audison

bit One HD

Virtuoso

High Definition Signal Processor

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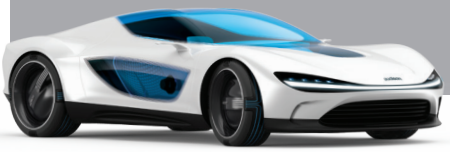
PRODUCT INFORMATION

Elettromedia 2019



Hi-Res AUDIO · Full DA HD · bit Drive your sound · FIR mode · SHARC FLOATING POINT DSP

de·eq · de·time · de·phase · USS

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bit One HD

Virtuoso

High Definition Signal Processor

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BIT GLOSSARY

Full DA HD
pure digital signal transfer with a resolution up to 24 bit / 96 kHz

SHARC FLOATING POINT DSP
Analog Device SHARC™ series chip with floating point precision, to reach the highest audio quality

FIR mode
linear phase filters and equalizer, for a new in-car listening experience

bit Drive your sound
auto tuning by Audison bit Tune and communication with bit Drive portal

de·eq
de-equalization function to "flatten" any equalization applied by default by OEM sources

de·time
Input delay compensation of time-delayed factory outputs prior to signal summing

de·phase
Compensation of the overall system phase to recreate the original signal, even in case of OEM sound enhancement algorithms

POLARITY CHECK
High level inputs polarity check and automatic correction in case of inversion

USS
USS technology allows bit processors to work with head-units featuring the "speaker load detection" circuit

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BIT ONE HD VIRTUOSO

SHARC FLOATING POINT DSP

Just as the virtuous performer holds the absolute mastery of the instrument and the technique connected to it, the bit One HD Virtuoso features unique skills dedicated to the most ambitious OEM Integration projects and excels in the uncompromising Hi-End systems.
This was made possible thanks to innovative functions born with the new software / firmware development and the upgrade of some key components in the audio signal path, which are crucial to reach new heights of listening pleasure.

bit One HD Virtuoso allows the creation of an Audison Full DA HD (Full Digital Audio HD) system where the audio signal is transmitted digitally from the Hi-Res audio player to the Audison amplifiers equipped with AC / AD link inputs, preserving every nuance with maximum purity.

Hi-Res AUDIO

Full DA HD

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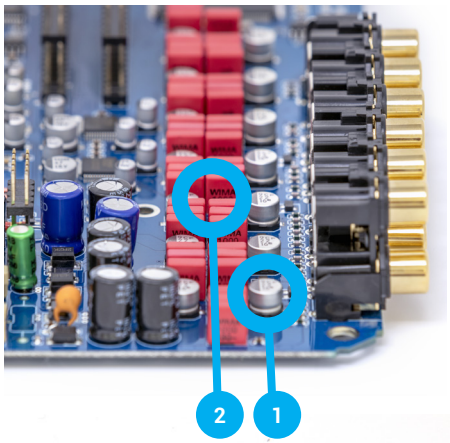
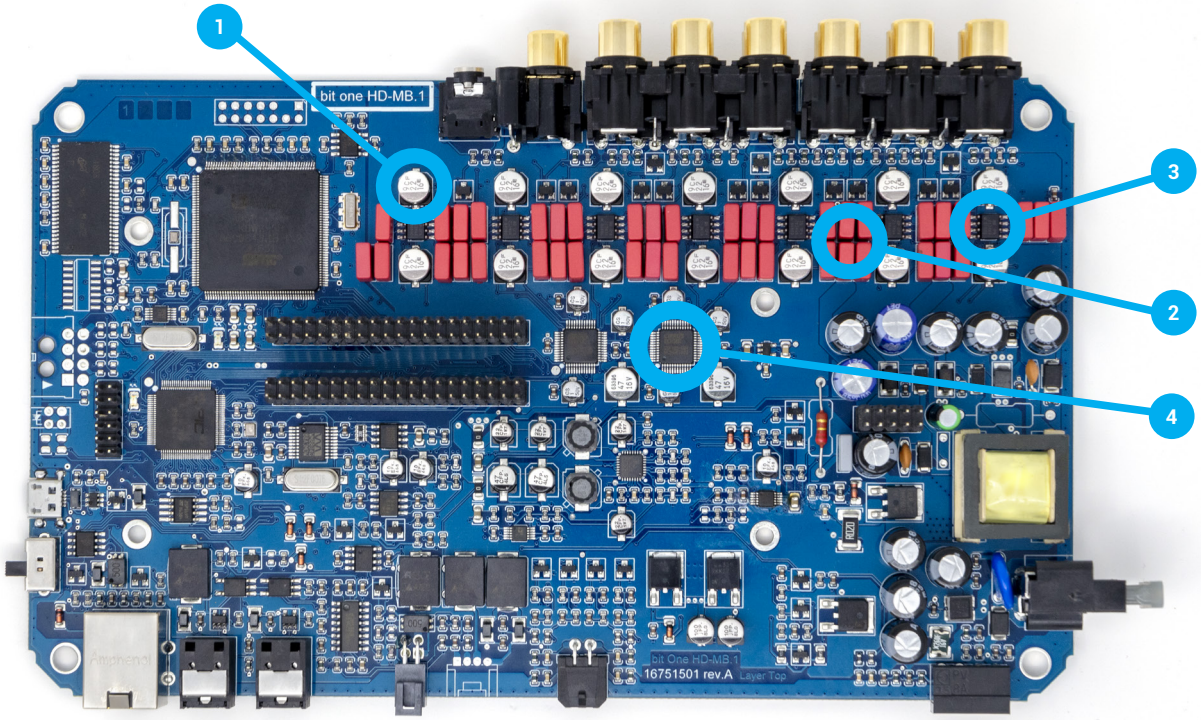
AUDIOPHILE COMPONENTS

The use of these high rated components contributes to obtaining **more musical medium-high frequencies and a powerful and fast low range** when the analog outputs of the bit One HD Virtuoso are used.

1. SILMIC series ELNA capacitors specific for audio use, with cellulose dielectric treated with silk fiber **to mitigate the mechanical energy that comes from the bit One HD vibrations**, a common condition for in-car use. The result is a **superior acoustic performance**.
2. WIMA high performance Metallized Polypropylene film capacitors featuring extremely low dissipation factor and dielectric absorption, to ensure extra clean and dynamic high-frequency reproduction.
3. High-Performance Burr Brown OP Amps OPAx134 SoundPlus ™ series specific for absolute level audio applications, characterized by very low distortion / noise and a high response rate without saturation, features that increase the dynamic range and listening realism.
4. Cirrus-Logic CS4365 6-channel and CS4385 8-channel 24 bit / 192 kHz DA converters with 114 dB signal-to-noise ratio and the possibility to choose between two slow / fast digital filter responses to customize the listening experience at best.





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NEW FUNCTIONS AND IMPROVEMENTS

The constant work of the Audison development team has produced the new software / firmware release v.2.0 * in order to:

1. Strengthen the integration with the latest generation OEM systems and at the same time raise the performance level of Hi-End systems with a "purist" approach in Full DA HD configuration

2. Offer even more powerful signal processing tools to specialists including new types of filters

3. Make the use of PC-Software even more immediate through a renewed GUI that facilitates the work of specialists

* The SW / FW v.2.0 is compatible with any HW version of the bit One HD Virtuoso and with any DRC MP.

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A) Only one FW to support both FIR and IIR digital networks.

You can choose FIR or IIR version without the need to update the FW as for the previous release. The SW 2.0 is compatible with both network filter types and is also designed for remote control via an additional Wi-Fi module.

B) Added Pass-through input configuration (MASTER)
you can now choose between 2 approaches for the input setup:

1. Automatic routing: consists on the traditional Audison I/O routing approach, applicable to both OEM integration (hi-level) or After-market (low-level) scenarios, and it is based on signal summing, signal reconditioning & flattening. With this setup type, automatic algorithm options named DE-EQ / DE-Phase, Compensation of TA, Polarity check and Auto Input Switch can be selected.

2. Pass-through: consists on an alternative I/O routing approach dedicated to OEM sound systems (hi-level), that is literally based on "pass-through" the existing OEM infotainment's output channels (connected to bit One HD Virtuoso's speaker level inputs) to the bit One HD Virtuoso's outputs. The SW doesn't perform any signal summing and front reconditioning or flattening. However, the factory output channels are analyzed by the SW, that is able to identify bandwidth and factory TA. All this information is displayed in the input analysis dashboard, and can be evaluated and manually compensated by the user, thanks to the new SW sound tuning capabilities (EQ filters).

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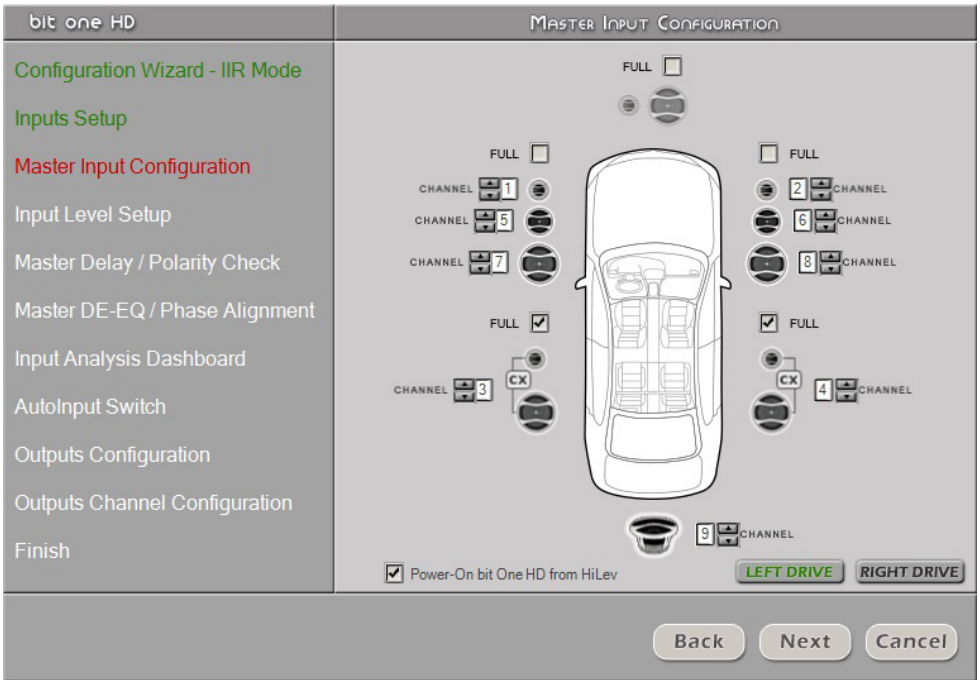
FOCUS ON NEW ROUTING CAPABILITIES

PASS-THROUGH VS AUTOMATIC

When addressing scenarios of OEM audio systems integration, the two approaches described above both have PROs and CONs. Benefits and limitations must be assessed in the design and testing phases on the target system.
Automatic routing is the simplest and most automated and provides the ability to reduce the complexity of the system to the ideal stereo case or managing systems up to 5.1 fronts (front (L, R), rear (L, R), central and SUB). This approach generally works well in factory systems that are not too complex and / or not altered by algorithms to emphasize sound. In such cases, the reconstruction of the stereo fronts (sum of the limited signals in the band) and subsequent compensation (time alignments) and flattening (in form and phase), brings optimal results and allows the user to redesign the system outputs arbitrarily.

Pass-through is more suitable when OEM systems are heavily altered by audio algorithms to increase the perception of audio quality (referred to by car manufacturers as 3D, surround, spatial, etc.). Thanks to the direct connection between input and output, the pass-through approach allows the configuration of the original audio system to remain unaltered, supporting systems up to 7.2 (PASS-THROUGH) and even beyond (EXTENDED PASS THROUGH). In such cases, the SW does not make any sum of the input channels, it alters its characteristics (it does not carry out the de-equalization), exploiting the greater power (amplification), efficiency (speakers) and control (DSP, limited to EQ and TA) to improve the audio performance of the standard system. The SW, however, carries out an analysis of the input signals very useful to the user during the setup phase, displaying the time delays and cut-off frequencies of the OEM system without the use of measuring instruments.



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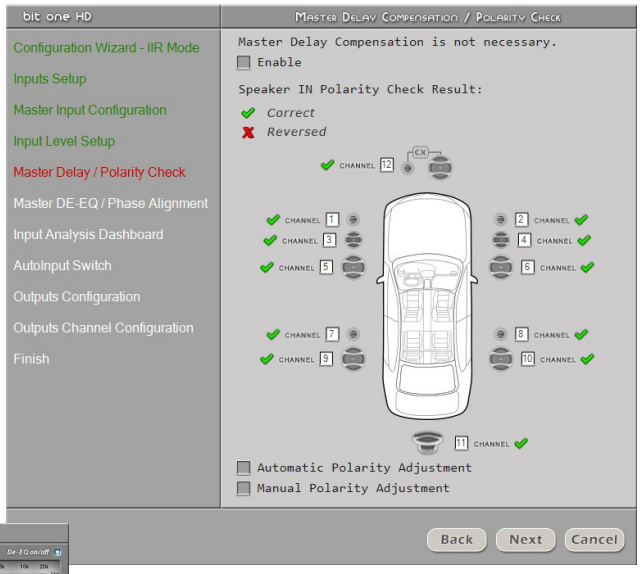
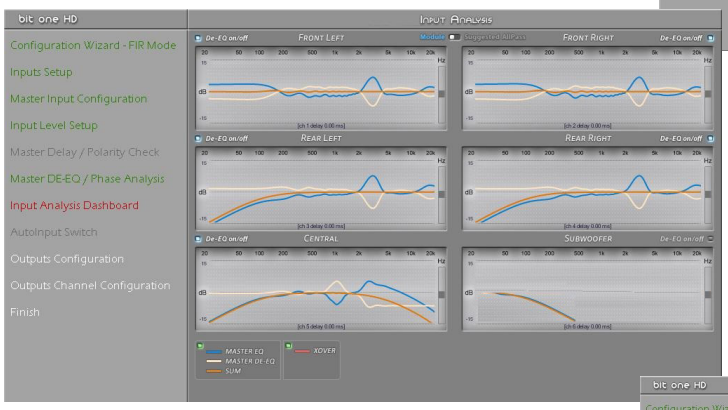
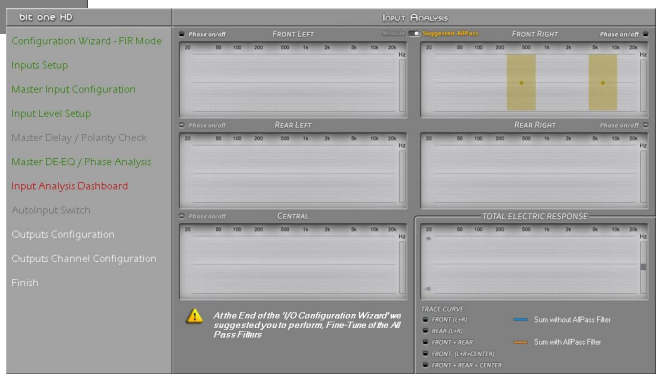
IMPROVED DE-EQ INTRODUCING PHASE ANALYSIS

The SW performs the spectrum analysis and flattens it by doing the magnitude DE-EQ automatically. Additionally, the new SW detect the electric polarity of each input channels and, in case of inverted polarities asks the user whether to correct them automatically or manually.
The new SW also allows the correction of its phase domain response when the user enables the "Phase analysis" option flag. In this case, the presence of OEM All-pass filters will be detected and the algorithm's routine will try to correct them automatically.
A new input analysis dashboard screen has been added and it shows:
a) Results (graphs) from the previous analysis (DE-EQ, DE-Phase, DE-TA) for each input emission front (FRONT L, FRONT R, REAR R, REAR L, CENTER, SUB), in case of AUTOMATIC ROUTING INPUT SETUP.
b) Results (graphs) from the previous analysis (EQ, TIME ALLIGNMENT) for each input channel in case of PASS THROUGH INPUT SETUP.







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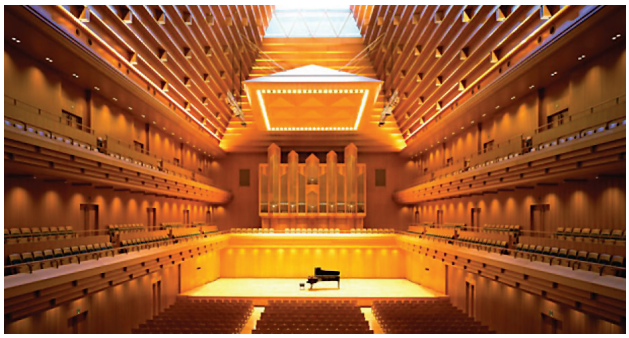
FIR CROSSOVER FILTERS

IIR digital filters faithfully simulate analog filters (active or passive), approximating phase and frequency behavior. Like their analog equivalents, they are affected by unavoidable phase rotations at the cut-off frequency, which are different based on the type of curve used (Butterworth, Linkwitz, Bessel), however still perceived when listening.
In practice, for instance, a fourth-order low-pass IIR filter (24 dB / Oct) at 200 Hz cut-off, plus a high-pass symmetric filter, results in a phase rotation ranging from 0 to -360 degrees along the whole audio spectrum. This phase alteration
affects the perception of the sound image, which highlights inaccuracies in terms of coherence and stability. Think of a 3-way system where the door-mounted 18 cm woofer is 400 Hz crossed with the middle-range, installed on the a-pillar next to a tweeter, itself crossed with the middle-range at 5.000 Hz, using crossovers with IIR filters. The system phase alteration reduces the focus of the instruments on the virtual stage. For this reason, a number of audio enthusiasts prefer to adopt 2-way systems with a woofer and tweeter crossing at 2.500 Hz with a slope of 6 dB / Oct, so as to limit phase rotations as much as possible. This solution, however, presents a number of significant disadvantages, mainly due to increased distortion and lower tweeter power. With a slope of only 6 dB / Oct., the music signal around the cut-off frequency is simultaneously generated by tweeters and woofers to a considerable extent. Since a tweeter and a woofer have very different electro-acoustic parameters, the sum of the two emissions does not produce clear output signals, which results in less clarity in the reproduction of musical transients.



CROSSOVER FIR FILTERS

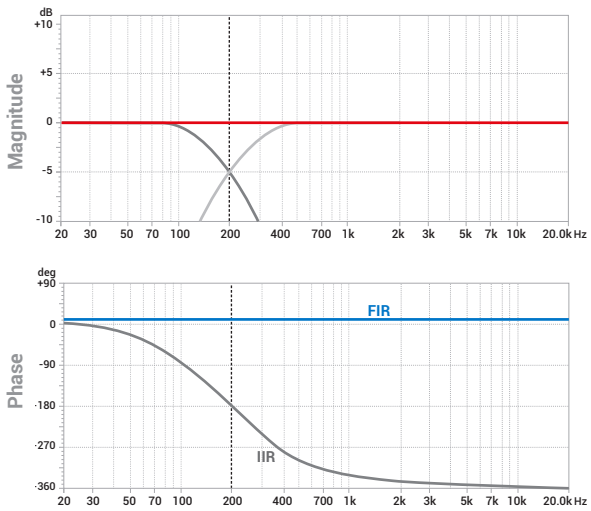


Image 4: electric frequency response simulation (module and phase) of low-pass Linkwitz-Riley fourth order crossover (24 dB/Oct) summed with a symmetrical high-pass featuring a 200 Hz cut-off frequency. IIR filters (in black) and FIR filters (in blue).

FIR EQUALIZATION *(Finite Impulse Response)*

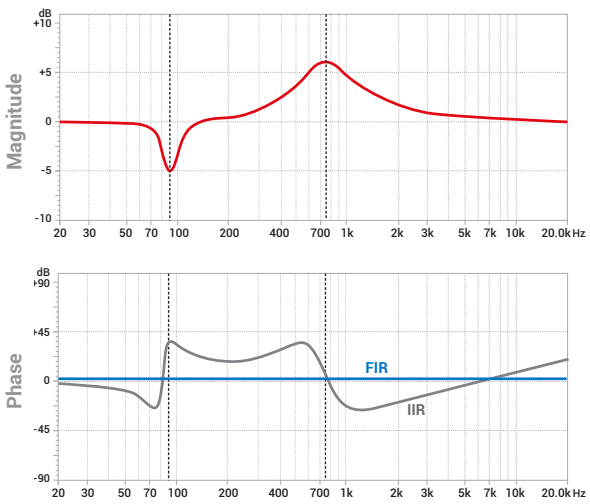


Image 5: electric frequency response simulation (module and phase), of the two poles of the parametric equalizer featuring IIR filters (in black) and FIR filters (in blue).

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EXCEEDING THE LIMITS IMPOSED BY PHASE ROTATIONS

Similarly, to crossover filters, graphic and parametric equalizers based on IIR filters alter the signal phase behaviour with significant effects on audio quality. A heavily equalized signal is characterized by an unclear stereo image and lack of transients definition. Audiophiles often classify this feeling as a veil that blurs the musical message and deprives it of the necessary emotion. The use of FIR filters guarantees an important result: the phase behaviour is linear, free from rotations or indecisions. This also makes the use of filters with a very high slope (up to 48 dB / Oct) possible, without altering the phase response. Such a high slope for the filter enables the midrange and tweeters mounted on the a-pillar to work at lower frequencies without any issues with power handling, thus raising the emission front. Therefore, thanks to the FIR filters the advantages of three or multiple-way systems are completely exploited taking in-car listening experience to a different level. When listening, a system that uses FIR filters provides great clarity in transients reproduction, such as the acoustic piano hammer strikes or the drums. The stereophonic image is deeper and definite. Instruments in the virtual stage are more focused and seem to have more space between them.
Even the intervention of any equalizer over the frequency response, when available in FIR technology, does not modify the audio signal phase, allowing more precise and detailed corrections without conditioning the audio quality.

SHARC® FLOATING POINT DSP

FLOATING-POINT SHARC DSP

FIR filters therefore provide a better audio quality. So why are they used only by the bit One HD Virtuoso? Implementing a FIR filter requires the DSP chip to work with an enormous array of numbers and with much more complex calculations, and is therefore much more burdensome than the one of an IIR filter. As a result, the DSP Analog Device entry level chips of the "Sigma" family other audio processors are built with do not allow FIR filters to be used because the DSP chip does not have enough computing resources to handle this and other features. In addition, the processor control software that uses the SIGMA chips is generated using the "Sigma Studio" graphic interface, which provides a series of pre-set audio codecs to the developers and none of these codecs have FIR filtering. The bit One HD Virtuoso is the only digital audio processor for automotive use equipped with the SHARC series Hi-End Analog Device Processor ADSP-21489. This processor works with a 32-bit floating-point computing unit, a feature that provides it with a dynamic range far superior than the inexpensive fixed-point "Sigma" used by other processors. However, the higher computational power and precision of the SHARC series DSPs requires expert hands to be exploited to the full. It is not enough, as in the DSPs of the "Sigma" family, to use the supplied codecs. That is why a development team with a deep understanding of algorithms programming for digital signal processing is needed. The experience in programming SHARC processors that the Audison development team has built since 2006, with the implementation of the bit One, has made it possible to reach a new level of audio quality for the bit One HD Virtuoso. A new software allows the user to exploit the whole power of the SHARC processor by employing FIR filters on a 9-channel output platform enabling the creation of high-performance audio systems up to 4-way + subwoofer. The result is a quality of sound signal processing which is deeply different from any other DSP. This unique listening experience is achieved thanks to the excellent work of the development team and to the state-of-the-art SHARC DSP, raising audio quality to a level never reached before.

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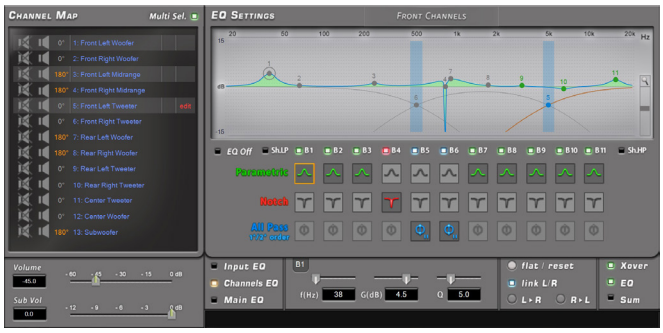
PARAMETRIC EQ

In professional audio parametric equalizers have long since replaced the graphic ones for their greater precision of intervention as well as a considerable decrease in phase alterations. In fact, in graphic equalizers, to flatten a response curve, one is almost always forced to use almost all of the 31 intervention points offered, but each band introduces a phase shift that is added to the adjacent one, with the result of creating rotations on the whole spectrum. With a parametric equalizer, in most cases two or three points of intervention with a precision of a single hertz are sufficient, which thanks to the adjustment of the Q factor width allow you to model the curve to your liking.

3 EQUALIZATION STAGES

Thanks to the processing power the bit One HD Virtuoso provides the user with three parametric equalizers that intervene in different points of the sound processing path. It is important to note that all three equalizers can be disabled or enabled at will.

1. CHANNEL EQ: it is the block used to flatten the emission of all the speakers of each front that should be adjusted with the most linear source possible (optical digital AUX input). Highlighting the corresponding curve, the Channel EQ allows you to hear the sound of the corresponding speaker. For each emission front or single channel the EQ provides 11 parametric poles and 2 FIR shelving type filters. To flatten the emission at the crossing points you can use all-pass filters and notch type filters to suppress any resonances in the passenger compartment. In the FIR configuration, 8 parameter filters are available, a Hi-Shelf (FIR), a Lo-Shelf (IIR) and two parametric points (IIR, full band) that can also be used as notch.



2. INPUT EQ: it is the equalizer that is used to manually flatten the selected input that can be strongly altered as in the case of an OEM Head-Unit with an equalization preset by the manufacturer. This equalizer block is useful for levelling out the sound differences between the sources as in the transition from a Hi-Res (already linear) player and an OEM Head-Unit connected to the master input. In this case the user avails of 8 + 1 parametric intervention points (FIR) + 1 Hi-Shelf (FIR) and many additional features such as:

i. Free selection of input fronts (FRONT L, FRONT R, REAR R, REAR R, CENTER, SUB) in order to unlink the input EQ. User can decide to keep the "All Fronts" default setting to apply the same input EQ, or by de-flagging this option, to work on each input independently.
ii. All-pass filters (2nd order) for each input front (FRONT L, FRONT R, REAR R, REAR R, CENTER, SUB) that can be free tuned (Fc, phase) by the user to linearize OEM phase algorithm.
iii. Quick sensitivity level adjustments 3 stages (ref, +3dB, +6dB), to boost input sensitivity and gain headroom when musical tracks are recorded quite below 0 dBFS (low). This function will be also available on DRC MP.

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3. MAIN EQ: it can be used at will to personalize the system overall response curve, customizing it for different musical genres POP / ROCK / CLASSIC and JAZZ or depending on the passengers inside the car, in combination with the setting of time delays, using different memory presets.
The user can avail of:
i. 4 PEQ (FIR) + 1 PEQ (IIR, up to 100Hz) + 1 high-Shelf (FIR)
ii. Selection of slow/ fast roll settings of DAC converters to change the output filter settings of the bit One HD Virtuoso's DAC device (Analog outputs).

AUDISON RVA

The bit One HD Virtuoso further improves its integration level with OEM Head Units with the RVA function.
This exclusive technology provides the ability to select an auxiliary source (I.e.: a HI-Res audio player or auxiliary wireless interface connected by digital inputs) and adjust its volume via the OEM Head Unit, offering full support to the management of the car priority signals such as parking sensor alerts, GPS messages, phone and vocal commands whilst music is played through the auxiliary source.

This function can be enabled in two ways:
1. By connecting a jack cable to the OEM Head Unit analog AUX IN and to the bit One HD RVA connector
2. By storing the "RVA TONE TEST" file on a USB key or SD card (depending on the car model) and activating the function from the Head Unit with the selection of the storage device via the AUX IN button.

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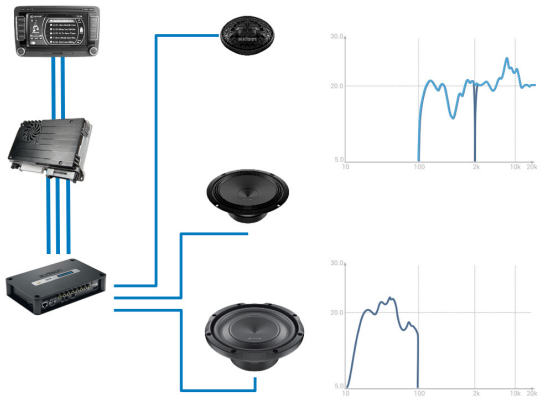
AUDIOPHILE AND OEM INTEGRATION SETUP TOGHETER AT THEIR BEST

The bit One HD Virtuoso is provided with advanced features for the integration with OEM infotainment and a purely audiophile vocation. The ability to independently configure the equalization for the MASTER and AUX inputs allows the user to create two separate systems without using different memory presets, the one dedicated to listening to the OEM Head Unit and the audiophile one to achieve maximum audio performance, **in both cases preserving all the Head Unit functions (gong signal, alert, phone ...).**
Let's see how it is possible.

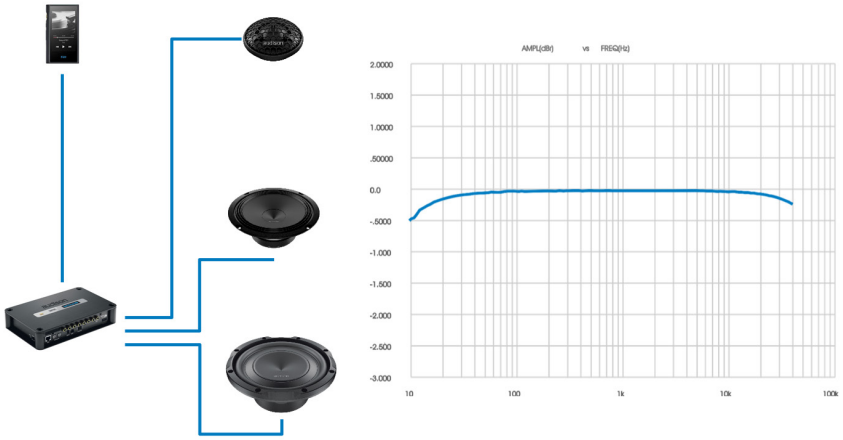
OEM INTEGRATION ON MASTER INPUT

Imagine owning a car with the latest generation infotainment system, equipped with **complex sound processing algorithms**. In these cases the best results are obtained using **the EXTENDED PASS THROUGH configuration which does not mix the input signals**. The OEM channel audio band can be divided into multiple bands with crossover filters, preserving the operation of pre-existing algorithms (phase) in the OEM source. The bit One HD Virtuoso allows you to create a totally different configuration for the AUX inputs, aimed at maximizing the output linearity of high resolution audio devices. Let's see how.



AUDIOPHILE SETTING ON OPTICAL AUX INPUT

The high quality digital signal of a high resolution portable reader does not require any linearization, therefore for the AUX input we set the crossover filters, the time delays and the CHANNEL EQ to **obtain a rigorous audiophile setup**.
When we **switch from the MASTER input to the OPTICAL AUX input we switch from the OEM Integration system to the audiophile one**. In addition, with the **RVA technology (Remote Volume Aux)**, the transition from MASTER to AUX can be carried out **using the AUX button of the OEM source and from this adjust the volume**, combining total integration with the audiophile setup, preserving all the Head-Unit functions (gong signal, alert, phone ...).



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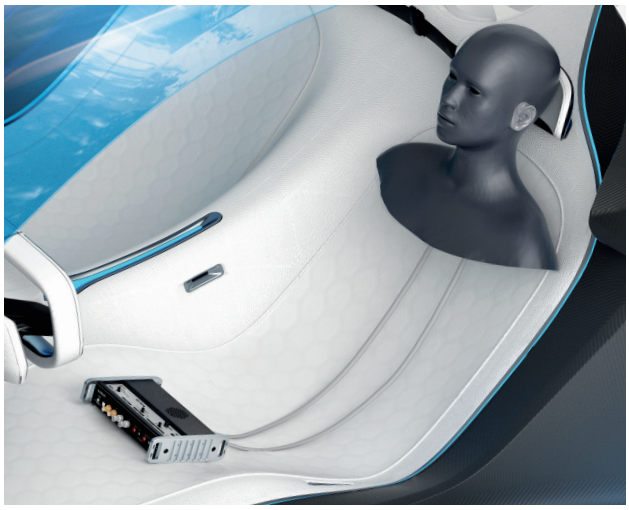
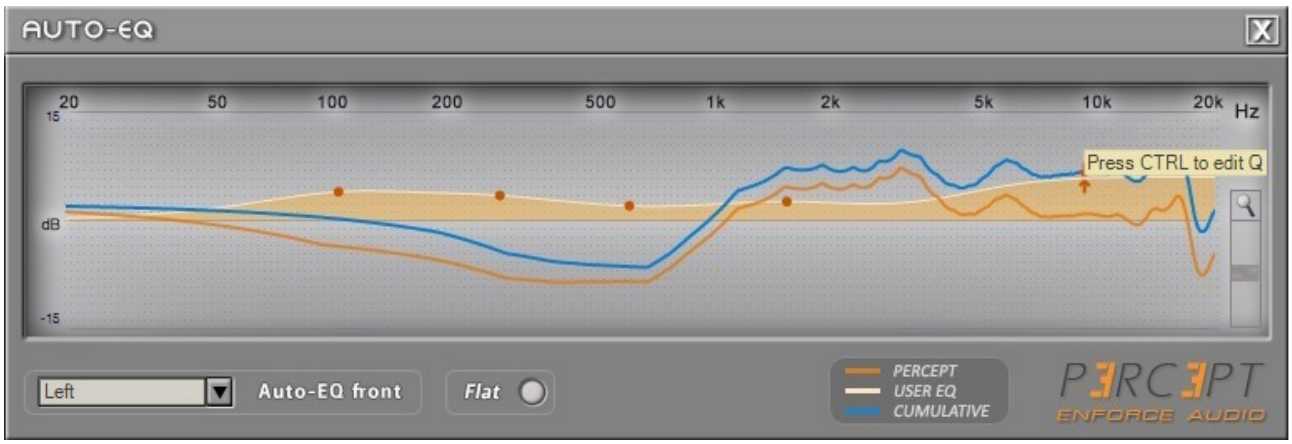
AUDISON BIT TUNE AUTO TUNING

Audison bit Tune is the auto-calibration system for bit One HD Virtuoso for the setup of basic parameters (time alignment, equalization, levels, etc.), ensuring a correct acoustic result in a very short time. The bit Tune automatic routine also includes the diagnosis of common connection "errors" (channels/phase inversion, no signal from a channel/cable, etc.), to set the specialist free from his "routine" work and allow him to focus on the art of "fine-tuning" while listening.

bit Drive your sound



Thanks to the new PERCEPT ENFORCE AUDIO function it is possible to model the total system response proposed by the bit Tune auto-eq as desired.



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CONNECTIVITY

The bit One HD Virtuoso is equipped with two optical digital inputs (TOSLINK) to connect the bit DMI interface to the processor simultaneously, allowing the user to extract the digital audio signal from an OEM system equipped with factory MOST bus and from an Hi-Res player. The 12 analog along with 2 auxiliary inputs make it compatible with any OEM system and the 13 output channels, both analog (RCA) and digital equipped with double AD LINK connector, provide the ability to create very complex full-active systems.

OEM INTEGRATION SPECIAL FUNCTIONS

The bit One HD Virtuoso further improves its integration level with OEM head units, offering full support to the management of the car priority signals such as parking sensor alerts, GPS messages, phone and vocal commands whilst music is played through an auxiliary source such as a Hi-Res audio player. The functions listed below further enhance the processor's control capabilities.

RVA (Remote Volume Aux)
This exclusive technology allows to select an auxiliary source (ES: an HI Res audio player connected by digital inputs) and adjust its volume via the OEM Head Unit.

CONTROLS
External service terminals to select the presets as well as the OPTICAL 1, OPTICAL 2 and AUX inputs.

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DRC MP - DIGITAL REMOTE CONTROL MULTIMEDIA PLAY

The DRC MP supplied with the bit One HD Virtuoso features a reduced size and a total black look with possibility of customizing the RGB light of the volume control as well as the keys. A Joystick has been added to the volume knob, providing the ability to intuitively browse the menu, adjust the display colour and brightness and also control a bit Play HD that may be connected to the processor.
The display features black background with white characters, for maximum readability also at daytime, and a brightness sensor, for the automatic setup of the Night&Day function.

Image 13: DRC MP (Digital Remote Control Multimedia Play supplied with bit One HD)

It is possible to select forty-two different colours on the keyboard.

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bit One HD

Virtuoso

High Definition Signal Processor

POWER SUPPLY	
Nominal power supply voltage / Fuse	11 ÷ 15 VDC / 2A
Pulse operating voltage	6,5 ÷ 17 VDC
Idling current	0.75 A
Switched off without DRC MP	2 mA
Switched off with DRC MP	5 mA
Remote IN	4 ÷ 15 VDC (1 mA)
Remote OUT	4 ÷ 15 VDC (130 mA)
ART - Automatic Remote Turn on/off from OUTPUT BTL speakers	1.5 ÷ 7 VDC
SIGNAL STAGE	
Distortion - THD @ 1 kHz, 1 VRMS Output	0.004 %
Bandwidth @ -3 dB	10 Hz ÷ 44 kHz
S/N ratio @ A weighted, 4 V Output, 2 V MASTER input	104 dBA
S/N ratio @ A weighted, 4 V Output, 2 V AUX input	105 dBA
S/N ratio @ A weighted, 4 V Output, OPTICAL IN1/IN2 input	110 dBA
Channel Separation @ 1 kHz	80 dBA
Input sensitivity PRE IN / Master	1.3 ÷ 9 VRMS
Input sensitivity Speaker IN / Master	5 ÷ 32 VRMS
Input sensitivity AUX	0.7 ÷ 5 VRMS
Input impedance Speaker In / AUX / Pre In	15 kΩ (Pre IN / AUX) 5 Ω (Speaker IN)
Max Output Level 0.1% THD	4 V
INPUT STAGE	
Low level (Pre)	Ch1 ÷ Ch6; AUX L/R
High Level (Speaker In)	Ch1 ÷ Ch12
Digital	2 x Optical S/PDIF; Max 192 kHz/24 bit
OUTPUT STAGE	
Low level (Pre)	Ch1 ÷ Ch13 (IIR mode); Ch1 ÷ Ch 9 (FIR mode)
Digital AD Link 1	Ch1 ÷ Ch8 (IIR / FIR mode)
Digital AD Link 2	Ch9 ÷ Ch13 (IIR mode); Ch9 only (FIR mode)
CONNECTION	
From / To Personal Computer	1 x micro USB
To Audison Amplifiers	2 x (AC Link / AD LINK) control bus
To Audison DRC MP	1 x AC Link

CROSSOVER	
Filter type	Full / High-Pass / Low-Pass / Band-Pass
Filter mode and slope	Linkwitz @ 12 / 24 / 36 / 48 dB
	Butterworth @ 6 / 12 / 18 / 24 / 30 / 36 / 42 / 48 dB
	Bessel @ 6 / 12 / 18 / 24 / 30 / 36 dB
	FIR @ 6 / 12 / 18 / 24 / 30 / 36 / 42 / 48 dB
Crossover Frequency	Lo-Pass: 0 ÷ 44k Hz (1 Hz step) Hi-Pass: 0 ÷ 20k Hz (1 Hz step)
Phase control	0° / 180°
EQUALIZER (10 Hz ÷ 20 kHz)	
High Level Inputs (Speaker In)	Automatic De-Equalization, Delay Compensation, All Pass Compensation, Polarity check
AUX Input	Parametrics Equalizer: +12 dB ÷ -15 dB; 10 poles FIR type
OPTICAL IN1/IN 2 Inputs	Parametrics Equalizer: +12 dB ÷ -15 dB; 10 poles FIR type
OUTPUTS	IIR mode: N.13 Parametrics Equalizers: +12 dB ÷ -15 dB; 13 poles
	FIR mode: N.13 Parametrics Equalizers: +12 dB ÷ -15 dB; 9 poles FIR type + 3 poles IIR type
MAIN EQ	Parametric Equalizer: +12 dB ÷ -15 dB; 5 poles FIR type + 1 pole IIR type
Dynamic Equalization	Self-adjusting System between low and high listening levels
Bass Boost	Adjustable parametric pole (±12 dB; 10 ÷ 500 Hz)
TIME ALIGNMENT	
Distance	1.4 ÷ 756 cm / 0.6 ÷ 297.7 inches
Delay	0 ÷ 22 ms
Step	0.04 ms, 1.4 cm, 0.6 inch
GENERAL REQUIREMENTS	
PC connections	USB 1.1 / 2.0 / 3.0 Compatible
Software/PC requirements	Microsoft Windows (32/64 bit): XP, Vista, Windows 7, Windows 8, Windows 10
Video Resolution with screen resize	min. 800 x 600
Ambient operating temperature range	0 °C to 55 °C (32°F to 131°F)
SIZE	
W (Width) x H (Height) x D (Depth) mm/inch	148 x 43.6 x 233 / 5.82" x 1. 7" x 9.17"
Weight kg/lb	1.775 / 3.9

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Elettromedia, an Italian company, is a leader within the world-wide car Hi-Fi market.
Born in 1987 in Potenza Picena by a group of friends who shared the same passion for in-car high fidelity, throughout the past years Elettromedia has been walking the path of excellence: its products are distributed in more than 50 countries; the company has received many awards and acknowledgements from the most authoritative leaders within the car audio industry; it also can boast reviews of more than 3000 pages published in 30 different languages (visit: https://www.elettromedia.com/media-centre/press-review/).
The Elettromedia brands are Audison, Hertz and Connection. Through a co-branding strategy, the company offers all of the components required for a complete, top-level car audio system. Since 2008, Elettromedia has a joint venture with Lavoce Italiana a company specialized in loudspeaker design and production for the professional audio industry.

Elettromedia
web site

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AWARDS

EISA AWARD Best Product 2018-2019 — IN-CAR HIGH-END COMPONENT — Audison TH K2 II A Coro
EISA AWARD Best Product 2018-2019 — IN-CAR SUBWOOFER — Audison APBX 10 AS
EISA AWARD Best Product 2017-2018 — IN-CAR INTEGRATION — Hertz H8 DSP
EISA AWARD Best Product 2016-2017 — IN-CAR PROCESSOR — Audison bit One HD
EISA AWARD Best Product 2016-2017 — IN-CAR SUBWOOFER — Hertz Mille Legend ML 2500.3
EISA AWARD Best Product 2015-2016 — IN-CAR SPEAKER SYSTEM — Hertz MLK 1650.3
EISA AWARD Best Product 2014-2015 — IN-CAR HD MEDIA PLAYER — Audison bit Play HD
EISA AWARD Best Product 2014-2015 — IN-CAR INTEGRATION — Audison AP8.9 bit
EISA AWARD Best Product 2013-2014 — IN-CAR AMPLIFIER — Hertz HCP 5D
EISA AWARD Best Product 2012-2013 — IN-CAR SUBWOOFER — Audison Voce AV 10
EISA AWARD Best Product 2011-2012 — IN-CAR AMPLIFIER — Audison Voce AV 5.1k
EISA AWARD Best Product 2010-2011 — IN-CAR SPEAKER SYSTEM — Audison Voce AV K6
EISA AWARD Best Product 2009-2010 — IN-CAR INTEGRATION — Audison bit one
EISA AWARD Best Product 2008-2009 — IN-CAR SPEAKER SYSTEM — Audison Thesis TH K3 orchestra
EISA AWARD Best Product 2008-2009 — IN-CAR AMPLIFIER — Audison Thesis TH due
EISA AWARD Best Product 2007-2008 — IN-CAR SUBWOOFER — Hertz ML 2500
EISA AWARD Best Product 2006-2007 — Mobile Amplifier — Audison LRx 6.9

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INNOVATIONS INTERNATIONAL CES DESIGN & ENGINEERING SHOWCASE HONORS 2005
EISA AWARDS MOBILE AMPLIFIER 2004-2005 Audison Thesis HV Venti
EISA AWARDS MOBILE AMPLIFIER 2003-2004 Audison SRx 3
EISA AWARDS MOBILE ELECTRONICS LOUDSPEAKER 2002-2003 Hertz Space 6K 25

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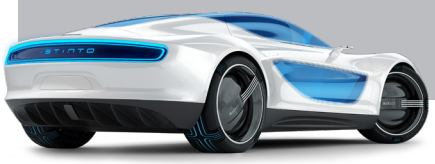

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