

# NAV-TV

INTERFACING THE FUTURE

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Ford A<sup>2</sup>B<sup>®</sup> to 12-channel Analog & Digital sound processor

**NTV-KIT873**

**A<sup>2</sup>B<sup>®</sup>** Automotive Audio Bus



A<sup>2</sup>B<sup>®</sup> is a registered trademark of Analog Devices Inc.

**WARNING: Do not connect any RCA cables to the ZEN-A2B interface or additional processors prior to properly grounding aftermarket amplifier(s)!**

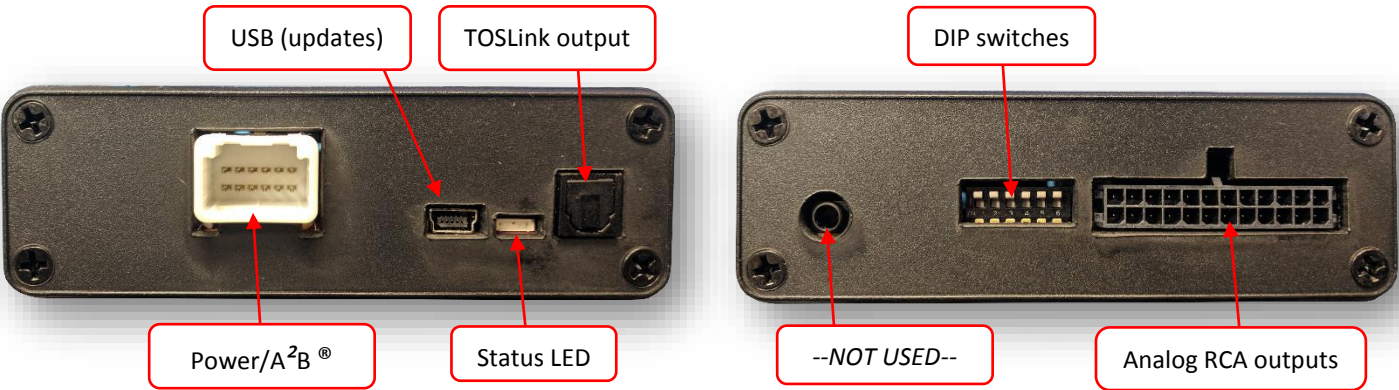
Overview

The ZEN-A2B processor seamlessly converts 2018+ Ford factory A<sup>2</sup>B<sup>®</sup> (Automotive Audio Bus) to 12-channel analog RCA and TOSLink output. Adding aftermarket amplifiers to the OE B&O or Revel amplified SYNC3 system has never been so simple and seamless. This kit integrates with the OEM A<sup>2</sup>B<sup>®</sup> 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: 2018 vehicles not equipped with a factory B&O or Revel amplified system are not equipped with A<sup>2</sup>B<sup>®</sup> bus and do not require this interface.*

Kit Content



ZEN-A2B overview



ZEN-A2B Compatibility SYNC3)

*NOTE: All vehicles require SYNC3, this interface only applies to vehicles equipped with A<sup>2</sup>B (B&O or Revel Amplifiers)*

Year(s)	Make	Model	NOTE:
2017+	Ford	F150, Escape, Raptor	With B&O
2018+	Ford	Expedition	With B&O

ZEN-A2B Installation

- For ZEN-A2B installations, the factory amplifier must be removed and the ZEN-A2B can be installed into its place. If this vehicle is not amplified from factory then this interface is not needed.
- After locating the factory amplifier, disconnect it entirely as it will no longer be in use. Connect the following wires to the vehicle (wires can be found at the amplifier connectors):

Pin #	Description	Color	Connect to	Amplifier PIN #
4	CAN LO	Violet	Amp (gray connector)	11 (white/green)
5	CAN HI	Violet/White	Amp (gray connector)	1 (green/blue)
6	Ground (-)	Black	Amp (black connector)	1 (black/violet)
7	A <sup>2</sup> B (pos)	Green	--From USB connector--	--N/A--
8	A <sup>2</sup> B (neg)	White	--From USB connector--	--N/A--
11	Remote Output	Blue	Aftermarket Amp remote	--N/A--
12	Constant 12v (+)	Yellow	Amp (black connector)	4 (brown/red)



**Wire Side  
(HAR318)**

- Connect the **blue** wire to the remote input on the amplifier\*.

*\*If installing more than one amplifier/DSP, a relay must be used for reliable turn-on (ZEN output: 500mA max).*

*\*Remote wire note: the ZEN-A2B (green LED) will turn on after the car is unlocked, but the blue remote wire will not output until the key and radio are ON.*



- Adjust dip-switch settings for the desired options:

	Time Alignment	Attenuation	TOSLink Chime routing	Loudness	Global Chime routing**	
Position	DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6
<b>UP</b> (off)	<i>Front Row</i>	Full Scale output (0 dB)	TOSLink front channel only; fade control active	Loudness OFF	OEM chime function. Front = Front doors, Rear = Rear doors	<i>OFF</i>
<b>DOWN</b> (on)	<i>Driver Focused</i>	-7 dB output	TOSLink fader free (OEM fader disabled) *	Loudness ON	Front chimes: RCA 5 & 6 Rear chimes: RCA 9 & 10	<i>OFF</i>

\*Front and rear chimes mixed into TOSLink output

\*\*When DIP 5 is ON, factory chimes are **stripped** from all other channels, including TOSLink.

- 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

- 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.**

ZEN-A2B General Installation Notes

• **Tuning tips:**

1. Before beginning tuning process (especially with external EQ/Processors), set Bass & Treble on the 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.*

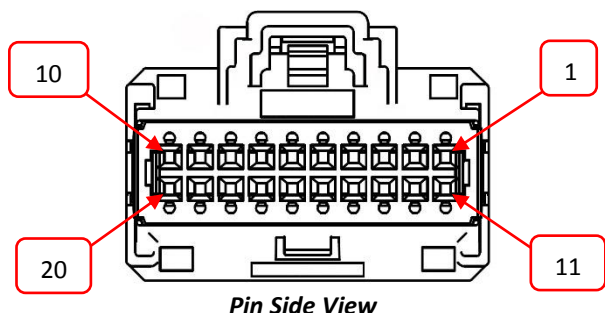
Multi-Color LED Status Indication



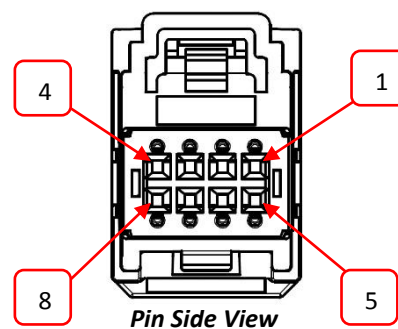
LED Status	Indication
<i>Solid Red</i>	A <sup>2</sup> B Active
<i>Solid Green</i>	CAN Active
<i>Green + Red (yellow)</i>	A <sup>2</sup> B + CAN Active
<i>Blue/Violet/White</i>	Amp command
<i>Blinking Red</i>	<i>Clipping</i> (beyond maximum digital signal level achieved)
<i>Blinking Blue</i>	PC Link with app (future use)

OEM Ford B&O amplifier connector pin out

Pin #	Description	Color
1	CAN HI	Green/Blue
4	Center Channel (-)	Gray/Yellow
5	Subwoofer COIL 1 (-)	Gray
6	Right Front Door (-)	White/Orange
7	Left Front Door (-)	White/Brown
8	Right Rear Door (-)	Brown/Blue
9	Subwoofer COIL 2 (-)	Yellow
10	Left Rear Door (-)	Brown/Yellow
11	CAN LO	White/Green
14	Center Channel (+)	Green
15	Subwoofer COIL 1 (+)	Green/Violet
16	Right Front Door (+)	White/Violet
17	Left Front Door (+)	White
18	Right Rear Door (+)	Brown/White
19	Subwoofer COIL 2 (+)	Violet/Orange
20	Left Rear Door (+)	White/Green



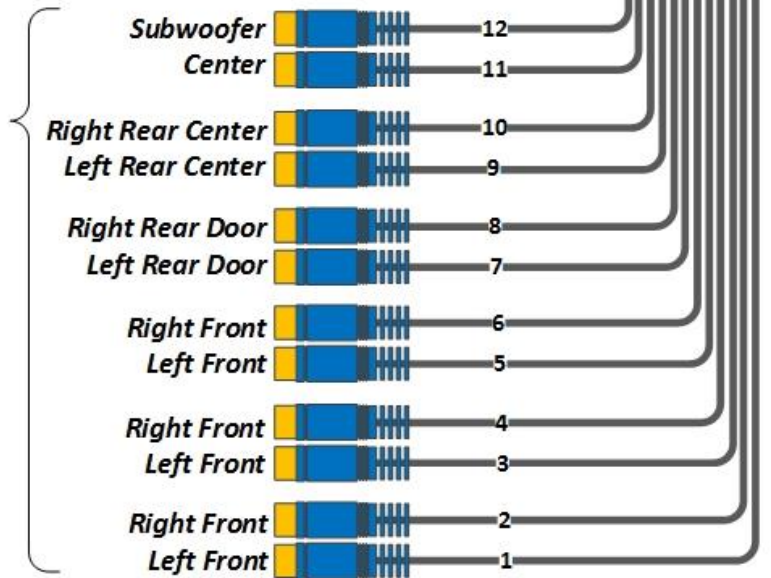
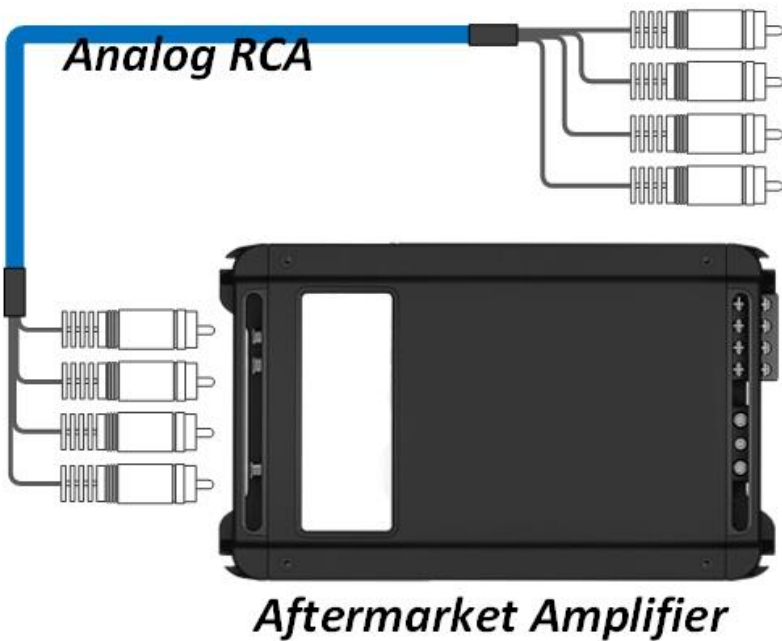
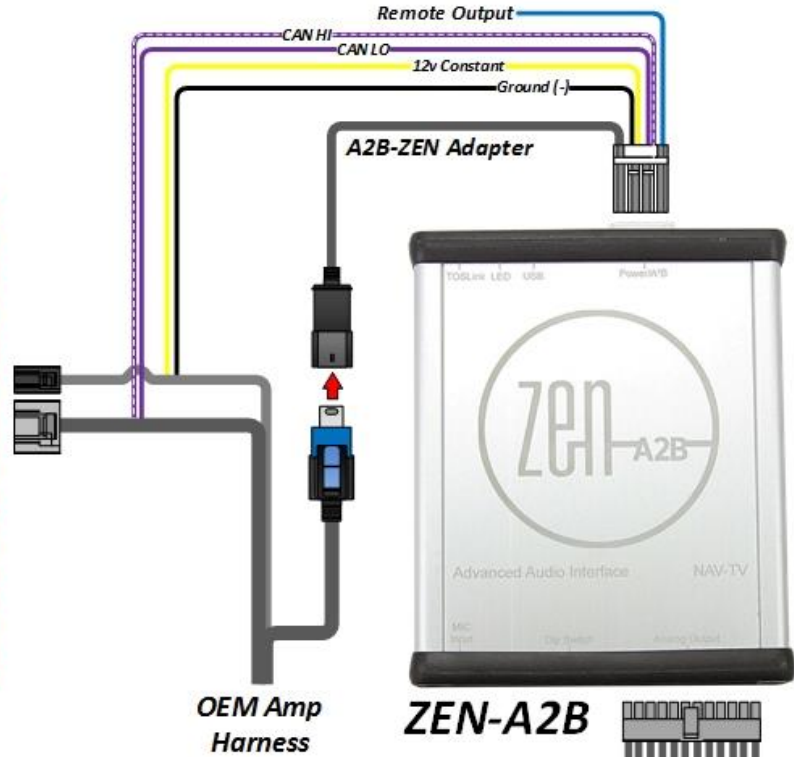
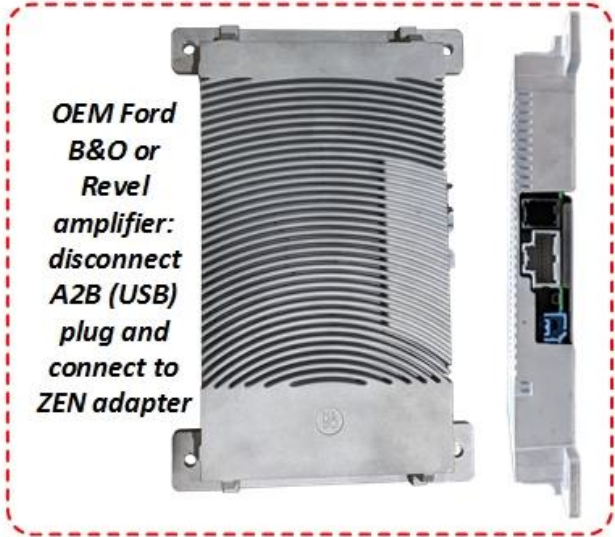
Pin #	Description	Color
1	Ground (-)	Black/Violet
2	--Not Used--	--
3	--Not Used--	Brown
4	Constant 12v (+)	Brown/Red
5	Ground (-)	Black/Violet
6	--Not Used--	--
7	--Not Used--	--
8	Constant 12v (+)	Brown/Red





ZEN-A2B System Layout (analog)

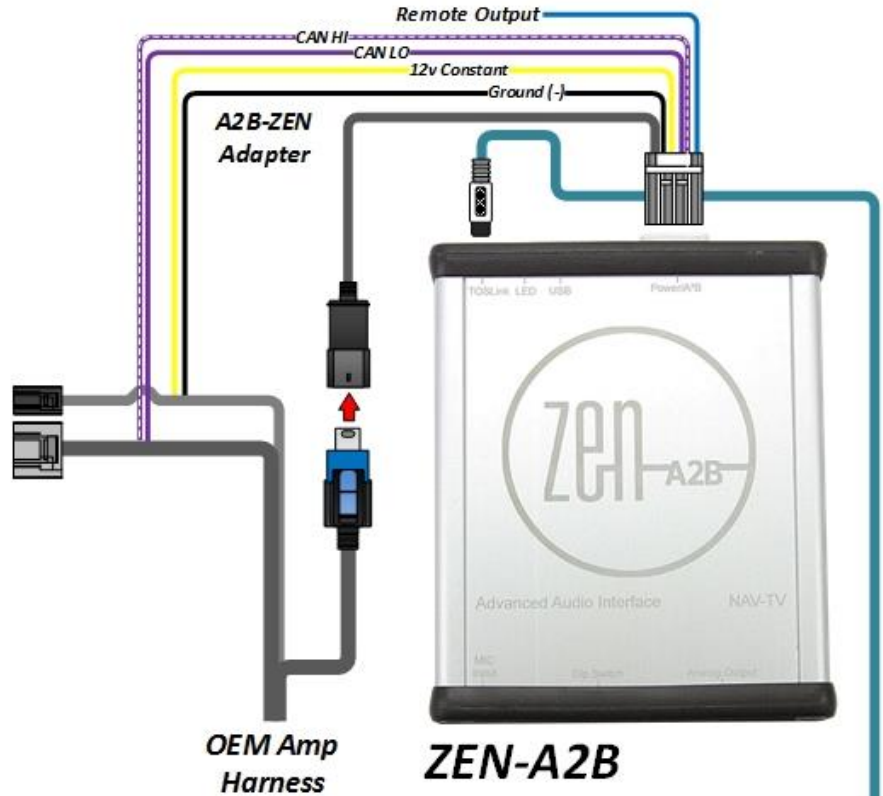
**For ZEN-A2B installations, the factory amplifier MUST be removed or disconnected.**



ZEN-A2B System Layout (digital TOSLink)

**For ZEN-A2B installations,  
the factory amplifier MUST  
be removed or disconnected.**

**OEM Ford  
B&O or  
Revel  
amplifier:  
disconnect  
A2B (USB)  
plug and  
connect to  
ZEN adapter**



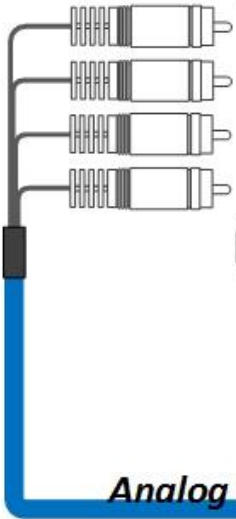
**EQ/Processor**



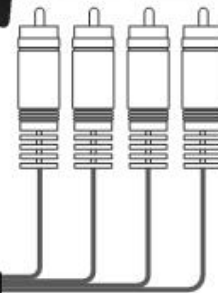
**Aftermarket Amplifier**



**Analog RCA**



**TOSlink**



ZEN-A2B Technical Specifications

<i>Hardware &amp; Software</i>	
Current HW version:	--1r0--
Current SW version:	ZEN-A2B-2.0.12-6-26-18.enc
Compatible SW (update) OS:	Windows 7 (64 bit), 8, 10
<i>INPUT</i>	
Digital Input	A <sup>2</sup> B Twisted Pair
<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):	114dB
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

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