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# Diagnostic Communication and Networks

K-Line

CAN Gateway

LIN Bus

Fiber Optic (MOST)

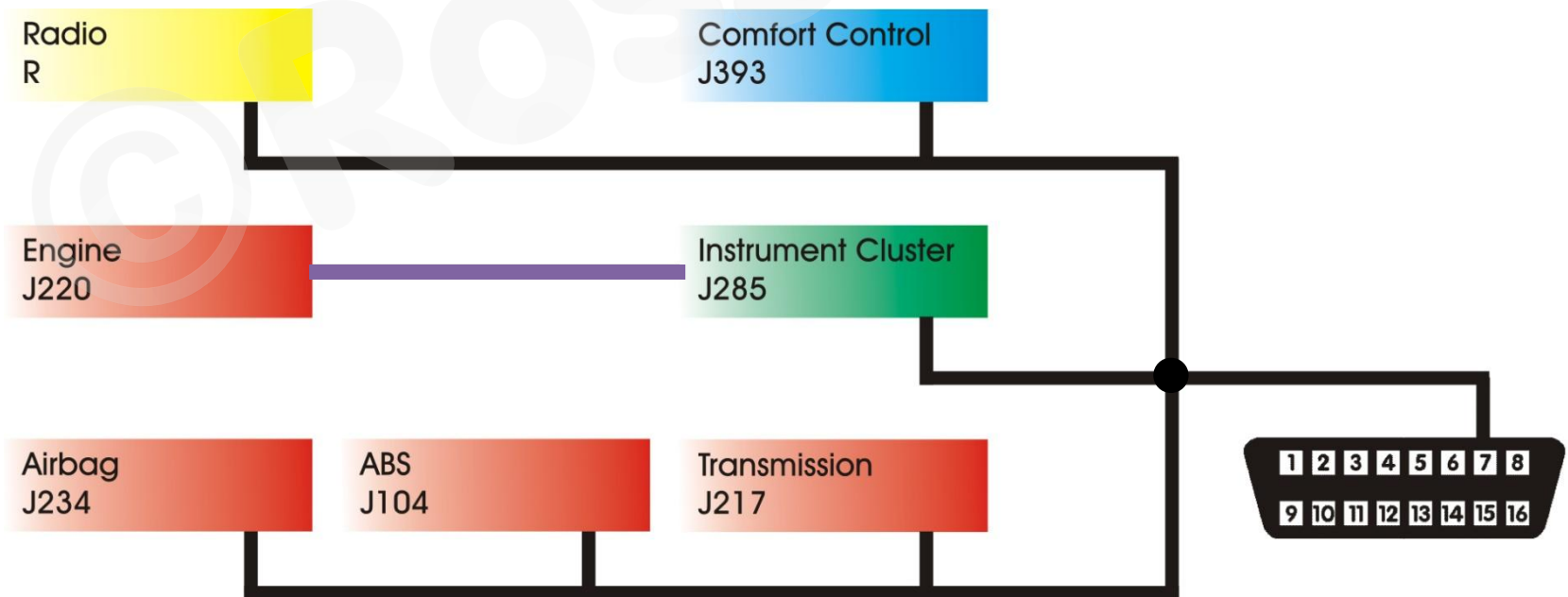


- 1 - Terminal 15 (power with ignition switched on.)
- 4 - Ground (Terminal 31)
- 5 - Signal Ground
- 6 - CAN High
- 7 - K - Line
- 14 - CAN Low
- 15 - K2 Line
- 16 - +12V (Terminal 30)



## K - Line

- Single Wire Data bus – kind of slow
- Phased out from 2004 to 2011 (N.A. market)
- Aftermarket radios or a failed module can lock the K-Line





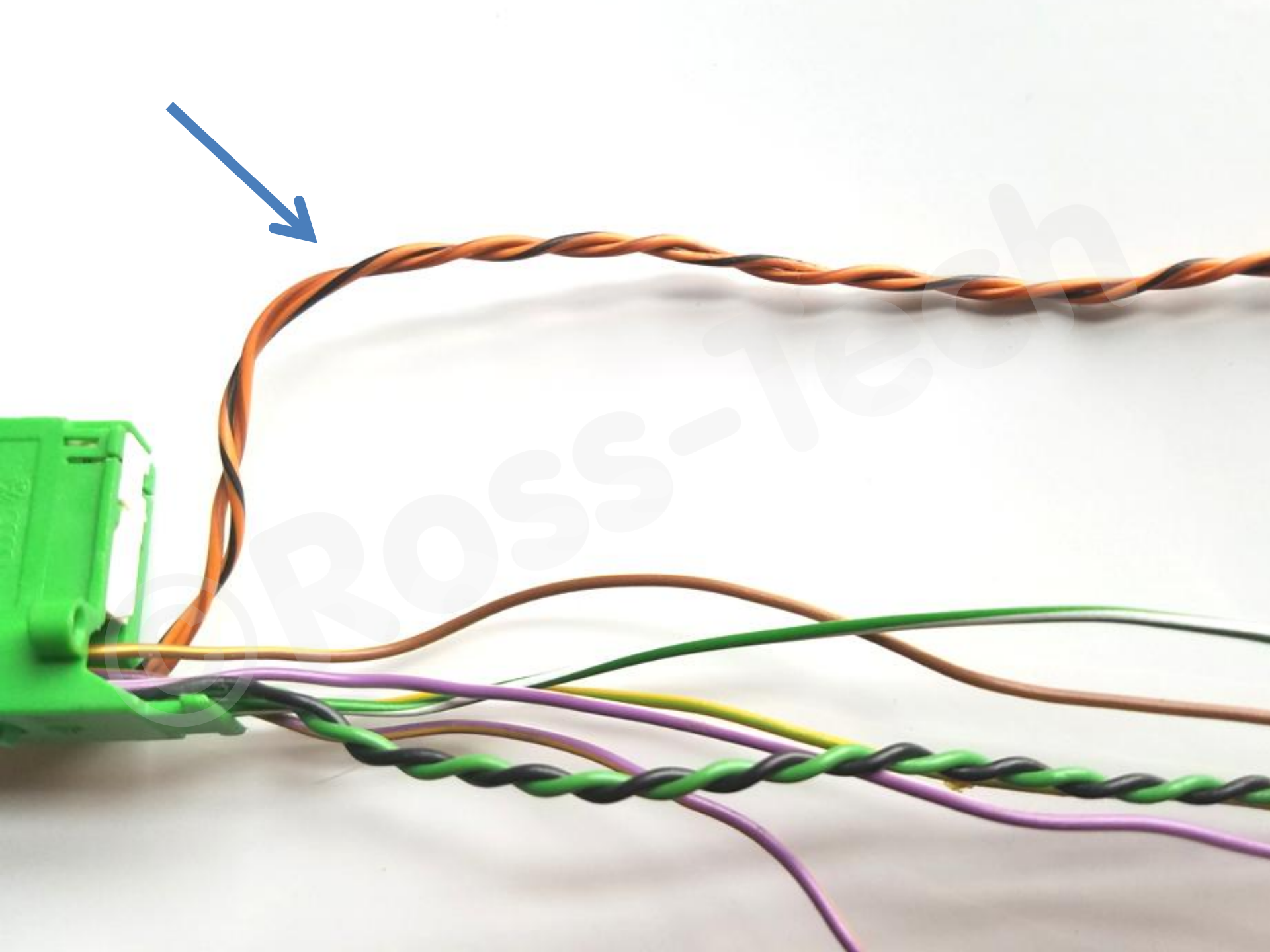
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# Diagnostic C.A.N Bus

Controller Area Network

- 2 wire Data Bus (twisted pair, hi-speed)
- CAN High and CAN Low
- Phased in from 2004 to 2011 (N.A. market)
- Diagnostic CAN
- Powertrain CAN
- Convenience (Comfort) CAN
- Infotainment CAN
- Instrument Cluster CAN





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# L.I.N Bus

## Local Interconnect Network

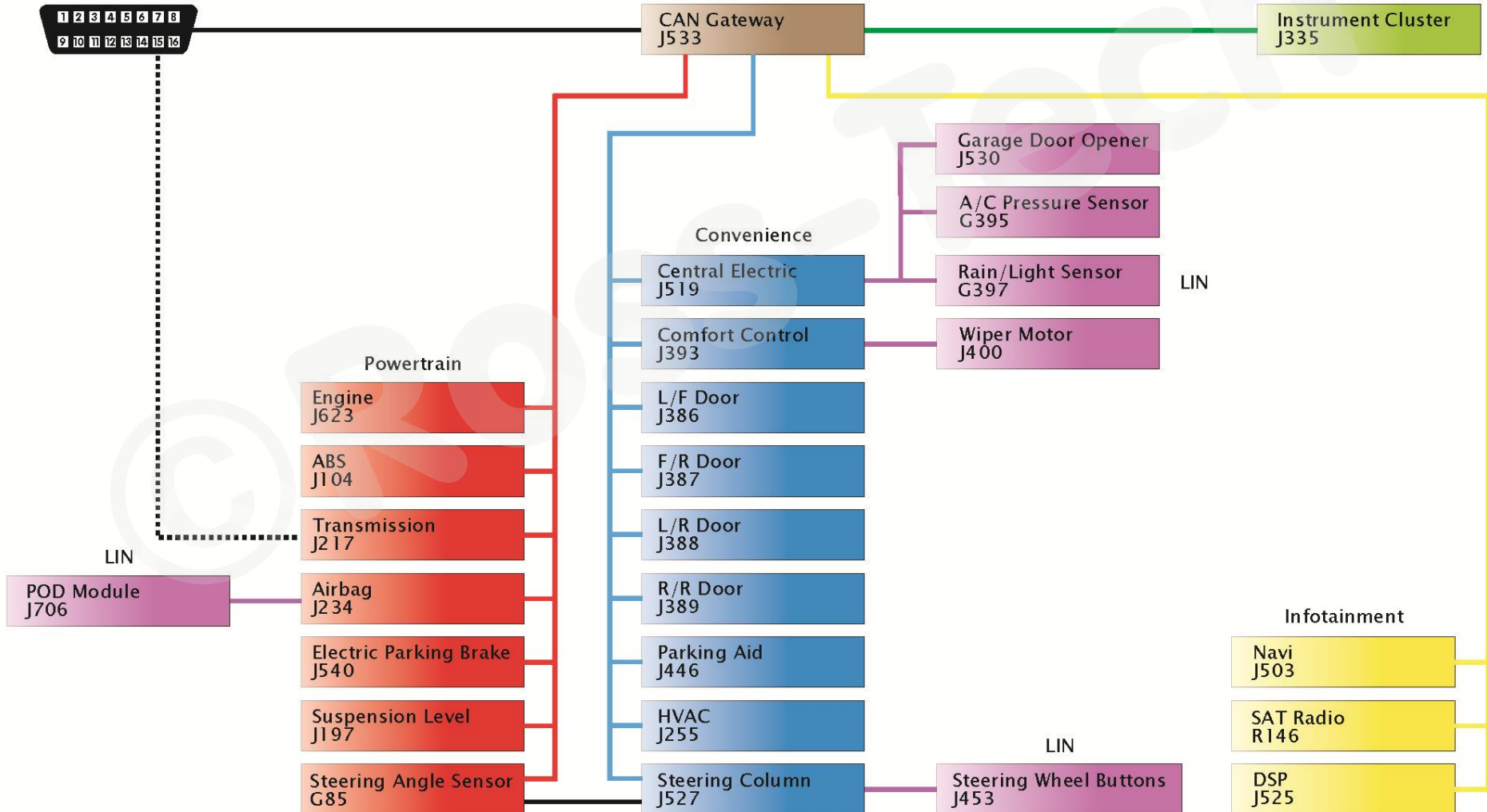
- Single wire data bus
- Lower cost and slower than CAN Bus
- Master module and slave module
- Up to 16 slave modules per master module
- Simple systems, wiper motor, button controls, ect





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# M.O.S.T

**M**edia **O**riented **S**ystems **T**ransport

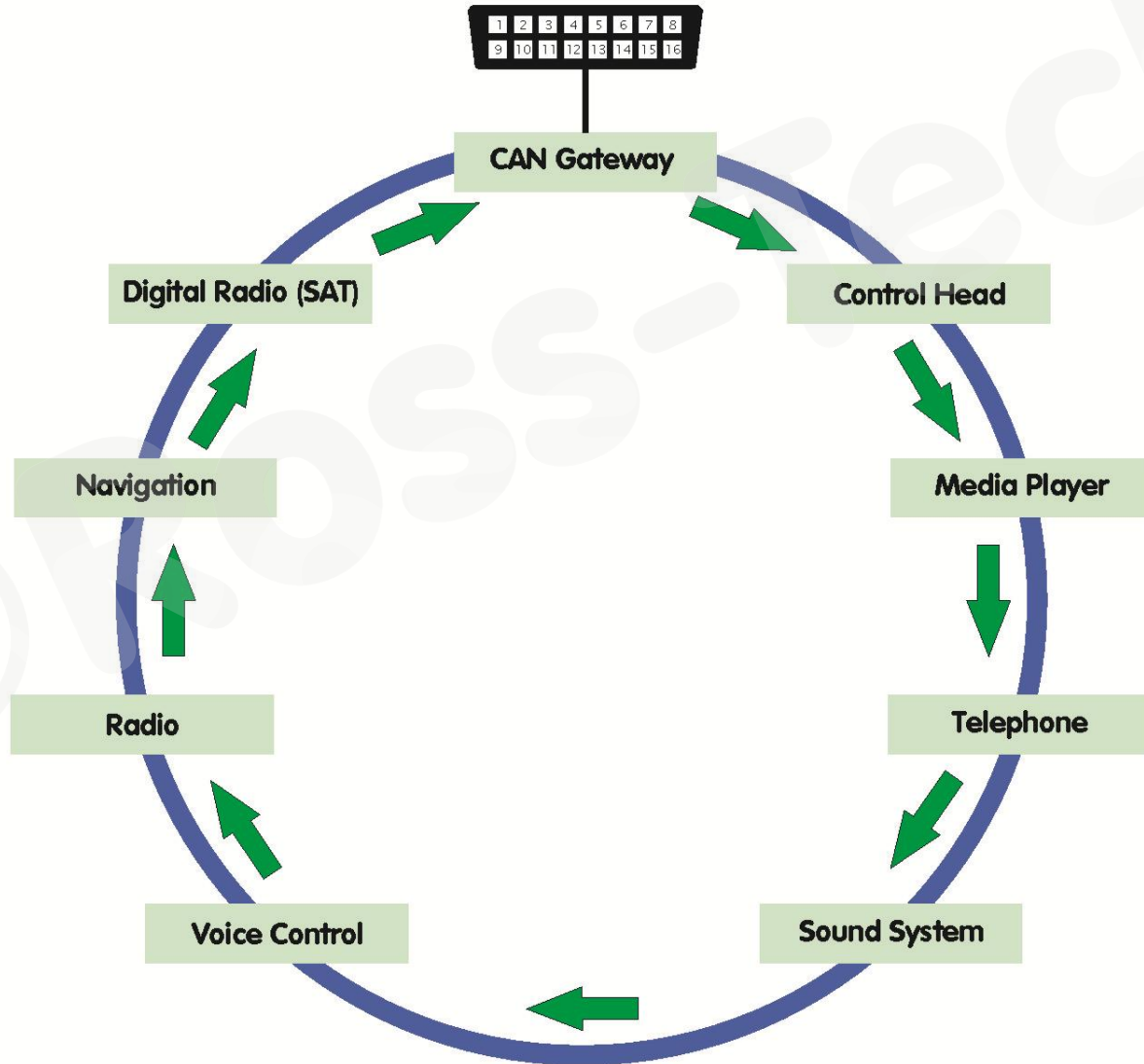
- Fiber optic system
- Highest speed network
- Data travels in 1 direction over fiber optic, forming a ring
- VCDS will show order of Optic Bus
- Modules on MOST also are connected to Diagnostic CAN Gateway





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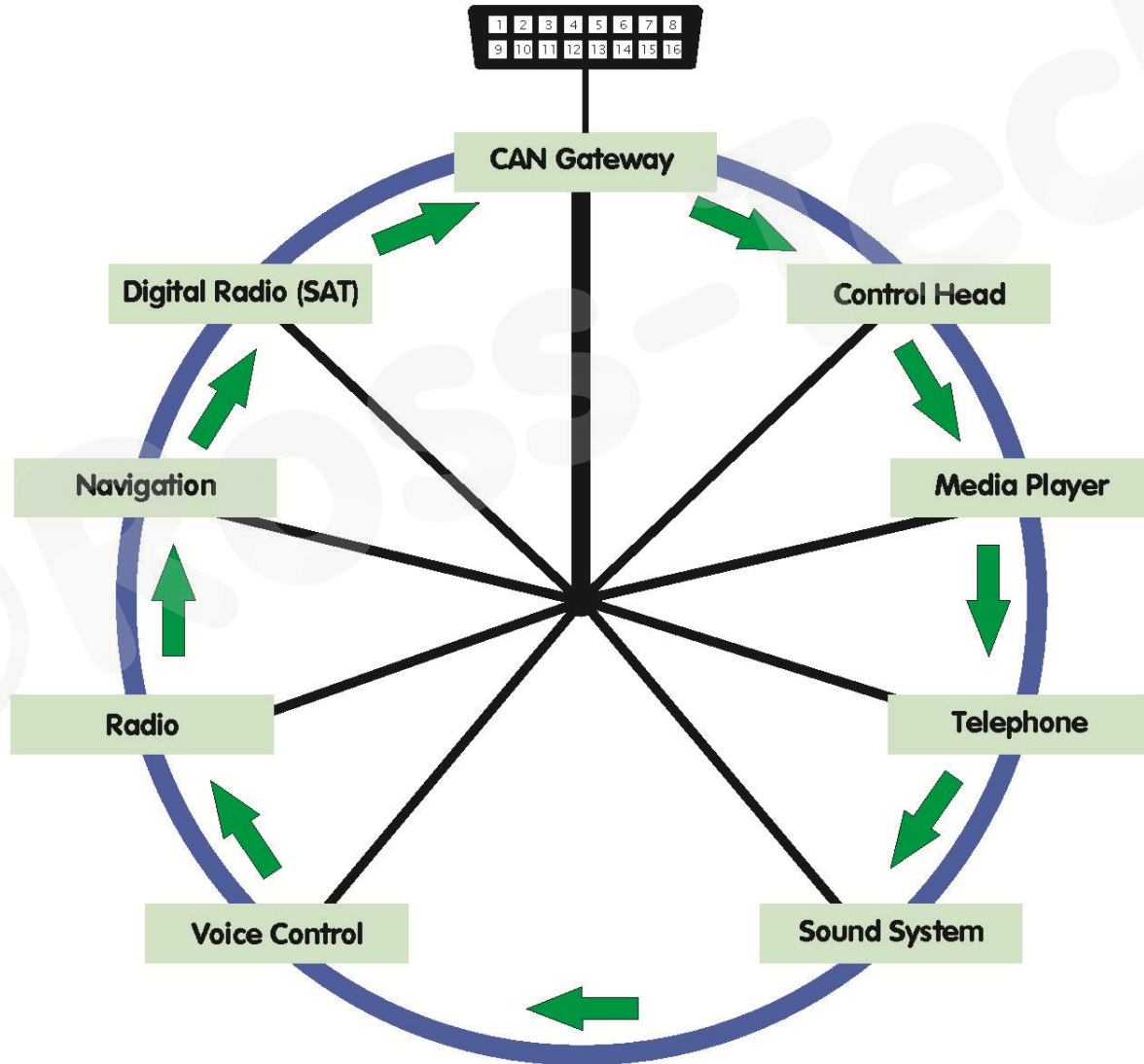
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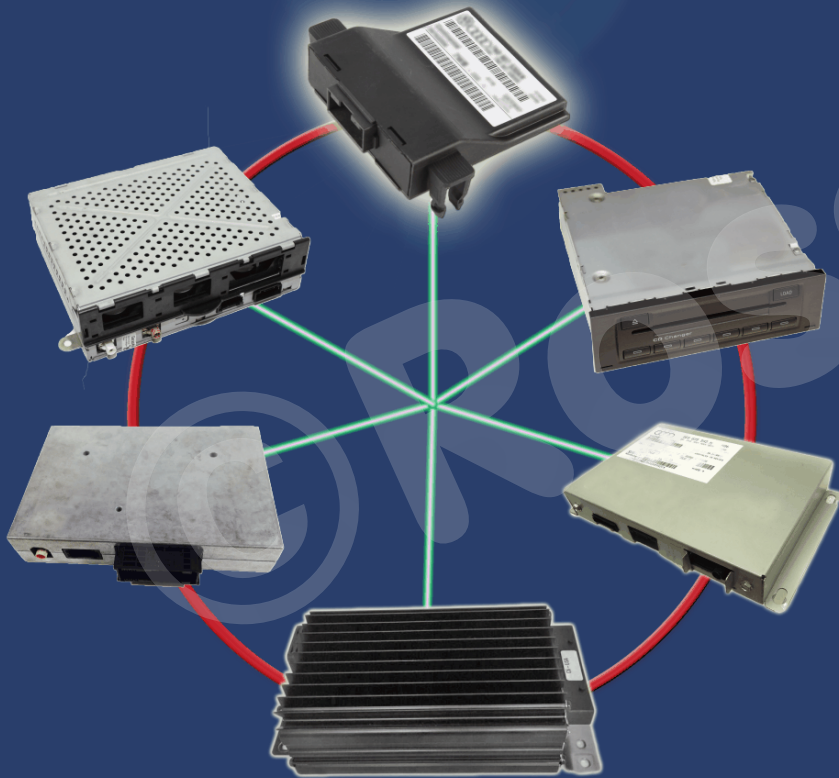
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VCDS: Main Screen Image Copyright (C) Ross-Tech, LLC

## VCDS

16302 Codes Loaded

VCDS: Optical Bus Diagnostic Image Copyright (C) Ross-Tech, LLC

Controller	Electrical	Optical
19-CAN Gateway	OK	OK
07-Control Head(High/D3)	OK	OK
0E-Media Player 1	OK	OK
77-Telephone	OK	OK
47-Sound System	OK	OK
56-Radio	OK	OK

Diagnostic Type  
 Standard  
 3dB Attenuation

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## Example 1

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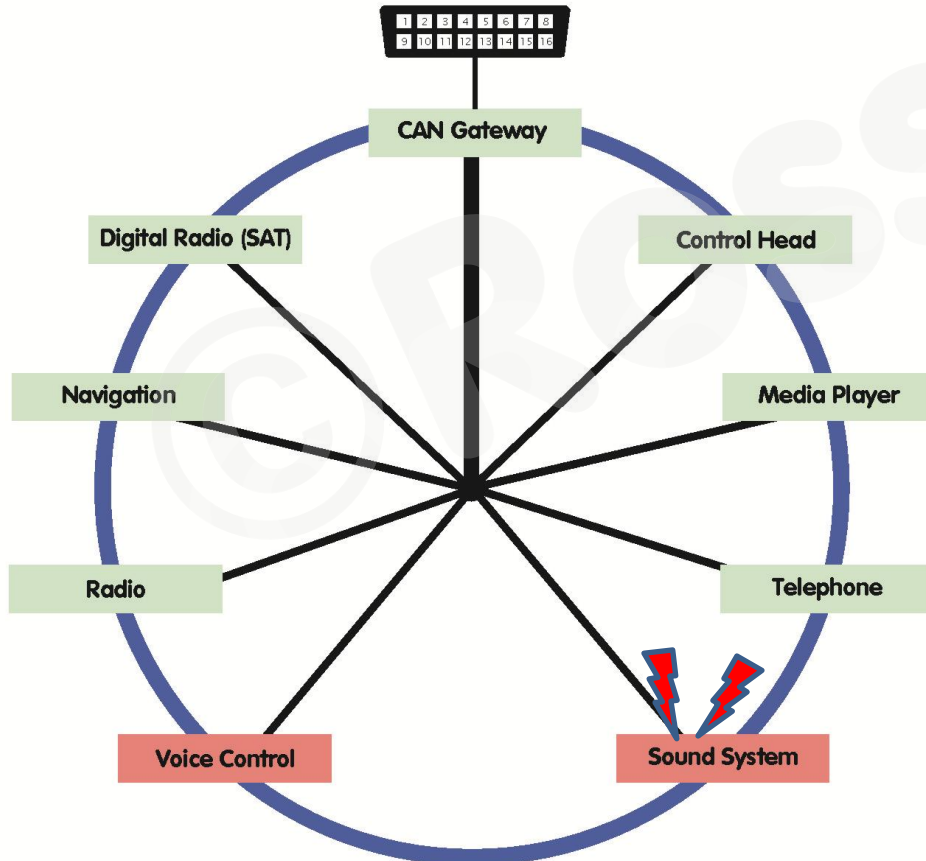
**VCDS** 16302 Codes Loaded

VCDS: Optical Bus Diagnostic Image Copyright (C) Ross-Tech, LLC

Controller	Electrical	Optical
19-CAN Gateway	OK	OK
07-Control Head(High/D3)	OK	OK
0E-Media Player 1	OK	OK
77-Telephone	OK	OK
47-Sound System	ERROR	ERROR
67-Voice Control	OK	ERROR
56-Radio	OK	OK
37-Navigation	OK	OK
0F-Digital Radio(SAT)	OK	OK

Diagnostic Type  
 Standard  
 3dB Attenuation

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## Example 1

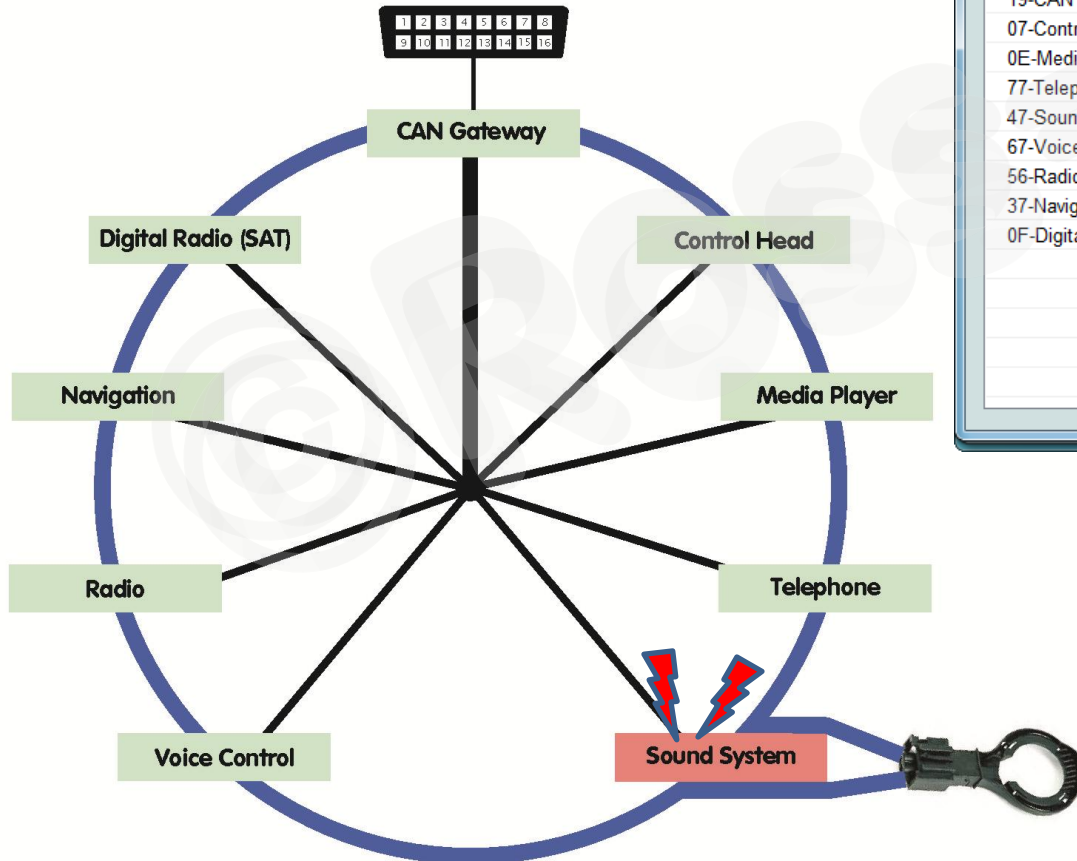
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Diagnostic Type  
 Standard  
 3dB Attenuation

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Part number: 4E0 973 802

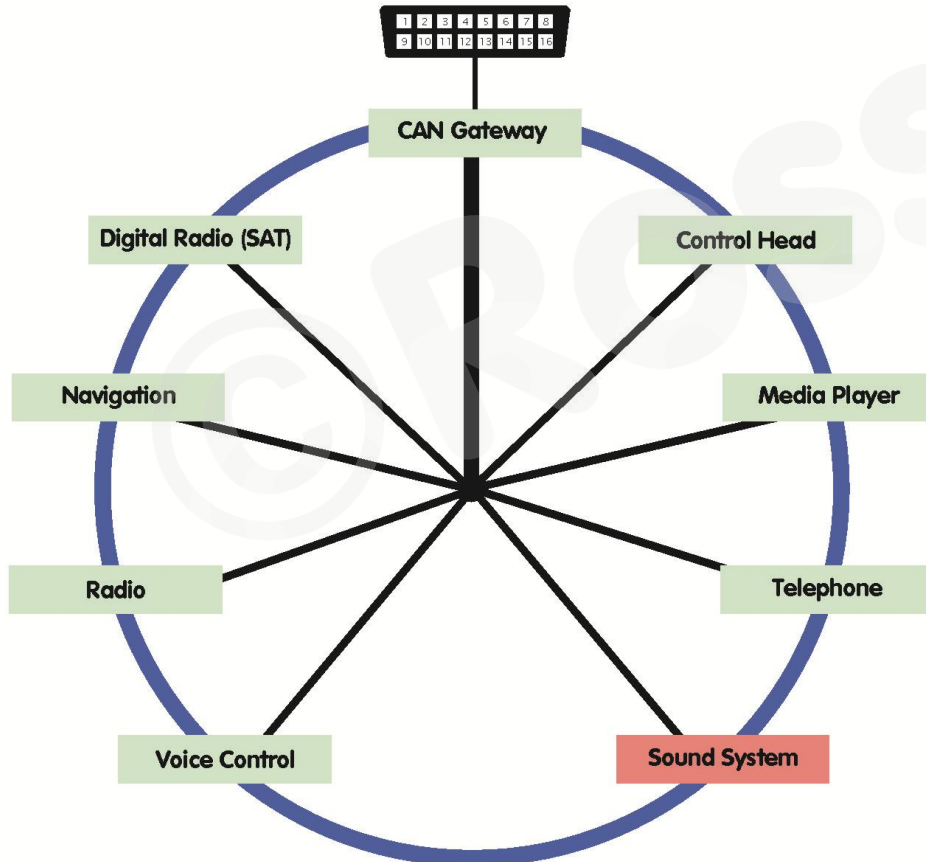




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## Example 2



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### VCDS

VCDS: Optical Bus Diagnostic Image Copyright (C) Ross-Tech, LLC

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19-CAN Gateway	OK	OK
07-Control Head(High/D3)	OK	OK
0E-Media Player 1	OK	OK
77-Telephone	OK	OK
47-Sound System	OK	ERROR
67-Voice Control	OK	OK
56-Radio	OK	OK
37-Navigation	OK	OK
0F-Digital Radio(SAT)	OK	OK

Diagnostic Type  
 Standard  
 3dB Attenuation

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## Example 2

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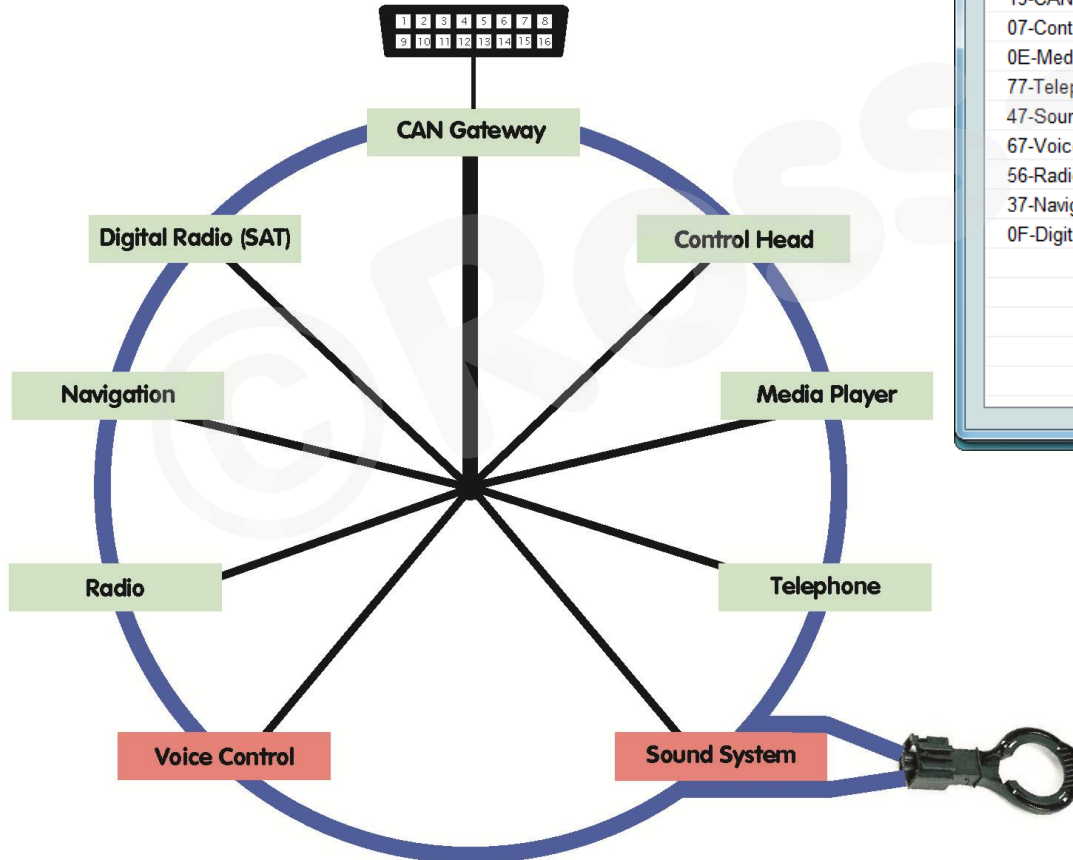
16302 Codes Loaded

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77-Telephone	OK	OK
47-Sound System	OK	ERROR
67-Voice Control	OK	ERROR
56-Radio	OK	OK
37-Navigation	OK	OK
0F-Digital Radio(SAT)	OK	OK

Diagnostic Type  
 Standard  
 3dB Attenuation

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## Example 2

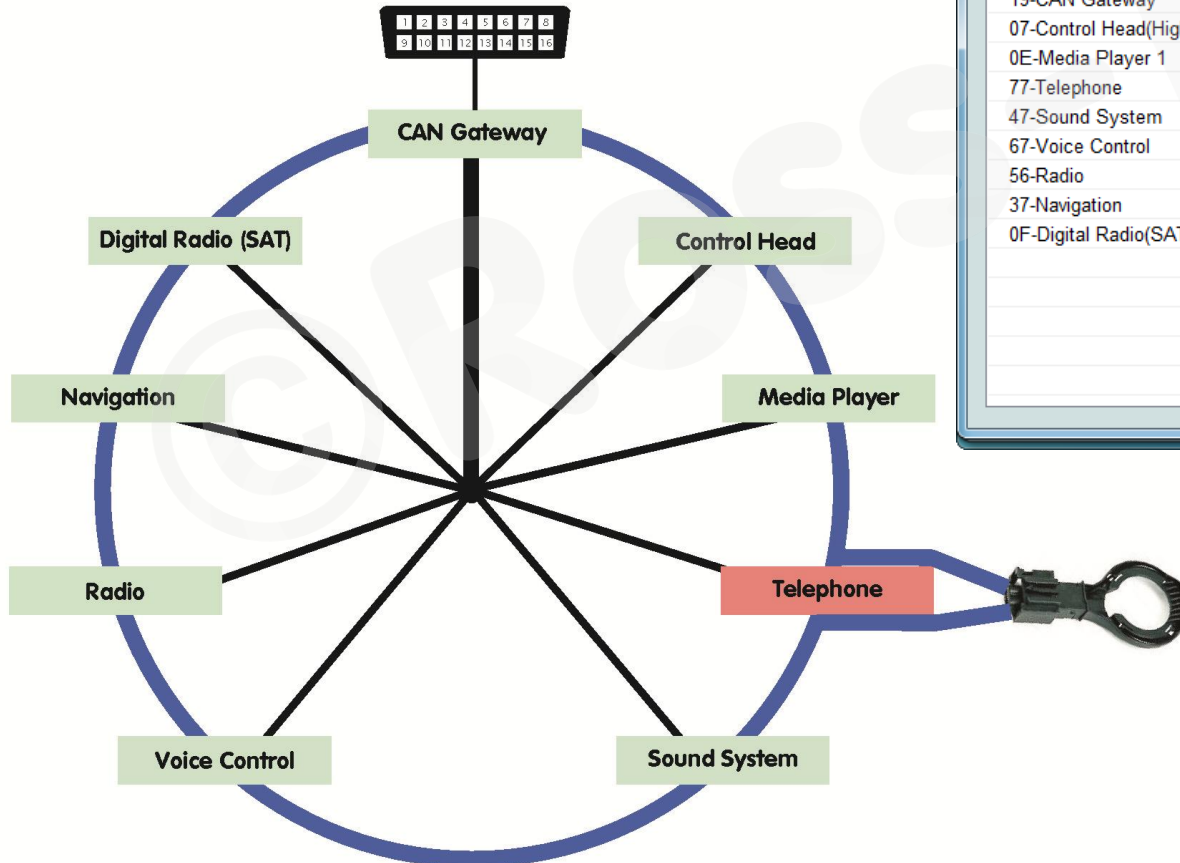
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