NAV-TV KIT997 sound processor with OBD Programmer User Manual

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NAV-TV KIT997 sound processor with OBD Programmer

WARNING: Do not connect any RCA cables to the ZEN-V interface or additional processors prior to properly

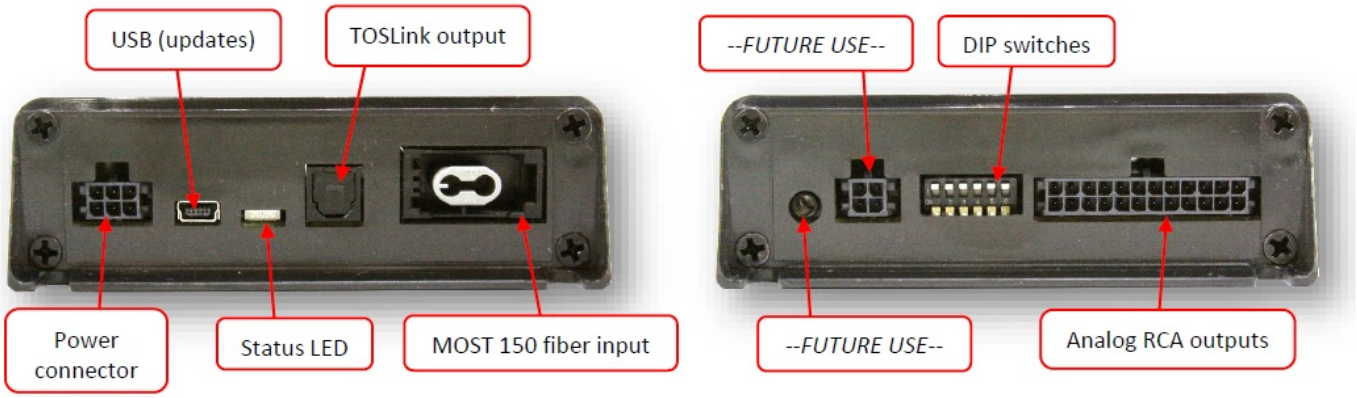
grounding aftermarket amplifier(s)!

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-V overview



Year(s)	Make	Model
2015+	AUDI	Any model with *confirmed 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. Ifthis 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 theprovided power harness
3. Before connecting power to the ZEN-V, adjust dip-switch settings for the desired options:
4. 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.
5. 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.

If using analog RCAs for signal to the amplifier, connect according to the reference chart below.

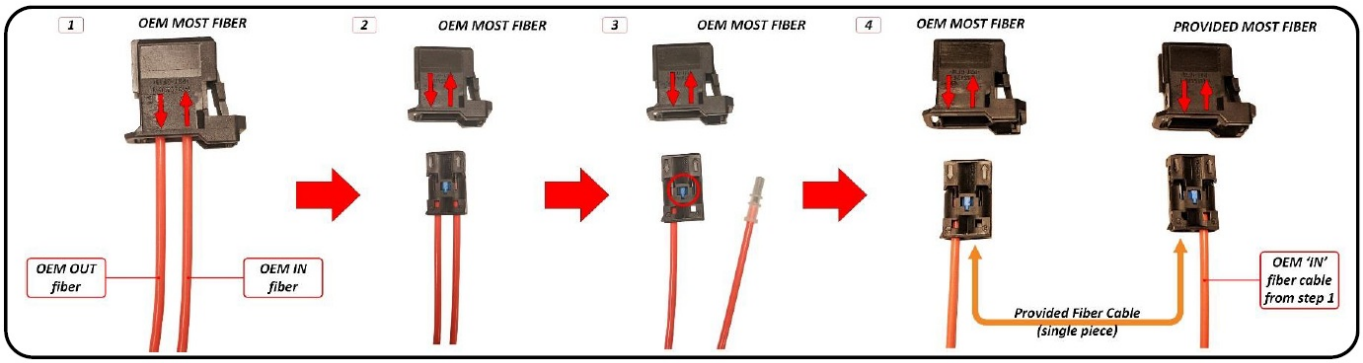
WARNING: Do not connect RCA cables to this interface until all amplifiers/external processors areproperly grounded. Failure to do this may cause damage to the interface and VOID the warranty!

ZEN-V General Installation Notes

This interface can be installed in vehicles with or without an amplifier & with or without MOST fiberoptic presently installed.

1. Vehicles with fiber amplifier: the amplifier must be removed (unless it is MIB3.) Connect the OEMfiber previously connected to the amp, directly into the ZEN-V.
2. Vehicles without OEM amplifier or MOST fiber: Use the supplied fiber optic extension andconnect from the fiber port behind the radio/MMI to the MOST fiber port on the ZEN-V. NOTE: If thevehicle does not possess an OEM amplifier, you must program the system for external amplifierfor 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.
3. Vehicles with MIB3 or without an amplifier but still equipped with fiber: Disconnect the fiber fromthe radio, disassemble the fiber coupler and route the provided MOST extension into the factoryMOST 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 noteabove).



Tuning tips

1. Before beginning tuning process (especially with external EQ/Processors), set Bass & Treble onthe head unit

for each source to flat (0).

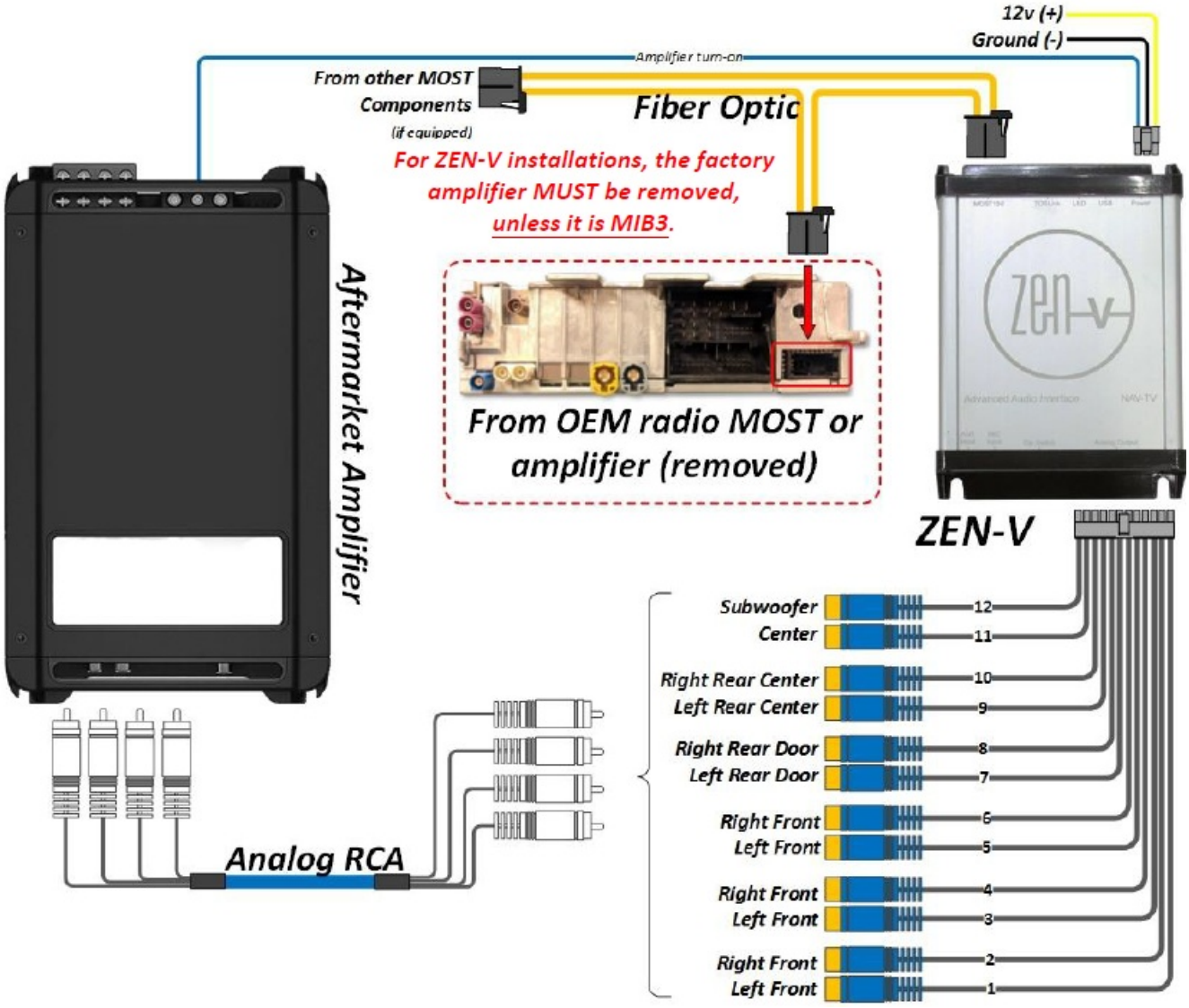
2. Begin with amplifier/EQ gains all the way down.
3. With dynamic music playing, adjust the radio volume to maximum.
4. Adjust the amplifier/EQ gains to desired maximum level.

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 forNAV 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)

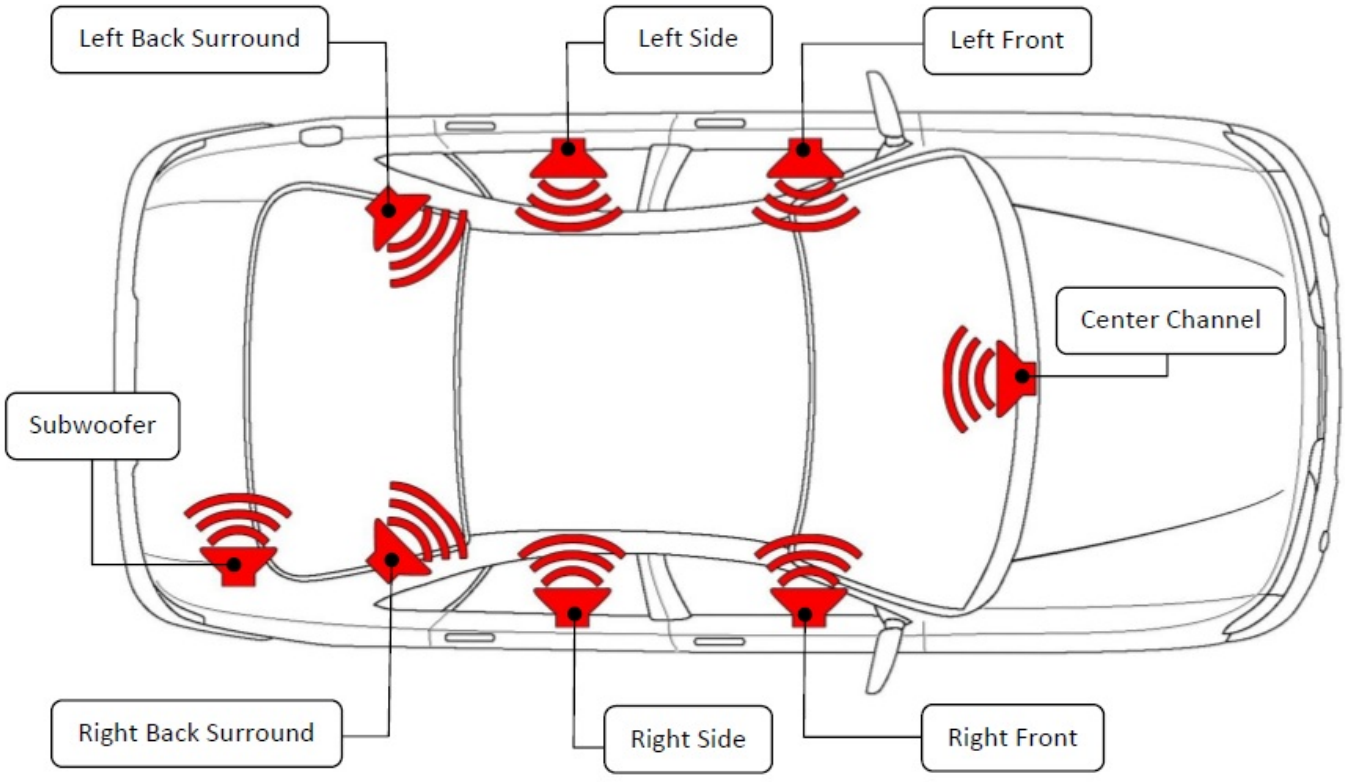
ZEN-V System Layout (analog)



ZEN-V System Layout (digital TOSLink)

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 soundcontrol menu is added.Subwoofer, Bass and Treble arenow individually controllable fromthe radio screen, direct to theZEN-V.

Controls & Audio options info

- 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

Hardware & Software	
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
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 a 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 then to the amplifier(s) and verify the problem still exists before calling technical support.
- VW installs: if the midranges are overwhelming, the sound stage is narrow and there is an 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 seconds to 1 minute.
3. The LED on the Programmer should illuminate and 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.

Documents / Resources

	NAV-TV KIT997 sound processor with OBD Programmer [pdf] User Manual KIT997 sound processor with OBD Programmer, sound processor with OBD Programmer, OBD Programmer