

NAV-TV

INTERFACING THE FUTURE

3950 NW 120th Ave, Coral Springs, FL 33065 TEL 561-955-9770 FAX 561-955-9760



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

NTV-KIT997



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, MIB2.5, MIB3 or PCM4, PCM4.1, PCM5.0 and PCM6 system has never been so simple. This kit integrates with the OEM M.O.S.T.® bus to retain volume control, full fade (analog only) and balance, 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.* **Cars with the MIB3 system require our OBD programmer, regardless of whether they have an Amp or not.**

Kit Content



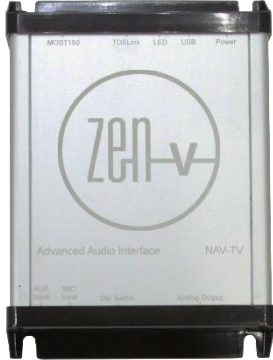
ZEN MOST Fiber
NTV-CAB134



ZEN Power Harness
NTV-HAR316



USB Cable (updates)
NTV-CAB009



ZEN-V Interface
NTV-ASY272

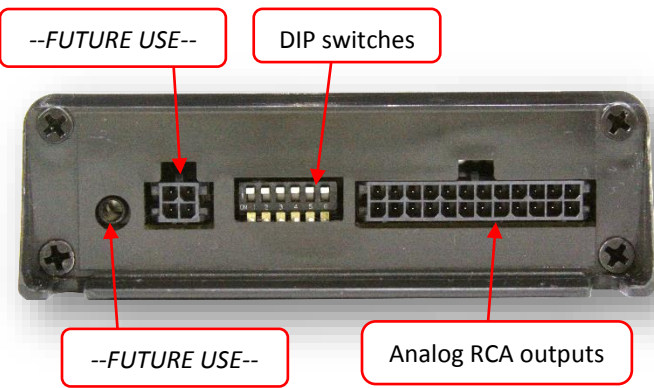
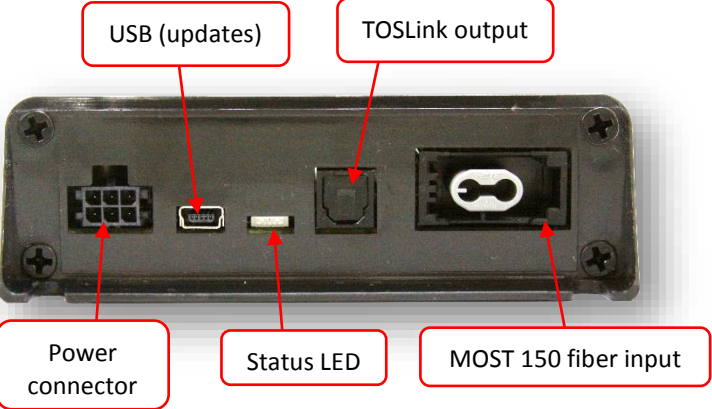


ZEN MIB3
Programmer
NTV-KIT996



ZEN RCA Harness
NTV-HAR315

ZEN-V overview



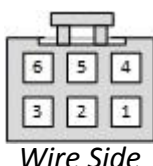
	Year(s)	Make	Model
ZEN-V Compatibility <i>(MIB, MIB2, MIB2.5 MIB3 or PCM4, 4.1, 5.0 or 6 radio only)</i>	2015+	AUDI	Any model with <i>confirmed</i> MIB, MIB2, MIB3 or MIB HS (A3, TT, etc.)
	2017+	AUDI	A3, A4, A5, A6, A7, A8, Q5, Q7, S3, S4, S5, S6, S7, S8, SQ5, TT, e-tron
	2017+	Porsche	911, Boxster, Cayenne, Cayman, Macan, Panamera
	2017+	Bentley	Bentayga
	2016+	VW	ANY model with MIB, MIB2, MIB3 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 is an MIB3 system, then the Zen is installed at the MMI module and the amp remains connected.**

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**:



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. **A relay should 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 or Audi MIB3

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

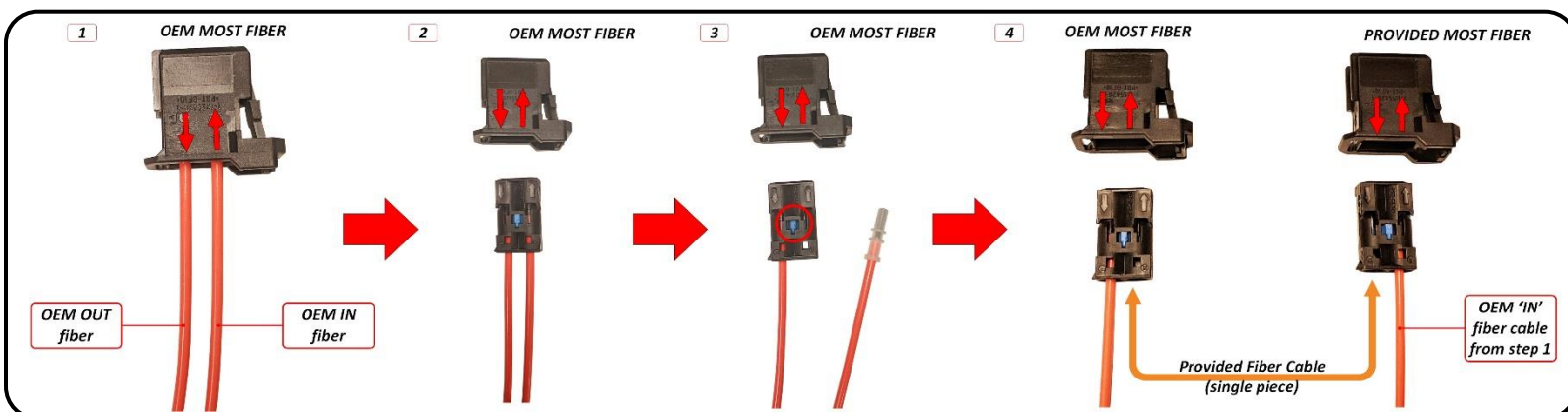
5. If using TOSLink for signal to the amplifier, connect the cable to the TOSLink port shown on page 2. **NOTE: both Analog and Digital output sound simultaneously, regardless of which type is used.**

6. Connect the provided **MOST Fiber Cable** from the (previously removed) amplifier, or from the radio/MMI'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.
 - Vehicles with fiber amplifier: the amplifier must be removed (unless it is MIB3.) Connect the OEM fiber previously connected to the amp, directly into the ZEN-V.
 - Vehicles without OEM amplifier or MOST fiber: Use the supplied fiber optic extension and connect from the fiber port behind the radio/MMI 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). For an MIB3 System, only the MIB Programmer (NTV-Kit 996) must be used.**
 - Vehicles with MIB3 or without an amplifier but still equipped with fiber: Disconnect the fiber from the radio, disassemble the fiber coupler and route the provided MOST extension into the factory MOST loop as 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).



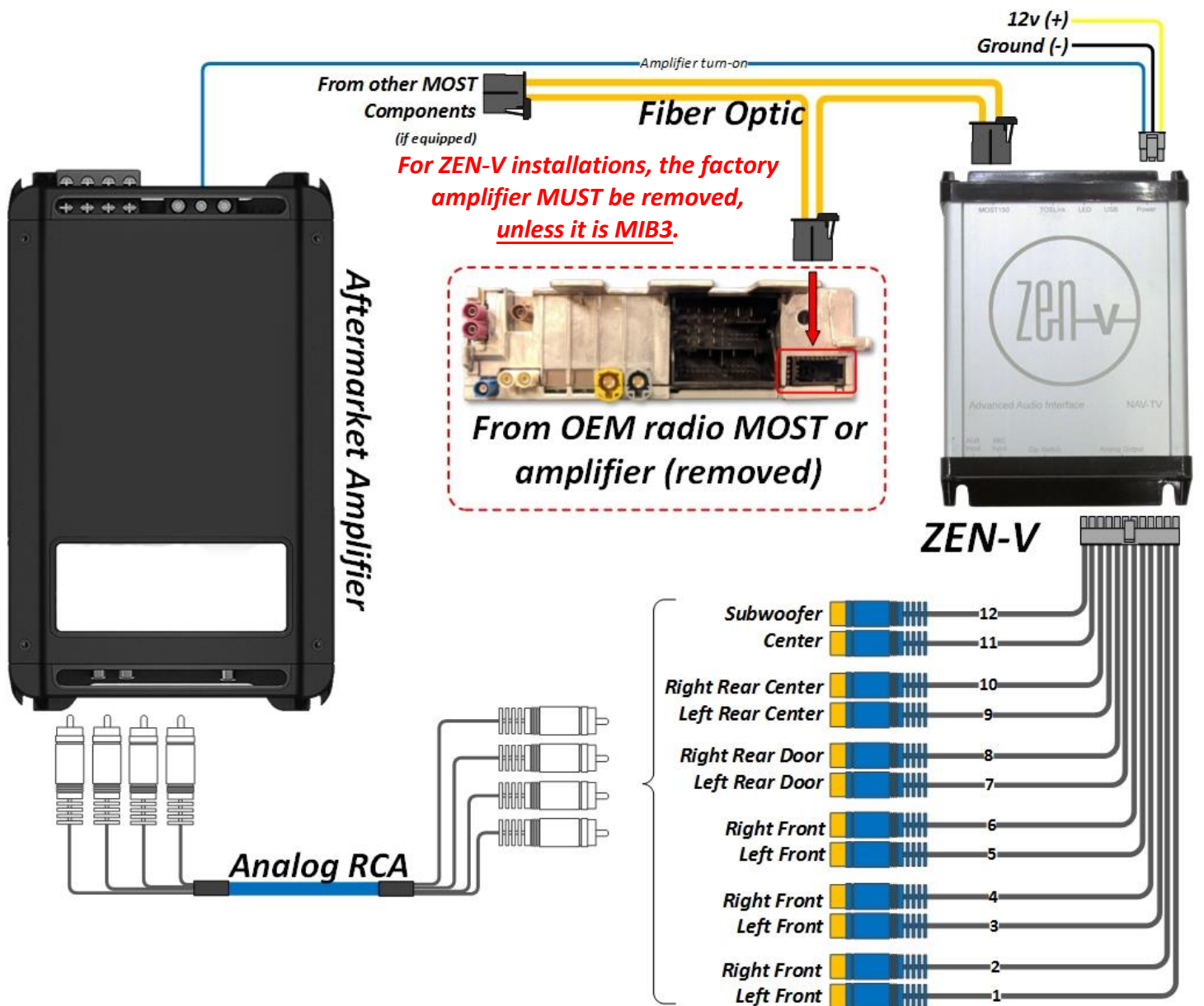
- Tuning tips:**
 - Before beginning tuning process (especially with external EQ/Processors), set Bass & Treble on the head unit for each source to flat (0).
 - Begin with amplifier/EQ gains all the way **down**.
 - With dynamic music playing, adjust the radio volume to maximum.
 - Adjust the amplifier/EQ gains to desired maximum level.
- From the factory, some vehicles' audio will *attenuate* when in reverse. Simply set the 'reverse volume' to desired level while in reverse 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

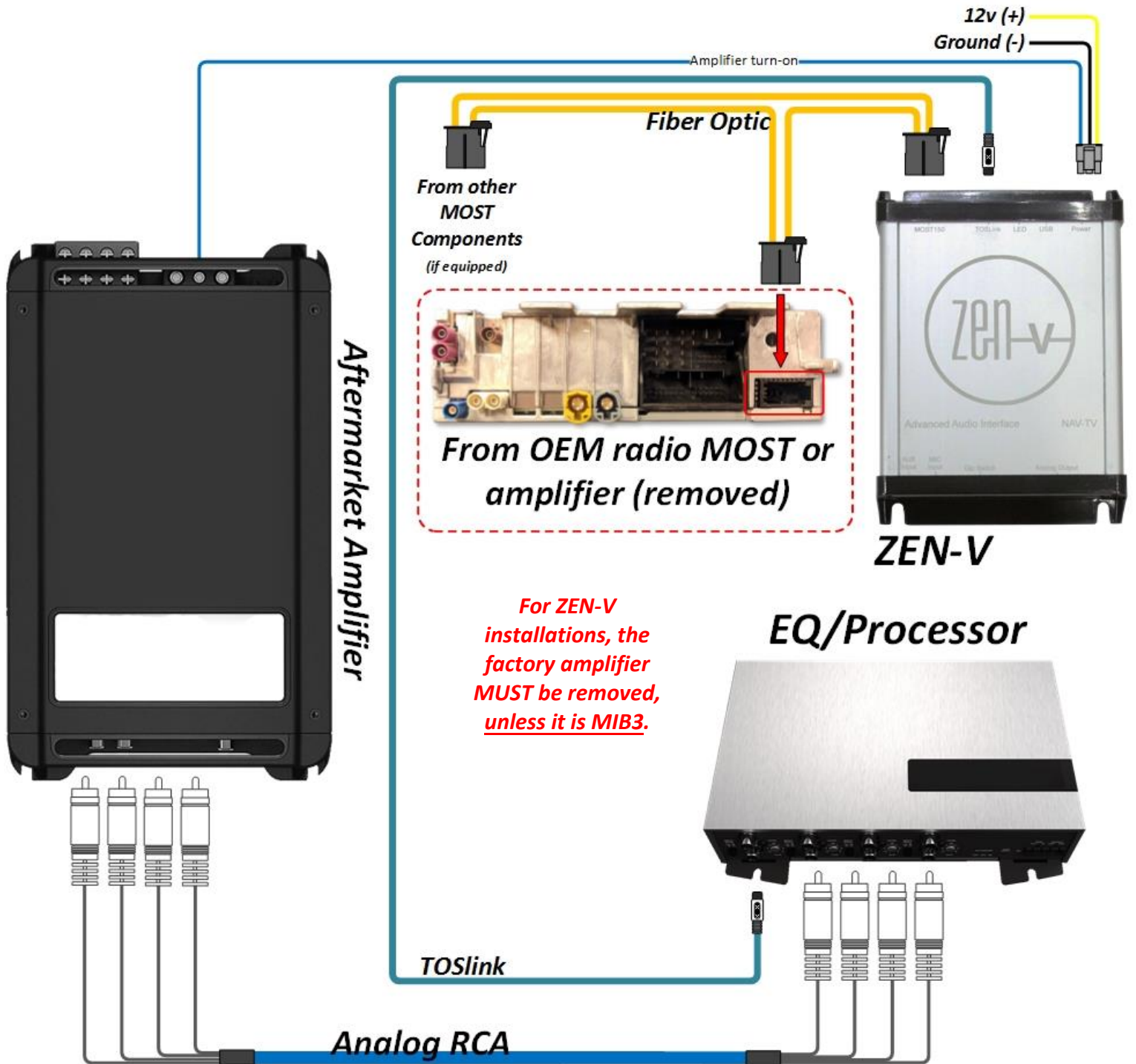


LED Status	Indication
<i>Solid Red</i>	MOST Active
<i>Violet</i>	MOST traffic commands
<i>Blinking Red</i>	<i>Peaking</i> (maximum digital signal level achieved)
<i>Blinking Blue</i>	PC Link with app (future use)

ZEN-V System Layout (analog)



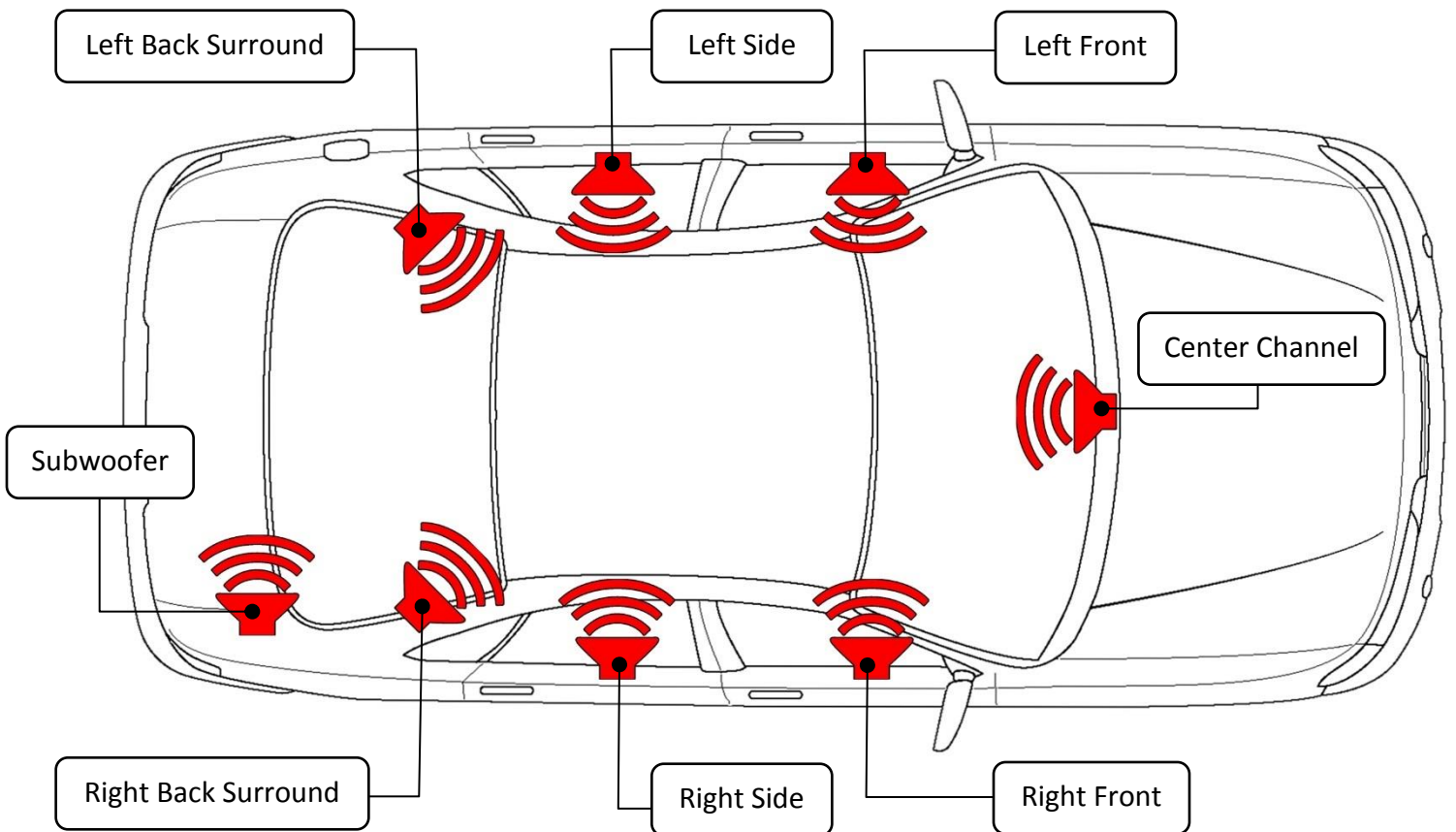
ZEN-V System Layout (digital TOSLink)



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.



Controls & Audio options info (AUDI: MIB2.5)

TREBLE Control: Retained

BASS Control: Retained



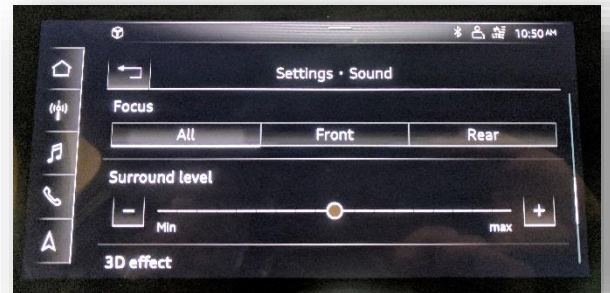
BALANCE Control: Retained

FADER Control: Retained (Analog only)



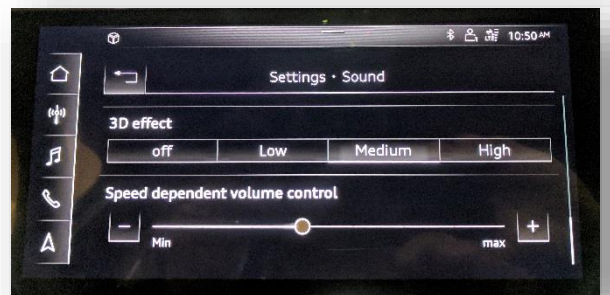
FOCUS Control: Retained

Surround Level Control: NOT Retained



3D Effect: NOT Retained

Speed dependent volume control: NOT Retained



ZEN-V Technical Specifications

<i>Hardware & Software</i>	
Current HW version:	--1r0--
Current SW version:	ZEN-V-1.6.26-3-19-19
Compatible SW (update) OS:	Windows 7 (64 bit), 8, 10
<i>INPUT</i>	
Digital Input	MOST 150 Fiber Optic
<i>OUTPUT</i>	
Digital Outputs:	TOSLink
Digital Outputs supported:	24bit/48kHz
Frequency Response (digital):	18Hz – 24kHz
Analog Outputs:	12 channels (RCA)
Output Voltage <i>Peak</i> :	6v
Output Voltage <i>RMS</i> :	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
<i>Power Supply</i>	
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
<i>Other</i>	
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**.
- **VW installs:** if the midranges are overwhelming, sound stage is narrow and there is equalization difference between front and rear channels, set the following bytes in long coding of MIB (using VAG-COM): 4,5,6,7 set to '00'. For more information on this, contact NAV-TV.

MIB3 Programming

1. Start the vehicle and allow the MMI to fully boot and verify audio is playing.
2. Insert the MIB3 programmer into the vehicle's OBD port and wait approximately 30 second to 1 minute.
3. The LED on the Programmer should illuminate and the the radio will turn off, and restart.
4. Once the radio begins the restart procedure, remove the Programmer from the OBD port.
5. After the radio restarts, if the Zen is not currently connected, there will be no audio.



NAV-TV

INTERFACING THE FUTURE

