NAV-TV

INTERFACING THE FUTURE

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zen-v

AUDI / VW / Porsche / Bentley M.O.S.T. 150 to 12-channel Analog & Digital sound processor

NTV-KIT860

MOST®

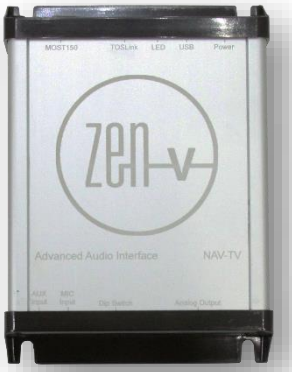
WARNING: Do not connect any RCA cables to the ZEN-V interface or additional processors prior to properly grounding aftermarket amplifier(s)!

Overview

The NAV-TV ZEN-V processor seamlessly converts late model AUDI, VW, Porsche & Bentley factory MOST-150 audio bus to 12-channel analog RCA and TOSLink output. Adding aftermarket amplifiers to the OE MIB, MIB2 or PCM4 / 4.1 system has never been so simple and seamless. This kit integrates with the OEM M.O.S.T.® bus to retain volume control, full fade and balance (analog only), treble, mid-range, bass control & Bluetooth voice calls with no external speaker (true OEM integration). *NOTE: OEM radio systems not equipped with an amplifier or fiber must be flashed with the VAG-COMM or NAV-TV's ZEN-V-PRG (NTV-KIT861, sold separately) prior to installation. Vehicles equipped with an OEM amplifier do not need to be flashed.*

Kit Content

ZEN MOST Fiber
NTV-CAB134



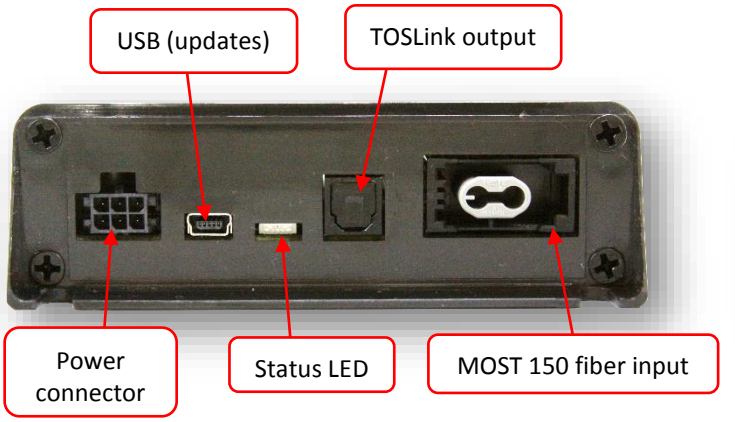
ZEN-V Interface
NTV-ASY272

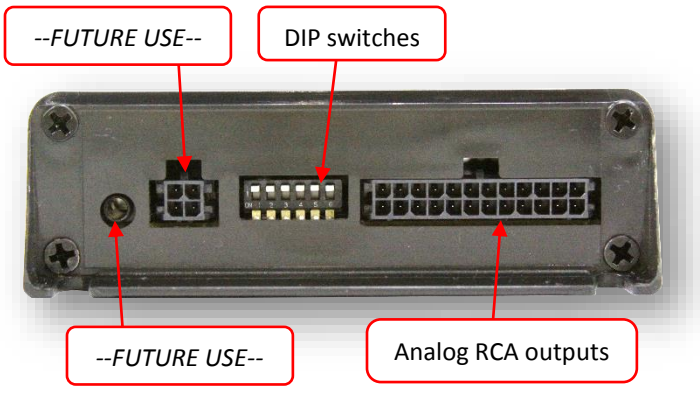
ZEN Power Harness
NTV-HAR316

ZEN RCA Harness
NTV-HAR315

USB Cable (updates)
NTV-CAB009

ZEN-V overview





ZEN-V Compatibility (MIB, MIB2 or PCM4/4.1 radio only)

Year(s)	Make	Model
2015+	AUDI	Any model with *confirmed MIB, MIB HS or MIB2 radio (A3, TT, etc.)*
2017+	AUDI	A3, A4, A5, A6, A7, A8, Q5, Q7, S3, S4, S5, S6, S7, S8, SQ5, TT
2017+	Porsche	911, Boxster, Cayenne, Cayman, Macan, Panamera
2017+	Bentley	Bentayga
2016+	VW	ANY model with MIB, MIB2 or MIB-HS

ZEN-V Installation

1. If this vehicle has a factory amplifier, it must be removed and the ZEN-V can be installed into its place. If this vehicle is not amplified from factory, install the ZEN-V behind the radio.

2. Connect the following wires from the provided ***power harness***:

Wire Side

ZEN-V pin	Color	To vehicle:
1	Yellow	12v (+) *Constant*
3	Violet	*--Reserved, NOT USED--*
4	Black	Ground (-)
6	Blue	12v (+) remote output*

This remote wire must be used for aftermarket amplifier remote for proper functionality.* ***If installing more than one amplifier/DSP, a relay must be used for reliable turn-on (500mA max).*

3. ***Before connecting power to the ZEN-V,*** adjust dip-switch settings for the desired options:

	Time Alignment	Attenuation	TOSLink DownMix	Loudness	Vehicle Settings	
Position	DIP 1	DIP 2	DIP 3	DIP 4*	DIP 5	DIP 6
UP (off)	*Front Row*	Full Scale output (0 dB)	*DownMix ON*	Loudness OFF	***See Below***	
DOWN (on)	*Driver Focused*	-12 dB output	*DownMix OFF*	Loudness ON		

DIP 5	DIP 6
X	**X**

AUDI

DIP 5	DIP 6
	X
X	

Porsche

DIP 5	DIP 6
X	
	X

Bentley
Bentayga

DIP 5	DIP 6
X	**X**

VW

4. If using analog RCAs for signal to the amplifier, connect according to the reference chart below.
WARNING: Do not connect RCA cables to this interface until all amplifiers/external processors are properly grounded. Failure to do this may cause damage to the interface and VOID the warranty!

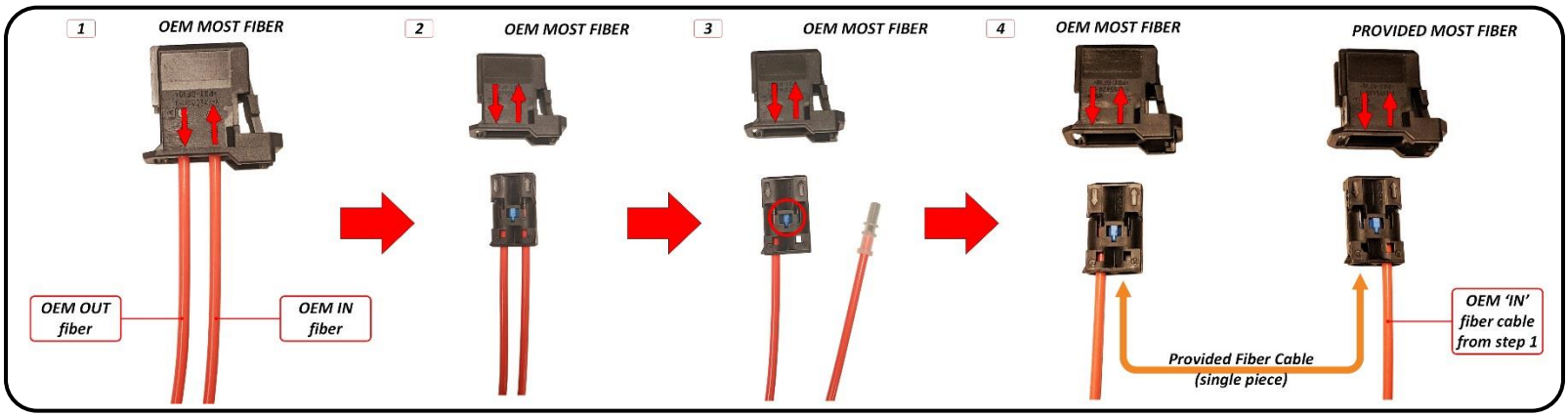
1	2	3	4	5	6	7	8	9	10	11	12
Left Front	Right Front	Left Front	Right Front	Left Front	Right Front	Left Rear Door	Right Rear Door	Left Rear Center	Right Rear Center	Center	Sub

5. If using TOSLink for signal to the amplifier, connect the cable to the TOSLink port shown on page 2.
NOTE: both Analog and Digital output sound simultaneously, regardless of which type is used.
6. Connect the provided ***MOST Fiber Cable*** from the (previously removed) amplifier, or from the radio's fiber port to the MOST port on the ZEN-V.

ZEN-V General Installation Notes

- This interface can be installed in vehicles with or without an amplifier & with or without MOST fiber optic presently installed.
    1. *<u>Vehicles with fiber amplifier</u>: the amplifier must be removed. Connect the OEM fiber previously connected to the amp, directly into the ZEN-V.*
    2. *<u>Vehicles without OEM amplifier or MOST fiber</u>: Use the supplied fiber optic extension and connect from the fiber port behind the radio to the MOST fiber port on the ZEN-V. NOTE: If the vehicle does not possess an OEM amplifier, you must program the system for external amplifier for the ZEN-V to operate properly. Use a VAG-COM or NAV-TV's ZEN-V-PRG programmer (NTV-KIT861 sold separately).*
    3. *<u>Vehicles without amplifier **but still equipped with fiber**</u>**:** Disconnect the fiber from the radio, disassemble the fiber coupler and route the provided MOST extension into the factory MOST loop like shown below (to continue proper MOST data flow):*

**NOTE: in this scenario, the vehicle still must be programmed for external amp (see red note above).*

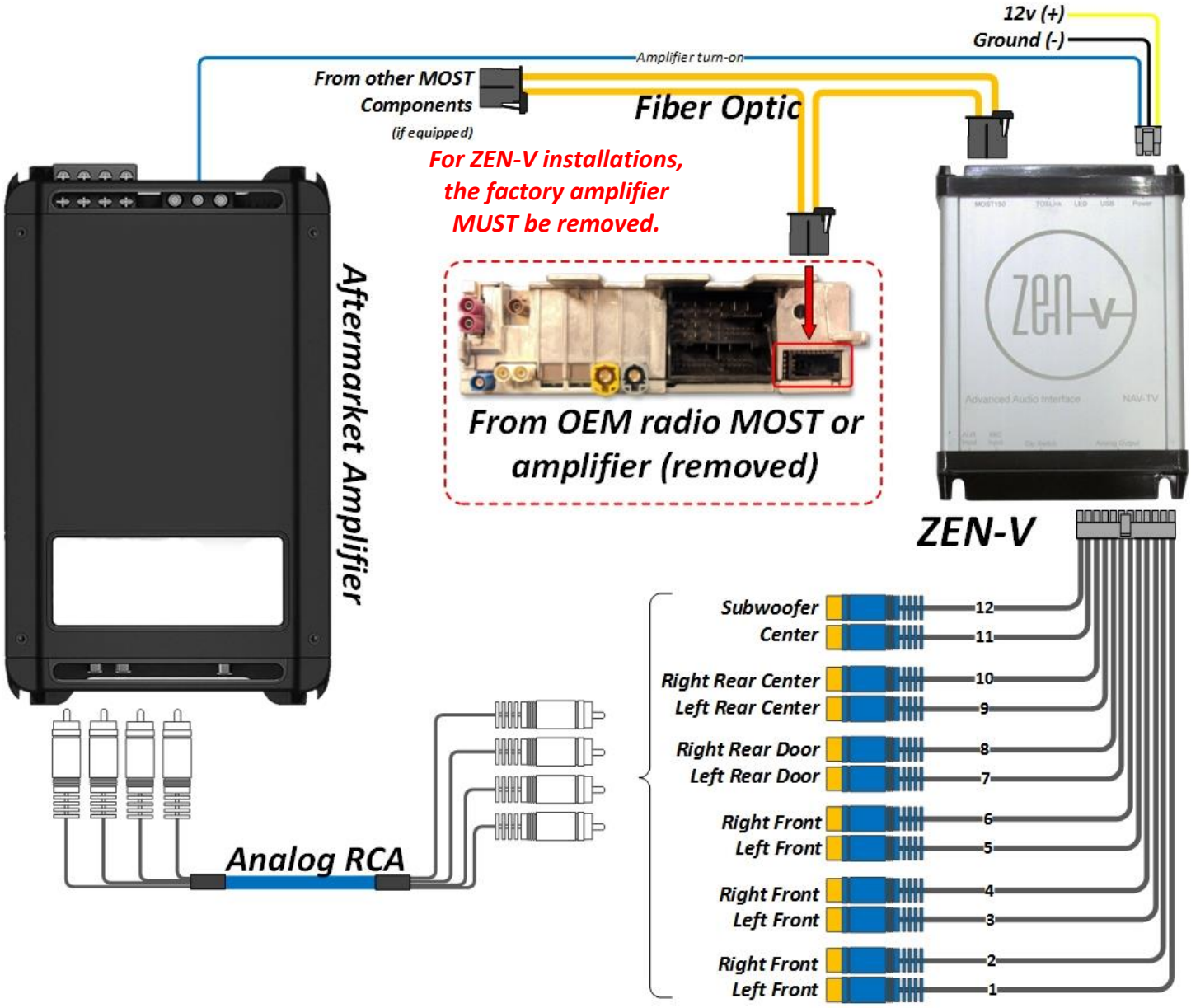


- ***Tuning tips:***
    1. Before beginning tuning process (especially with external EQ/Processors), set Bass & Treble on the head unit <u>for each source</u> to flat (0).
    2. *Begin with amplifier/EQ gains all the way **down.***
    3. *With dynamic music playing, adjust the radio volume to <u>maximum</u>.*
    4. *Adjust the amplifier/EQ gains to <u>desired maximum</u> level.*
- From the factory, some vehicles' audio will *attenuate* when in reverse. Simply set the 'reverse volume' to desired level <u>while in reverse</u> to adjust this. The ZEN-V will retain this method. The same is true for NAV guidance audio and BT voice calls.

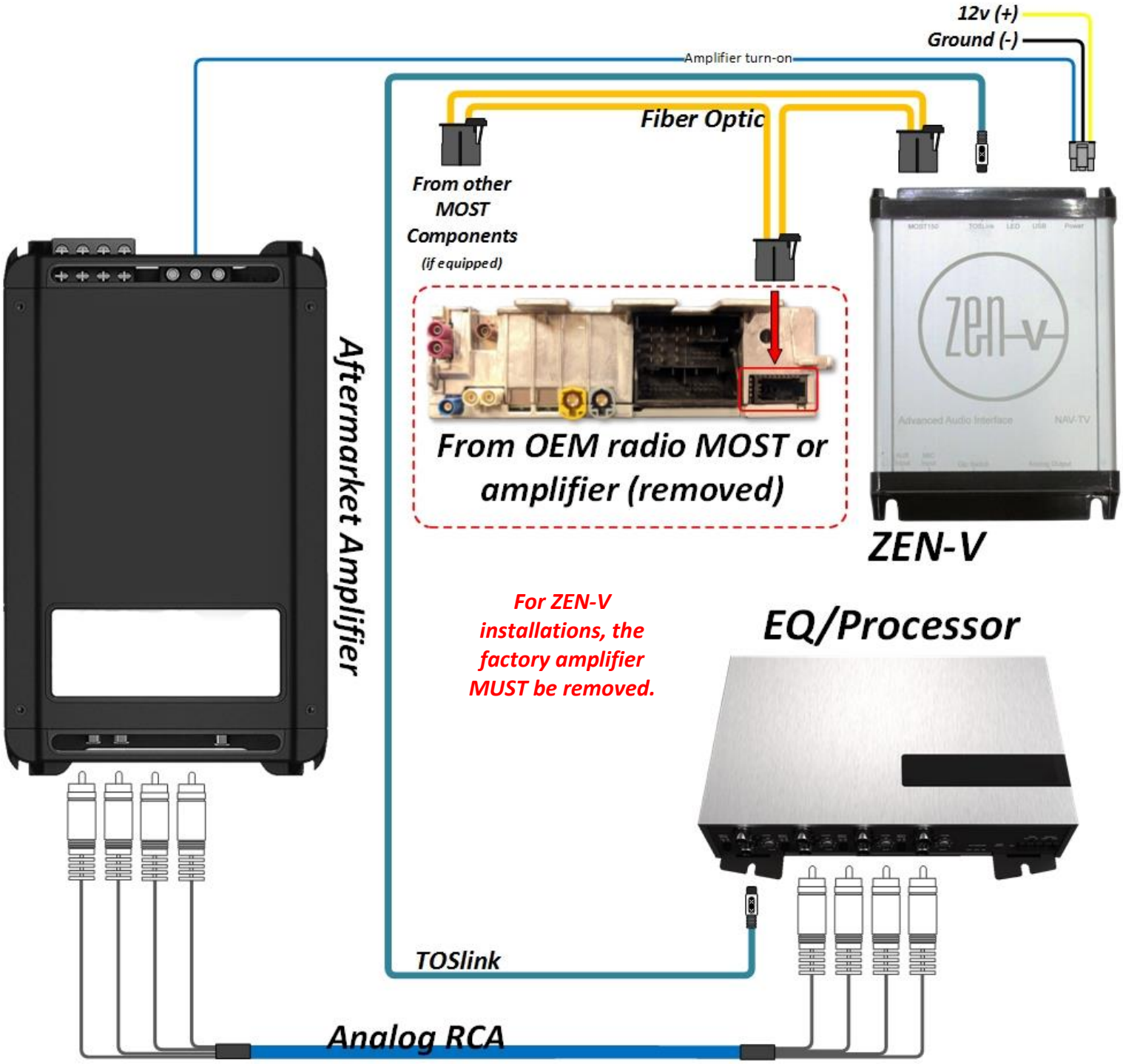
Multi-Color LED Status Indication

LED Status	Indication
Solid Red	MOST Active
Violet	MOST traffic commands
Blinking Red	*Peaking* (maximum digital signal level achieved)
Blinking Blue	PC Link with app (future use)

ZEN-V System Layout (analog)



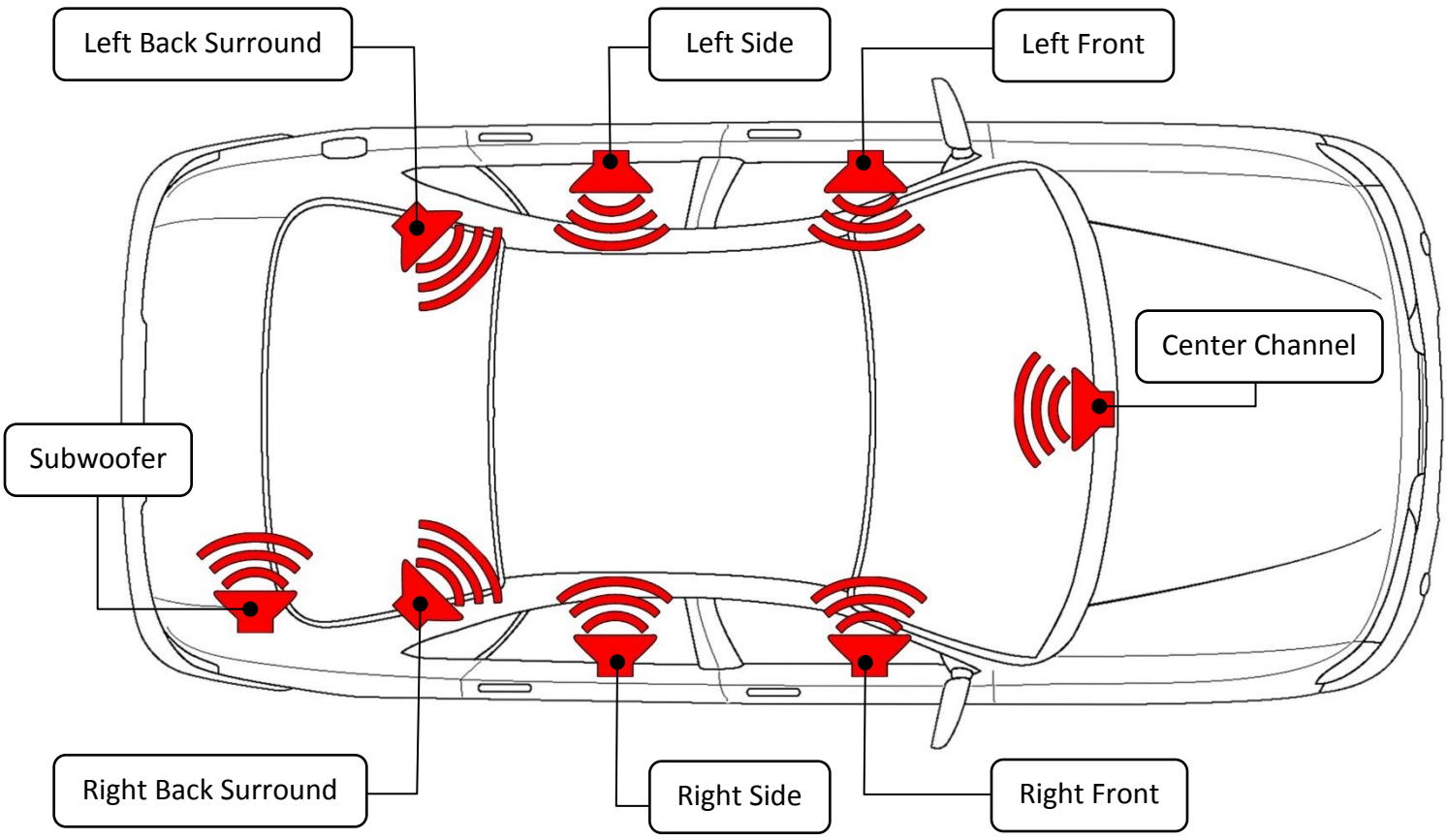
ZEN-V System Layout (digital TOSLink)



ZEN DownMix Scenario Examples

Source Signal	DownMix	TOSLink Output	Analog FRONT OUT	Analog SIDE OUT (7,8)	Analog REAR OUT (9,10)	Center Channel OUT	SUB OUT
2 Channel (Music)	ON	Stereo	Stereo Front	Stereo Rear	Stereo Rear	Muted	Mono (L+R)
2 Channel (Music)	OFF	Stereo Front	Stereo Front	Stereo Rear	Stereo Rear	Center	Mono (L+R)
5.1 Surround	ON	Mixed Stereo*	Front + Center	Rear + Center	Rear + Center	Muted	Mono (L+R)
5.1 Surround	OFF	Stereo Front	Stereo Front	Rear Back Surround	Rear Back Surround	Center	LFE**
7.1 Surround	ON	Mixed Stereo*	Front + Center	Rear + Center	Rear + Center	Muted	Mono (L+R)
7.1 Surround	OFF	Stereo Front	Stereo Front	Side Surround	Rear Back Surround	Center	LFE**

**Mixed Stereo: (Left = LeftFront + Center + LeftSurround + LFE), (Right = RightFront + Center + RightSurround + LFE)*
***LFE: Low Frequency Effects: Surround subwoofer output.*



When flashing the vehicle for fiber (if not factory fiber or amp-equipped), you will gain extra audio controls not available previously. See below for each vehicle radio type for what gets added.

Added controls & options (AUDI A3: MIB)

- For AUDI A3, *Surround* is added, and is used for *direct Subwoofer control* from the ZEN-V (RCA #12)

Added controls & options (AUDI: MIB-HS)

- For AUDI vehicles with MIB HS or MIB 2 (new high-res GUI), Subwoofer, Bass, Mid-range and Treble are now individually controllable from the radio screen, direct to the ZEN-V.

Added controls & options (VW vehicles: MIB 2 STD)

- For VW vehicles, an extra sound control menu is added.
  Subwoofer, Bass and Treble are now individually controllable from the radio screen, direct to the ZEN-V.

ZEN-V Technical Specifications

Hardware & Software	
Current HW version:	--1r0--
Current SW version:	ZEN-V-1.6.1-5-2-18
Compatible SW (update) OS:	Windows 7 (64 bit), 8, 10
INPUT	
Digital Input	MOST 150 Fiber Optic
OUTPUT	
Digital Outputs:	TOSLink
Digital Outputs supported:	24bit/48kHz
Frequency Response (digital):	18Hz – 24kHz
Analog Outputs:	12 channels (RCA)
Output Voltage *Peak:*	6v
Output Voltage *RMS:*	2.1v
Analog Output Type:	Single-Ended
S/N Ratio (analog):	123dB
Frequency Response (analog):	18Hz – 24kHz
THD+N @ -1dBFS	-94dB
DAC	48kHz 32bit
DSP	32bit Floating Point
Delay (Time Alignment)	Selectable
Power Supply	
Current Consumption Stand-by	<1 mA
Current Consumption Operational	350 mA MAX
Operational Voltage	7V – 20V DC
Amp Turn-On Output	Automatic
Amp Turn-On Voltage	V-batt
Amp Turn-On Current Limitation	500mA
Other	
Dimensions:	4”x5”x1 3/8”
Weight:	10 oz
Country of Origin:	USA

FAQ

- For installations with this ZEN processor, make certain that any added amplifier's *ground* resistance (reference vehicle battery ground) ***does not exceed 1 ohm.***
- If you've installed a third-party DSP (receiving signal from the ZEN, before the amplifier) and you're having issues with *audio bleeding from one channel to another, echoing Bluetooth phone calls or any other signal processing issues,* ***rule out the ZEN first by temporarily bypassing the third-party DSP and running signal directly from the ZEN to the amplifier(s) and verify the problem still exists before calling technical support.***

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