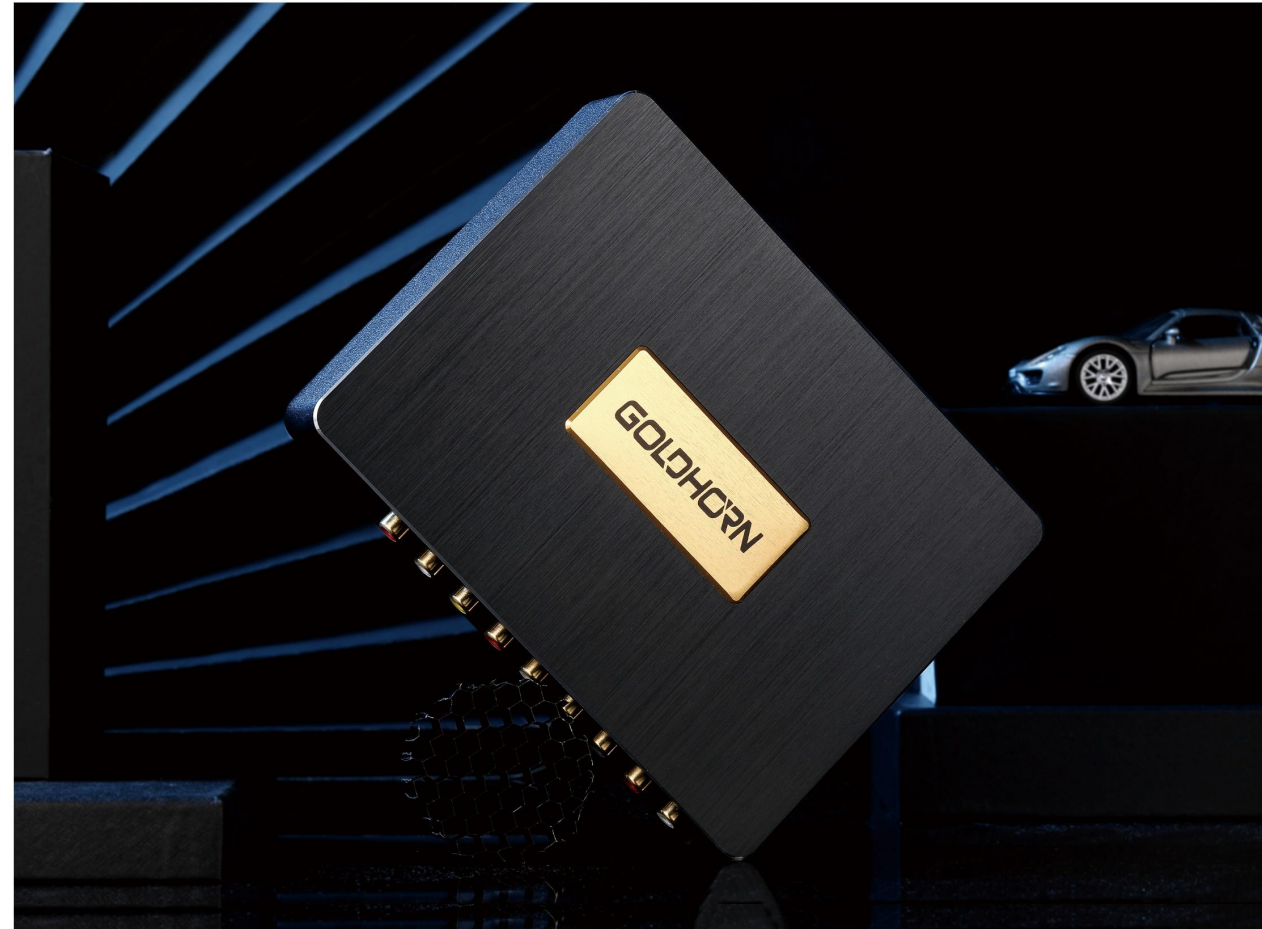


## DSD Player Only – P2 Pro

P2 Pro possesses all the premium components and sound technologies exclusively to this series: Goldhorn-designed digital audio streaming chips, femtosecond clock generators and the customized operating system. There are also two AK4493 chips in P2 Pro. As a high-end pure HiFi player, its coaxial/optical outputs can match professional DSPs. P2 Pro will definitely inject more life into your music by bringing every track closer to the original recording.



- High-resolution audio files playback: DFF/DSF/WAV/FLAC/APE/AIFF/DSD (up to 256)
- Hi-End components:
  - Goldhorn originally designed chip GHA1000
  - High precision femtosecond clock generators
  - Customized operating system
  - 2 x AKM AK4493 DAC (32-bit / 768 KHz PCM)
  - Texas Instruments OPA2604 Operation Amp
  - High temperature tolerance electrolytic capacitor (high-reliability under 105°C)
  - WIMA filter capacitor
- 4 x High Level Inputs 2 x AUX Inputs
- 6 x RCA Outputs 1 x Optical Output 1 x Coaxial Output (up to 192 KHz / 24 bit)
- Intelligent Control: panel control with IPS display, wireless digital remote control, APP control
- Lossless streaming via Bluetooth® 5.0 (aptX HD) and WiFi connection





## DSD Player Only - P3 Plus

P3 Plus is a high-end pure digital player. It is designed to be the best companion to high-end DSPs in the market. Using one ES9028Pro chip, P3 Plus features lower distortion and noise floor, producing closer to the real HiFi music and highly reproducible live sound.

- High-resolution audio files playback: DFF/DSF/WAV/FLAC/APE/AIFF/DSD (up to 256)
- Hi-End components:
  - Goldhorn originally designed chip GHA1000
  - High precision femtosecond clock generators
  - Customized operating system
  - 1 x ESS ES9028Pro DAC (32-bit / 768 KHz PCM)
  - Texas Instruments OPA1612 Operation Amp
  - High temperature tolerance electrolytic capacitor (high-reliability under 105 °C)
  - WIMA filter capacitor
- 4 x High Level Inputs
- 2 x RCA Outputs 1 x Optical Output 1 x Coaxial Output (up to 192 KHz / 24 bit)
- Intelligent Control: panel control with IPS display, wireless digital remote control, APP control
- Lossless streaming via Bluetooth® 5.0 (aptX HD) and WiFi connection





	P1	P2 Pro	P3 Plus
Voltage	DC 11V-16V		
DAC	AK4490	2 x AK4493	1 x ES9028Pro
Op Amp	OPA2604		OPA1612
Capacitor	High temperature tolerance electrolytic capacitor (high-reliability under 105°C)	WIMA filter capacitor, High temperature tolerance electrolytic capacitor (high-reliability under 105°C)	
CPU	four ARM Cortex A7 cores		
Music Formats	Hi-res: DFF/DSF/DSD (up to 256) uncompressed: WAV/FLAC/APE/AIFF compressed: MP3/AAC/OGG/WMA/MV		
Sampling Rate	PCM: 44.1KHz~768KHz/16~32bit DSD: DSD64/DSD128/DSD256		
Inputs	4 x High Level Inputs 2 x AUX Inputs		4 x High Level Inputs
Outputs	2 x RCA Outputs	6 x RCA Outputs	2 x RCA Outputs
Digital Outputs	1 x Coaxial Output (up to 192KHz/24bit) 1 x Optical Output (up to 192KHz/24bit)		
Source Selection	Sound from factory unit/AUX/Player/Auto/Bluetooth		
Bluetooth	Bluetooth® 5.0 Bluetooth Profile: A2DP/AVRCP		
	Audio Codec: aptX/AAC/SBC	Audio Codec: aptX/aptX HD/AAC/SBC	
Wi-Fi Standard	802.11b/g/n		
Intelligent Control	App control Panel control with IPS display 2.4GHz Remote Controller		
USB	USB2.0 HOST x 2 MINI USB x 1	USB2.0 HOST x 3 MINI USB x 1	
Color	Black		
Dimensions in mm	180 x 120 x 36	194 x 145.6 x 40.5	217 x 180 x 43

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## DSD Player with DSP - P2 DSP Pro

P2 DSP Pro is a high end professional digital player, featuring six ES9038Q2M DAC chips. Its 12 channel RCA outputs can fit various upgrade plans, and its optical input makes it compatible with a Hi-End CD player. Besides, there is an integrated professional 31-band DSP in P2 DSP Pro, with phase arbitrarily rotating from 0° degree to 360°.



- High-resolution audio files playback: DFF/DSF/WAV/FLAC/APE/AIFF/DSD (up to 256)
- Hi-End components:

Goldhorn originally designed chip GHA1000  
High precision femtosecond clock generators  
Customized operating system  
6 x ES9038Q2M DAC (32-bit / 768 KHz PCM)  
Texas Instruments OPA2604 Operation Amp  
High temperature tolerant electrolytic capacitor  
(high-reliability under 105° C)  
WIMA filter capacitor

- Integrated Professional DSP:

295 MHz ADI chip with 1.2 billion MAC operations per second  
31-band EQ, crossover frequency and slope, phase inversion,  
time alignment delays individually adjustable for each channel,  
or synchronously adjustable for chosen channels  
5-band EQ, time alignment delays individually adjustable  
for each input channel

- 8 x High Level Inputs 2 x AUX Inputs 1 x Optical Input (up to 96 KHz / 24 bit)
- 12 x RCA Outputs
- Dynamic Loudness Control
- Goldhorn SKYATOM Surround System
- Intelligent Control: panel control with IPS display,  
wireless digital remote control, APP control
- Lossless streaming via Bluetooth® 5.0 (aptX HD) and WiFi connection

## DSD Player with DSP - P5 DSP Ultra

P5 DSP Ultra is Goldhorn's latest flagship Player, designed to redefine the essence of musical beauty. Equipped with two ESS flagship DAC chips, ES9038Pro, and a powerful triple-core DSP processor, it boasts an astonishing floating-point operation speed of up to 3.6 billion calculations per second. With an internal audio sampling rate reaching up to 192KHz, it delivers unrivaled audio fidelity. Featuring an incredibly precise 0.005ms delay stepping, setting an industry-leading standard, the P5 DSP Ultra embodies the pinnacle of sound aesthetics.

- High-resolution audio files playback: DFF/DSF/WAV/FLAC/APE/AIFF/DSD (up to 256, SACD-ISO)
- Hi-End components:
  - 2 x ES9038Pro DAC (32-bit / 768 KHz PCM)
  - AKM Hi-End 768 KHz / 32 bit ADC
  - ESS Hi-End 768 KHz / 32 bit DAC
  - Goldhorn originally designed chip GHA2000
  - 3 femtosecond clock system
  - Hi-End Professional Op Amp
  - High temperature tolerant electrolytic capacitor (high-reliability under 105 °C)
- Integrated Professional DSP:
  - 3-Core 295 MHz ADI chip
  - 30-band EQ, crossover frequency and slope, phase inversion, time alignment delays individually adjustable for each output channel, or synchronously adjustable for chosen channels
  - 5-band EQ, time alignment delays individually adjustable for each input channel
  - Output frequency response: 10Hz--80kHz ( $\pm 1$  dB)
  - 0.005ms delay step
- 16 x High Level Inputs 2 x AUX Inputs
- 1 x Optical Input 1 x Coaxial Input (up to 192 KHz / 24 bit)
- 1 x USB DAC (up to 192 KHz / 32 bit)
- 16 x RCA Outputs
- Dynamic Loudness Control
- Goldhorn SKYATOM Surround System
- Intelligent Control: panel control with IPS display, wireless digital remote control, APP control
- Lossless streaming via Bluetooth® 5.0 (aptX HD) and WiFi connection







	P2 DSP Pro	P5 DSP Ultra
Voltage	DC 11V-16V	
DAC	6 x ES9038Q2M	2 x ES9038Pro
Op Amp	OPA2604	professional Op Amp
Capacitor	High temperature tolerance electrolytic capacitor (high-reliability under 105° C)	
CPU	four ARM Cortex A7 cores	
Music Formats	Hi-res: DFF/DSF/DSD (up to 256) uncompressed: WAV/FLAC/APE/AIFF compressed: MP3/AAC/OGG/WMA/MV	
Sampling Rate	PCM: 44.1kHz~768kHz/16~32bit DSD: DSD64/DSD128/DSD256	
Integrated DSP	31-band EQ and Q factor, Crossover frequency, type and slope, Phase inversion 0°/180°, Time alignment delays independently adjustable for each channel, or synchronously adjustable for chosen channels 5-band EQ, Time alignment delays independently adjustable for each channel Each output channel is added with 2 variable phase rotation functions Variable Phase Rotation from 0° to 360° (step: 1°) Dynamic Loudness Control Goldhorn SKYATOM Surround System	30-band EQ and Q factor, Crossover frequency, type and slope, Phase inversion 0°/180°, Time alignment delays independently adjustable for each channel, or synchronously adjustable for chosen channels 5-band EQ, Time alignment delays independently adjustable for each channel Output frequency response: 10Hz~80kHz (±1dB) 0.005ms precise delay step size Dynamic Loudness Control Goldhorn SKYATOM Surround System
Inputs	8 x High Level Inputs	16 x High Level Inputs
	2 x AUX Inputs	
Digital Inputs	1 x Optical Inputs (up to 96kHz/24bit)	1 x Coaxial Inputs (up to 192kHz/24bit) 1 x Optical Inputs (up to 192kHz/24bit)
Outputs	12 x RCA Outputs	16 x RCA Outputs
Source Selection	Mix mode	
Bluetooth	Bluetooth® 5.0 Bluetooth Profile: A2DP/AVRCP Audio Codec: aptX/aptX HD/AAC/SBC	
USB-DAC	—	44.1kHz~192kHz/24bit~32bit
Wi-Fi Standard	802.11b/g/n	
Intelligent Control	App control Panel control with IPS display 2.4GHz Remote Controller	
USB	USB2.0 HOST x 4	USB2.0 HOST x 3 USB-DAC x 1
Expand	MINI USB x 1	
Color	Gold	Black
Dimensions in mm	241 x 180 x 50	303 x 231 x 50



## DSD Player with DSP Amplifier - P1 DSPA

P1 DSPA is an all-in-one player, which combines a digital player, a 10-channel DSP amplifier and a Bluetooth® 5.0 player. It is a new choice for budget-conscious music fans who want to improve their car audio sound quality in one versatile device.

The use of P1 DSPA is flexible. With the built-in 4-channel amplifier, P1 DSPA can directly drive the 4 speakers of your car. With the 6 RCA outputs, you can achieve 2-way or 3-way active crossover system, or connect P1 DSPA to subwoofers.

Different to P2 DSPA Pro, the built-in amplifier of P1 DSPA is 65 watts Class AB amplifier, so better performance can be heard in the low frequency. Besides, the built-in Bluetooth® 5.0 supports aptX codec, which can ensure sound transmission quality at lower cost.

- High-resolution audio files playback: DFF/DSF/WAV/FLAC/APE/AIFF/DSD (up to 256)
- Hi-End components:
  - TI PCM1690 (24-bit / 192 KHz PCM)
  - Professional Op Amp
  - High temperature tolerance electrolytic capacitor (high-reliability under 105 °C)
- Integrated Professional DSP:
  - 295 MHz ADI chip with 1.2 billion MAC operations per second
  - 31-band EQ, crossover frequency and slope, phase inversion, time alignment delays individually adjustable for each output channel, or synchronously adjustable for chosen channels
  - 5-band EQ, time alignment delays individually adjustable for each input channel
- 4 x 65W/4Ω Max. Integrated Class AB amplifier
- 4 x High Level Inputs 2 x AUX Inputs
- 6 x RCA Outputs 4 x High Level Outputs
- Dynamic Loudness Control
- Intelligent Control: panel control with IPS display, wireless digital remote control, APP control
- Lossless streaming via Bluetooth® 5.0 (aptX) and WiFi connection
- Easy Plug & Play connection





## DSD Player with DSP Amplifier - P2 DSPA Pro

P2 DSPA Pro is specifically designed for high-end cars.

P2 DSPA Pro is an all-round choice with an integrated 31-band EQ DSP module, a high power digital amplifier module and a Bluetooth® 5.0 player module. However, P2 DSPA Pro is more powerful and functional. It features 8-channel high level inputs, so it can perfectly match many high-end vehicles with multiple speakers. Its 8-channel Class D amplifier delivers up to 80 watts, so 3-way active crossover system can be easily achieved. Its 8-channel RCA outputs allow for a wide range of audio upgrade plans. Most importantly, installing P2 DSPA Pro is completely hassle free -with plug & play connection, there is no need to cut wires!

- High-resolution audio files playback: DFF/DSF/WAV/FLAC/APE/AIFF/DSD (up to 256)
- Hi-End components:
  - TI PCM1690 (24-bit / 192 KHz PCM)
  - Professional Op Amp
  - High temperature tolerance electrolytic capacitor (high-reliability under 105 °C)
- Integrated Professional DSP:
  - 295 MHz ADI chip with 1.2 billion MAC operations per second
  - 31-band EQ, crossover frequency and slope, phase inversion, time alignment delays individually adjustable for each output channel, or synchronously adjustable for chosen channels
  - 5-band EQ, time alignment delays individually adjustable for each input channel
- Powerful 8 x 80W/4Ω Max. integrated Class D amplifier
- 8 x High Level Inputs 2 x AUX Inputs
- 8 x RCA Outputs 8 x High Level Outputs
- Dynamic Loudness Control
- Goldhorn SKYATOM Surround System
- Intelligent Control: panel control with IPS display, wireless digital remote control, APP control
- Lossless streaming via Bluetooth® 5.0 (aptX) and WIFI connection





## DSD Player with DSP Amplifier - P3 DSPA Plus

P3 DSPA Plus is designed specifically for 20-channel multi-speaker car upgrades.

P3 DSPA Plus is built in with 10-channel powerful amplifier, outputting up to 80W per channel for eight channels, and 150W per channel for two channels. The P3 DSPA Plus can effortlessly drive high-end speakers in your vehicle, delivering exceptional audio performance. Equipped with advanced DSP sound tuning, it offers precise control with independent adjustment of a 31-band EQ output and a 5-band EQ/delay input, ensuring crystal-clear sound reproduction with enhanced depth.

The P3 DSPA Plus also features OTG transmission capability, allowing seamless data transfer from mobile devices for high-fidelity audio playback.

- High-resolution audio files playback: DFF/DSF/WAV/FLAC/APE/AIFF/DSD (up to 256)
- Hi-End components:
  - TI PCM1690 (24-bit / 192 KHz PCM)
  - Professional Op Amp
  - High temperature tolerance electrolytic capacitor (high-reliability under 105°C)
- Integrated Professional DSP:
  - 295 MHz ADI chip with 1.2 billion MAC operations per second
  - 31-band EQ, crossover frequency and slope, phase inversion, time alignment delays individually adjustable for each output channel, or synchronously adjustable for chosen channels
  - 5-band EQ, time alignment delays individually adjustable for each input channel
- Powerful 8 x 80W/4Ω + 2 x 150W/4Ω Max. integrated Class D amplifier
- 1 x 200W/4Ω Max. BLT Outputs
- 12 x High Level Inputs 2 x AUX Inputs
- 12 x RCA Outputs 10 x High Level Outputs
- Dynamic Loudness Control
- Goldhorn SKYATOM Surround System
- Intelligent Control: panel control with IPS display, wireless digital remote control, APP control
- Lossless streaming via Bluetooth® 5.0 (aptX) and WiFi connection





	P1 DSPA	P2 DSPA Pro	P3 DSPA Plus
Voltage	DC 11V-16V		
DAC	PCM1690		
Op Amp	professional Op Amp		
Capacitor	High temperature tolerance electrolytic capacitor (high-reliability under 105°C)		
CPU	four ARM Cortex A7 cores		
Music Formats	Hi-res: DFF/DSF/DSD (up to 256) uncompressed: WAV/FLAC/APE/AIFF compressed: MP3/AAC/OGG/WMA/MV		
Sampling Rate	PCM: 44.1KHz-768KHz/16-32bit DSD: DSD64/DSD128/DSD256		
Integrated DSP	31-band EQ and Q factor, Crossover frequency, Type and slope, Phase inversion 0° / 180°, Time alignment delays independently adjustable for each channel, or synchronously adjustable for chosen channels		
	5-band EQ, Time alignment delays independently adjustable for each channel, Up to 4 combined frequency input per channel Each output channel is added with 2 variable phase rotation functions Dynamic Loudness Control		
Inputs	Goldhorn SKYATOM Surround System		
	4 x High Level Inputs	8 x High Level Inputs	12 x High Level Inputs
Outputs	2 x AUX Inputs		
	4 x High Level Outputs 6 x RCA Outputs	8 x High Level Outputs 8 x RCA Outputs	10 x High Level Outputs 12 x RCA Outputs
Amplifier	65 W/4Ω Max. Class AB Amplifier	80 W/4Ω Max. Class D Amplifier	8ch: 80W/4Ω/ch Max. 2ch: 150W/4Ω/ch Max. Class D Amplifier
BLT Outputs	—		1 x BLT outputs 200W/4Ω Max.
Source Selection	Mix mode		
Bluetooth	Bluetooth® 5.0		
	Bluetooth Profile: A2DP/AVRCP Audio Codec: aptX/AAC/SBC		
USB-DAC	—		44.1KHz-192KHz/ 24bit-32bit
Wi-Fi Standard	802.11 b/g/n		
Intelligent Control	App control		
	Panel control with IPS display 2.4GHz Remote Controller		
USB	USB2.0 HOST x 2 MINI USB x 1		USB2.0 HOST x 3 MINI USB x 1
	—		USB-DAC x 1
Color	Gold	Red	
Dimensions in mm	180 x 140.5 x 36	217 x 170 x 43	296 x 217 x 43



## DSP Amplifier - DSPA 206

Probably this is the cheapest DSP amplifier you can get in the market that can provide above average sound quality! The built-in 4 x 50W/4Ω Max. class AB amplifier allows for a simple and quick upgrade, bringing a new feeling to listeners. 6-channel RCA outputs can meet the future upgrade needs.

When it comes to tuning, DSPA 206 features 15-band EQ for the front sound field + 10-band EQ for the rear sound field + 5-band EQ for the subwoofer. If you want to have a try in car audio upgrade, DSPA 206 can be your first chosen DSP!

- Hi-End components
- 4 x 50W/4Ω Max. integrated Class AB amplifier
- 4 x High Level Inputs 2 x AUX Inputs
- 6 x RCA Outputs 4 x High Level Outputs
- Bluetooth® 5.0 Audio Codec: aptX HD/aptX/AAC/SBC
- EQ Band: 15-band EQ for A/B channels;
  - 10-band EQ for C/D channels;
  - 5-band EQ for E/F channels
- Navigation Mix: Backing up and navigation audio guide first
- EPS (Error Protection System)



## DSP Amplifier - DSPA 406

DSPA 406 is a popular DSP with 4 channel high level inputs and 6 channel RCA outputs, which can fit the upgrade plans of many vehicles in the market. Compared with the entry-level DSPs from other brands, DSPA 406 is of higher quality, because it features Bluetooth® 5.0, Class AB amplifier and voltage build up technology, as well as navigation mix. If you want to try car audio upgrade for the first time, DSPA 406 is surely your choice!

- Hi-End components
- 4 x 65W/4Ω Max. integrated Class AB amplifier
- Voltage build up technology
- 4 x High Level Inputs 4 x AUX Inputs
- 6 x RCA Outputs 4 x High Level Outputs
- Bluetooth® 5.0 Audio Codec: aptX HD/aptX /AAC/SBC
- 31-band EQ, crossover frequency and slope, phase inversion, time alignment delays individually adjustable for each output channel, or synchronously adjustable for chosen channels
- 5-band EQ, time alignment delays individually adjustable for each input channel
- Dynamic Loudness Control
- Navigation Mix: Backing up and navigation audio guide first
- EPS (Error Protection System)





## DSP Amplifier - DSPA 810 SE

Goldhorn DSPA 810 SE is a powerful DSP audio processor that features 10 output channels, supporting independent adjustment of 31-band EQ for outputs and 5-band EQ for inputs. In addition, it is equipped with 8 channels of AB class amplifiers, each delivering 50W, meeting the requirements of most car audio modifications. This product supports dynamic loudness control, enabling a wide dynamic range even at low volumes, enhancing the overall audio experience in the vehicle.

- Hi-End components
- 8 x 50W/4Ω Max. integrated Class AB amplifier
- 8 x High Level Inputs 2 x AUX Inputs
- 10 x RCA Outputs 8 x High Level Outputs
- Bluetooth® 5.0 Audio Codec: aptX HD/aptX/AAC/SBC
- 31-band EQ, crossover frequency and slope, phase inversion, time alignment delays individually adjustable for each output channel, or synchronously adjustable for chosen channels
- 5-band EQ, time alignment delays individually adjustable for each input channel
- Dynamic Loudness Control





## DSP Amplifier - DSPA 810 Pro

DSPA 810 Pro is a 31-band EQ professional DSP integrated with the Class AB amplifier. With voltage build up technology, the Class AB amplifier of DSPA 810 Pro can generate up to 65 watts per channel. Its 8 channel high level outputs and 10 channel RCA outputs make it suitable for configuring a 3-way active crossover system. So if you are budget-conscious but want to try a 3-way active crossover upgrade, DSPA 810 Pro can perfectly meet your need! Created for the budget-conscious 3-way active crossover player.



- Hi-End components
- 8 x 65W/4Ω Max. Integrated Class AB amplifier
- Voltage build up technology
- 8 x High Level Inputs 2 x AUX Inputs
- 1 x Optical input (up to 96KHz/ 24 bit)
- 10 x RCA Outputs 8 x High Level Outputs
- Bluetooth® 5.0 Audio Codec: aptX HD/aptX /AAC/SBC
- 31-band EQ, crossover frequency and slope, phase inversion, time alignment delays individually adjustable for each output channel, or synchronously adjustable for chosen channels
- 5-band EQ, time alignment delays individually adjustable for each input channel
- Dynamic Loudness Control
- Goldhorn SKYATOM Surround System
- Navigation Mix: Backing up and navigation audio guide first
- EPS (Error Protection System)





## DSP Amplifier - DSPA 816 Pro

DSPA 816 Pro is a 31-band EQ professional DSP integrated with Class D amplifier. DSPA 816 Pro has 16-channel outputs-8-channel powerful amplifiers, with outputs up to 80W per channel, and 8-channel RCA outputs. Its overwhelming advantages, including high power, multiple channels and high-quality sound, make it the best choice for high-end vehicles.

- Hi-End components
- Powerful 8 x 80W/4Ω Max. integrated Class D amplifier
- 8 x High Level Inputs 2 x AUX Inputs
- 1 x Optical Input 1 x Coaxial Input (up to 192 KHz / 24 bit)
- 8 x RCA Outputs 8 x High Level Outputs
- Bluetooth® 5.0 Audio Codec: aptX HD/aptX/AAC/SBC
- 31-band EQ, crossover frequency and slope, phase inversion, time alignment delays individually adjustable for each output channel, or synchronously adjustable for chosen channels
- 5-band EQ, time alignment delays individually adjustable for each input channel
- Dynamic Loudness Control
- Goldhorn SKYATOM Surround System
- Navigation Mix: Backing up and navigation audio guide first
- EPS (Error Protection System)





## DSP Amplifier - DSPA 1012 Plus

The DSPA 1012 Plus is a high-end DSP amplifier dedicated to creating Virtual Surround Sound cabin for high-end cars.

Same as the DSPA 1216 Plus, the DSPA 1012 Plus features high power and multiple channels. 12 in and 20 out, outputting up to 80W per channel for eight channels, and 150W per channel for two channels. High power output can easily create a Virtual Surround Sound for car audio system, allowing you to enjoy a clear, full, detailed and deep sound right in the car, improving your listening experience from pleasing the ears, to pleasing the heart.

- Hi-End components
- 12 x High Level Inputs 2 x AUX Inputs
- 1 x Optical Input 1 x Coaxial Input (up to 192 KHz / 24 bit)
- 12 x RCA Outputs 10 x High Level Outputs
- Powerful 8 x 80W/4Ω + 2 x 150/4Ω Max. integrated Class D amplifier
- BLT outputs: 1 x 200W/4Ω Max.
- Bluetooth® 5.0 Audio Codec: aptX HD/aptX/AAC/SBC
- Dynamic Loudness Control
- Goldhorn SKYATOM Surround System
- Multi-source inputs EQ pre-adjustment
- High level input time delay adjustment (0--10ms)
- Front & rear sound zone separation
- Navigation Mix: Backing up and navigation audio guide first
- EPS (Error Protection System)





## DSP Amplifier - DSPA 1216 Plus

As the latest high-end amplifier processor, DSPA 1216 Plus is designed for multi-channel high-end cars. One can handle a full set of multi-channel HiFi system, getting rid of extra equipment.

DSPA 1216 Plus is built in with 12-channel powerful amplifier, outputting up to 80W per channel for eight channels, and 150W per channel for four channels. In the bridging mode, it can achieve 200W per channel for 2 channels, stably driving subwoofers and woofers of your and high-end speakers, bringing 360° surround sound effect. Its 16-channel RCA outputs allow for various future upgrade plans.

Whether you are driving Mercedes-Benz, Land Rover, BMW, Audi, Volvo, Lincoln, Lexus, Ideal or other trams, you can add a DSPA 1216 Plus, so that the original car speakers can achieve the desired effect.



- Hi-End components
- Powerful 8 x 80W/4Ω + 4 x 150/4Ω Max. integrated Class D amplifier
- 16 x High Level Inputs 2 x AUX Inputs
- 1 x Optical Input 1 x Coaxial Input (up to 192 KHz / 24 bit)
- 16 x RCA Outputs 12 x High Level Outputs
- BLT outputs: 2 x 200W/4Ω Max.
- Bluetooth® 5.0 Audio Codec: aptX HD/aptX/AAC/SBC
- 31-band EQ, crossover frequency and slope, phase inversion, time alignment delays individually adjustable for each output channel, or synchronously adjustable for chosen channels
- 5-band EQ individually adjustable for each input channel
- Dynamic Loudness Control
- Goldhorn SKYATOM Surround System
- Navigation Mix: Backing up and navigation audio guide first
- EPS (Error Protection System)



## DSP Amplifier - DSPA 1616 Ultra

The DSPA 1616 Ultra amplifier processor is the latest addition to our high-end range, tailored to meet the demands of automotive enthusiasts seeking modifications with over twenty channels.

Boasting 16 channels of digital amplifiers, this remarkable device features 12 channels with 80W per channel output and 4 channels with a powerful 150W per channel output. This ensures that it can effortlessly power even the most sophisticated original car speakers, fully unleashing their potential and delivering a truly immersive 360° surround sound experience.

Moreover, it also supports mobile phone OTG transmission function, realizing lossless audio playback and bringing a higher quality audio experience.

- Hi-End components
- Powerful 12 x 80W/4Ω + 4 x 150/4Ω Max. integrated Class D amplifier
- 16 x High Level Inputs 2 x AUX Inputs
- 1 x Optical Input 1 x Coaxial Input (up to 192 KHz / 24 bit)
- 16 x RCA Outputs 16 x High Level Outputs
- BLT outputs: 2 x 200W/4Ω Max.
- Bluetooth® 5.0 Audio Codec: aptX HD/aptX/AAC/SBC
- 31-band EQ, crossover frequency and slope, phase inversion, time alignment delays individually adjustable for each output channel, or synchronously adjustable for chosen channels
- 5-band EQ individually adjustable for each input channel
- Dynamic Loudness Control
- Goldhorn SKYATOM Surround System
- Navigation Mix: Backing up and navigation audio guide first
- EPS (Error Protection System)





## DSP Amplifier - DSPA 2416 Ultra

The DSPA 2416 Ultra, with 36 channels of total output, is designed for high-end luxury cars and high-end new energy vehicles with more than 18 original channels. This single unit handles luxury car audio upgrades, creating a SKYATOM surround sound effect that immerses every corner of the car in delicate and shocking music.

It features 24 high-level outputs, including 20 channels with 80W output per channel and 4 channels with 150W output per channel, ensuring rich sound quality and powerful performance. It supports dynamic loudness control to enhance the overall sound effect of the car.

The DSPA 2416 Ultra is the perfect modification choice for high-end luxury cars and high-end new energy vehicles.

- Hi-End components
- Powerful 20 x 80W/4Ω + 4 x 150/4Ω Max. integrated Class D amplifier
- 24 x High Level Inputs 2 x AUX Inputs
- 1 x Optical Input 1 x Coaxial Input (up to 192 KHz / 24 bit)
- 1 x USB-DAC Input (up to 192 KHz / 32bit)
- BLT outputs: 2 x 200W/4Ω Max.
- 36-channel DSP Outputs
- Bluetooth® 5.0 Audio Codec: aptX HD/aptX/AAC/SBC
- Dynamic Loudness Control
- Goldhorn SKYATOM Surround System





	DSPA 206	DSPA 406	DSPA 810 SE
Voltage	DC 11V-16V		
Turn-On	ACC/ high level inputs (FR+/FR-)		ACC/ high level inputs (IN 1+/IN 1-)
Hi-End Components	DSP chip: Analog Devices™		
	TI 96KHz/24bit ADC TI 192KHz/24bit DAC	TI Hi-End 192KHz/24bit ADC TI Hi-End 192KHz/24bit DAC	TI Hi-End 192KHz/32bit ADC TI Hi-End 192KHz/24bit DAC
	High temperature tolerance electrolytic capacitor (high-reliability under 105°C)		
Amplifier	Class AB amplifier		
	4 x 50W/4Ω Max.	4 x 65W/4Ω Max.	8 x 50W/4Ω Max.
Inputs	4 x High Level Inputs 2 x AUX Inputs	4 x High Level Inputs 4 x AUX Inputs	8 x High Level Inputs 2 x AUX Inputs
	4 x High Level Outputs 6 x RCA Outputs		8 x High Level Outputs 10 x RCA Outputs
Bluetooth	Bluetooth® 5.0 Bluetooth Profile: A2DP/AVRCP Audio Codec: aptX HD/aptX/AAC/SBC		
Input Equalizer	---	Independently 5-band EQ per channel Filter type: PE/LS/HS/Slope 1&2 AP 5-Band Parametrical Equalizer: 20Hz~20KHz Q: 0.5 to 15 Gain: -15dB to +15dB	
Input Delay	---	High level input time delay adjustment: 0~10ms/0~340cm	
Dynamic loudness Control	Separate D.L.C parameters for Analog/Digital/Bluetooth input sources		
Output Crossover	Crossover Filter Type and Slope: Bessel / Butterworth @ -6/-12 dB Linkwitz @ -12dB	Crossover Filter Type and Slope: Bessel / Butterworth @ -6/-12/-18/-24/-30/-36/-42/-48 dB Linkwitz @ -12/-24/-36/-48 dB	
Output Equalizer	EQ Band: 15-band EQ for A/B channels; 10-band EQ for C/D channels; 5-band EQ for E/F channels Equalizer: ±1.5 dB, 20Hz~20KHz Q: 0.5 to 15	Independently adjustable per channel Filter type: PE/LS/HS/Slope 1&2 AP 31-Band Parametrical Equalizer: 20Hz~20KHz Q: 0.5 to 15 Gain: -15dB to +15dB	
Phase Inversion	Independently adjustable for each channel: Positive phase/Inverted phase		
Output Polarity	---	Variable Phase Rotation from 0° to 360°	
Time Alignment Delay	0 ~5ms/0~170cm	0~17ms/0~578cm	0~15ms/0~510cm
Volume	Independently adjustable for each channel: -20 dB~+5 dB, or synchronously adjustable for chosen channels Master Volume: Mute / 0~60 levels (-100 dB~0 dB)		
Mix Mode	Navigation Mix: Backing up and navigation audio guide first		
Control Mode	Panel Control: save customized tuning/volume control		
PC Requirements	Microsoft™ Windows 7 or higher		
Color	Black		
Dimensions in mm	180 x 130 x 41	180 x 129 x 36	193 x 146 x 41



	DSPA 810 Pro	DSPA 816 Pro	DSPA 1012 Plus
Voltage	DC 11V-16V		
Turn-On	ACC/ high level inputs (IN 1+/IN 1-)		
Hi-End Components	DSP chip: Analog Devices™		
	TI Hi-End 192KHz/32bit ADC TI Hi-End 192KHz/24bit DAC		
	High Temperature for High Reliability to 105° C electrolytics		
Amplifier	Class AB amplifier 8 x 65W/4Ω Max.	Class D amplifier 8 x 80W/4Ω Max.	Class D amplifier 8 x 80W/4Ω + 2 x 150W/4Ω Max.
BLT Outputs	—		1 x 200W/4Ω Max.
Inputs	8 x High Level Inputs 2 x AUX Inputs		12 x High Level Inputs 2 x AUX Inputs
Digital Inputs	1 x Optical Input (up to 96KHz/24bit)	1 x Optical Input (up to 192KHz/24bit) 1 x Coaxial Input (up to 192KHz/24bit)	
Outputs	8 x High Level Outputs 10 x RCA Outputs	8 x High Level Outputs 8 x RCA Outputs	10 x High Level Outputs 12 x RCA Outputs
Bluetooth	Bluetooth® 5.0 Bluetooth Profile: A2DP/AVRCP Audio Codec: aptX HD/aptX/AAC/SBC		
Input Equalizer	Independently 5-band EQ per channel Filter type: PE/LS/HS/Slope 1&2 AP 5-Band Parametrical Equalizer: 20Hz~20KHz Q: 0.5 to 15 Gain: -15dB to +15dB		
Input Delay	High level input time delay adjustment: 0~10ms/0~340cm		
Dynamic loudness Control	Separate DLC parameters for Analog/Digital/Bluetooth input sources		
SKYATOM Surround	Independently adjustable per channel output volume gain: -20dB~+10dB Phase Shift: Positive phase/inverted phase Time Delay: Subwoofer delay range: 0~10ms, Other channel delay: 0~40ms Surround Sound Effects: Front sound field extension, front sound field treble enhancement, center enhancement, center treble enhancement, surround sound field enhancement, bass enhancement, bass dive enhancement		
Output Crossover	Crossover Filter Type and Slope: Bessel / Butterworth @ -6/-12/-18/-24/-30/-36/-42/-48 dB Linkwitz @ -12/-24/-36/-48 dB		
Output Equalizer	Independently adjustable per channel Filter type: PE/LS/HS/Slope 1&2 AP 31-Band Parametrical Equalizer: 20Hz~20KHz Q: 0.5 to 15 Gain: -15dB to +15dB		
Phase Inversion	Independently adjustable for each channel: Positive phase/inverted phase		
Output Polarity	Variable Phase Rotation from 0° to 360°		
Time Alignment Delay	0~20ms/0~680cm		
Volume	Independently adjustable for each channel: -20 dB~+5 dB, or synchronously adjustable for chosen channels Master Volume: Mute / 0~60 levels (-100 dB~0 dB)		
Mix Mode	Navigation Mix: Backing up and navigation audio guide first Panel Control: save customized tuning/volume control/Bass control		
Control Mode	Steering wheel controller:		—
	Previous or Next song/Play/Pause		—
PC Requirements	Microsoft™ Windows 7 or higher		
Color	Black		
Dimensions in mm	217 x 170 x 43		296 x 217 x 43





	DSPA 1216 Plus	DSPA 1616 Ultra	DSPA 2416 Ultra
Voltage	DC 11V-16V		
Turn-On	ACC/ high level inputs (IN 1+ /IN 1-)		
Hi-End Components	DSP chip: Analog Devices™		
	TI Hi-End 192KHz/32 bit ADC AKM Hi-End 768KHz/32bit DAC		AKM Hi-End 768KHz/32bit ADC AKM Hi-End 768KHz/32bit DAC
	High Temperature for High Reliability to 105 °C electrolytics		
Amplifier	Class D amplifier 8 x 80W/4Ω + 4 x 150W/4Ω Max.	Class D amplifier 12 x 80W/4Ω + 4 x 150W/4Ω Max.	Class D amplifier 20 x 80W/4Ω + 4 x 150W/4Ω Max.
BLT Outputs	2 x 200W/4Ω Max.		
Inputs	16 x High Level Inputs 2 x AUX Inputs		24 x High Level Inputs 2 x AUX Inputs
USB-DAC	—	44.1KHz~192KHz / 24bit~32bit	
Digital Inputs	1 x Optical Input (up to 192KHz/24bit) 1 x Coaxial Input (up to 192KHz/24bit)		
Outputs	12 x High Level Outputs 16 x RCA Outputs	16 x High Level Outputs 16 x RCA Outputs	24 x High Level Outputs 16 x RCA Outputs
Bluetooth	Bluetooth® 5.0 Bluetooth Profile: A2DP/AVRCP Audio Codec: aptX HD/aptX/AAC/SBC		
Input Equalizer	Independently 5-band EQ per channel Filter type: PE/LS/HS/Slope 1&2 AP 5-Band Parametrical Equalizer: 20Hz~20KHz Q: 0.5 to 15 Gain: -15dB to +15dB		
Dynamic loudness Control	Separate DLC parameters for Analog/Digital/Bluetooth input sources		
SKYATOM Surround	Independently adjustable per channel output volume gain: -20dB~+10dB Phase Shift: Positive phase/Inverted phase Time Delay: Subwoofer delay range: 0~10ms. Other channel delay: 0~40ms Surround Sound Effects: Front sound field extension, front sound field treble enhancement, center enhancement, center treble enhancement, surround sound field enhancement, bass enhancement, bass dive enhancement		
Output Crossover	Crossover Filter Type and Slope: Bessel / Butterworth @ -6/-12/-18/-24/-30/-36/-42/-48 dB Linkwitz @ -12/-24/-36/-48 dB		
Output Equalizer	Independently adjustable per channel Filter type: PE/LS/HS/Slope 1&2 AP 31-Band Parametrical Equalizer: 20Hz~20KHz Q: 0.5 to 15 Gain: -15dB to +15dB		
Phase Inversion	Independently adjustable for each channel: Positive phase/Inverted phase		
Output Polarity	Variable Phase Rotation from 0° to 360°		
Time Alignment Delay	0~20ms/0~680cm		
Volume	Independently adjustable for each channel: -20 dB~+5 dB, or synchronously adjustable for chosen channels Master Volume: Mute / 0~60 levels (-100 dB~0 dB)		
Mix Mode	Navigation Mix: Backing up and navigation audio guide first		
Control Mode	Panel Control: save customized tuning/volume control/Bass control		
PC Requirements	Microsoft™ Windows 7 or higher		
Color	Black		
Dimensions in mm	331 x 217 x 43		410 x 217 x 46

## Stand-alone DSP - DSP10

Goldhorn DSP10 is a 10-channel Stand-alone DSP, optimised for mainstream vehicle audio modifications. With 8-channel high-level input and 10-channel RCA output, it ensures seamless integration.

Boasting powerful processing and adjustment capabilities, the DSP10 maintains audio clarity and dynamic range for a pure sound experience. Plus, it supports the Goldhorn SKYATOM Surround System for an immersive audio journey.

- Hi-End components
- 8 x High Level Inputs 2 x AUX Inputs
- 1 x Optical input (up to 96KHz/ 24 bit)
- 10 x RCA Outputs
- Bluetooth® 5.0 Audio Codec: aptX HD/aptX/AAC/SBC
- 31-band EQ, crossover frequency and slope, phase inversion, time alignment delays individually adjustable for each output channel, or synchronously adjustable for chosen channels
- 5-band EQ, time alignment delays individually adjustable for each input channel
- Dynamic Loudness Control
- Goldhorn SKYATOM Surround System



## Stand-alone DSP - DSP16 Ultra

DSP16 Ultra is Goldhorn's flagship stand-alone DSP, dedicated to delivering the essence of pure music aesthetics. It features two ES9038Pro DAC chips and a powerful triple-core DSP processor, complemented by high-precision femtosecond clock system and ultra-precise 0.005ms delay, providing car owners with a mind-blowing music experience. DSP16 Ultra revolutionizes the way music is presented, whether it's the high-energy rock or the soothing beauty of classical tunes, DSP16 Ultra takes you on an enchanting musical journey.

- HI-End components:

- 2 x ES9038Pro DAC (32-bit / 768 KHz PCM)

- AKM HI-End 768 KHz / 32 bit ADC

- ESS HI-End 768 KHz / 32 bit DAC

- Femtosecond clock system

- Hi-End Professional Op Amp

- High temperature tolerant electrolytic capacitor (high-reliability under 105°C)

- Integrated Professional DSP:

- 3-Core 295 MHz ADI chip

- 30-band EQ, crossover frequency and slope, phase inversion,

- time alignment delays individually adjustable for each output channel,  
or synchronously adjustable for chosen channels

- 5-band EQ, time alignment delays individually adjustable for each input channel

- Output frequency response: 10Hz~80KHz ( $\pm 1$ dB)

- 0.005ms delay step

- 16 x High Level Inputs 2 x AUX Inputs

- 1 x Optical Input 1 x Coaxial Input (up to 192 KHz / 24 bit)

- 1 x USB DAC (up to 192 KHz / 32 bit)

- 16 x RCA Outputs

- Bluetooth® 5.0 Audio Codec: aptX HD/aptX/AAC/SBC

- Dynamic Loudness Control

- Goldhorn SKYATOM Surround System



# GOLDHORN



	DSP10	DSP16 Ultra
Voltage	DC 11V-16V	
Turn-On	ACC/ high level inputs (IN 1+/IN 1-)	
Hi-End Components	DSP chip: Analog Devices™	2 x ES9038Pro DAC chip 3 x DSP Chip
	TI Hi-End 192KHz/32bit ADC TI Hi-End 192KHz/24bit DAC	TI Hi-End 192KHz/32 bit ADC AKM Hi-End 768KHz/32bit DAC
	High Temperature for High Reliability to 105°C electrolytics	
Inputs	8 x High Level Inputs 2 x AUX Inputs	16 x High Level Inputs 2 x AUX Inputs
Digital Inputs	1 x Optical Input (up to 96KHz/24bit)	1 x Coaxial Inputs / 1 x Optical Inputs (up to 192KHz/24bit)
Outputs	10 x RCA Outputs	16 x RCA Outputs
Bluetooth	Bluetooth® 5.0 Bluetooth Profile: A2DP/AVRCP Audio Codec: aptX HD/aptX/AAC/SBC	
Input Equalizer	Independently 5-band EQ per channel Filter type: PE/LS/HS/Slope 1&2 AP 5-Band Parametrical Equalizer: 20Hz~20KHz Q: 0.5 to 15 Gain: -15dB to +15dB	
Input Delay	High level input time delay adjustment: 0~10ms/0~340cm 0.005ms Step	
Dynamic loudness Control	Separate D.L.C parameters for Analog/Digital/Bluetooth input sources	
SKYATOM Surround	Independently adjustable per channel output volume gain: -20dB~+10dB Phase Shift: Positive phase/inverted phase Time Delay: Subwoofer delay range:0~10ms,Other channel delay: 0~40ms Surround Sound Effects: Front sound field extension, front sound field treble enhancement, center enhancement, center treble enhancement, surround sound field enhancement, bass enhancement, bass dive enhancement	
Output Crossover	Crossover Filter Type and Slope: Bessel / Butterworth @ -6/-12/-18/-24/-30/-36/-42/-48 dB Linkwitz @ -12/-24/-36/-48 dB	
Output Equalizer	Equalizer Filter Type: PE/LS/HS/Slope 1&2 AP Crossover Frequency: 1 Hz step @ 20 Hz - 20 kHz Master Gain: 0~60 dB Channel Gain: -20dB to +5 dB Q: 0.5 to 15 0.1	
Phase Inversion	31-Band Parametrical Equalizer: ±20 dB,0.1 dB Steps   30-Band Parametrical Equalizer: ±20 dB,0.1 dB Steps Independently adjustable for each channel: Positive phase/inverted phase	
Output Polarity	Variable Phase Rotation from 0° to 360°	
Output Delay	0~20ms/0~680cm 0.005ms Step	
Volume	Independently adjustable for each channel: -20 dB~+5 dB, or synchronously adjustable for chosen channels Master Volume: Mute / 0~60 levels (-100 dB~0 dB)	
Control Mode	Panel Control: save customized tuning/volume control/Bass control	
PC Requirements	Microsoft™ Windows 7 or higher	
Color	Black	
Dimensions in mm	217 x 170 x 43	303 x 231 x 50

### Accessories: Remote Controller for DSP - GD16

- Mode Selection/volume control/bass control
- Easy Plug & Play connection
- Small size & Intelligent Control
- Dimensions:63mm x 34mm x 15mm



### Accessories: Panel Controller for Player - T3002

- Stylish Outlook
- IPS Display  
Synchronize multiple displays and control: factory head unit, panel control, phone
- Easy Plug & Play connection
- Folder Management



## Accessories: Graphene Super - Capacitor M01 & M02

Graphene Super-Capacitor is a new car audio power supply. The surface of graphene can include more electron, thereby improving conductivity and charge-discharge performance.

Power-M01 is designed as the additional power supply for DSD players and DSPs, and its capacitance is 280F; Power-M02 is a good company to amplifiers, with capacitance high up to 450F.

Higher capacitance delivers more stable power supply, which can help stabilize the voltage gap between car audio devices and car's batteries, thereby minimizing voltage drop or sudden sound cut. The internal resistance of Graphene Super Cap is very low, at 0.20Ω, which can deliver the high current on demand.

Compared with other power supplies, Goldhorn's Graphene Super Cap can achieve high capacitance and small in size at the same time, so it won't occupy your car space too much. Finally, the Super Cap's over current protection and over voltage protection can protect the car's battery and therefore extend its life.



	POWER-M01	POWER-M02
Capacity	280 F	450 F
Internal Resistance	0.018Ω	0.20Ω
Maximum discharge rate	60	
Maximum Carrying Current	120 A/S	
Maximum Instantaneous discharge current	50 A/S	80 A/S
Discharge-Charge Cycles	30,000 times or above	
Dimensions in mm	109 x 130 x 39	216 x 109 x 39

