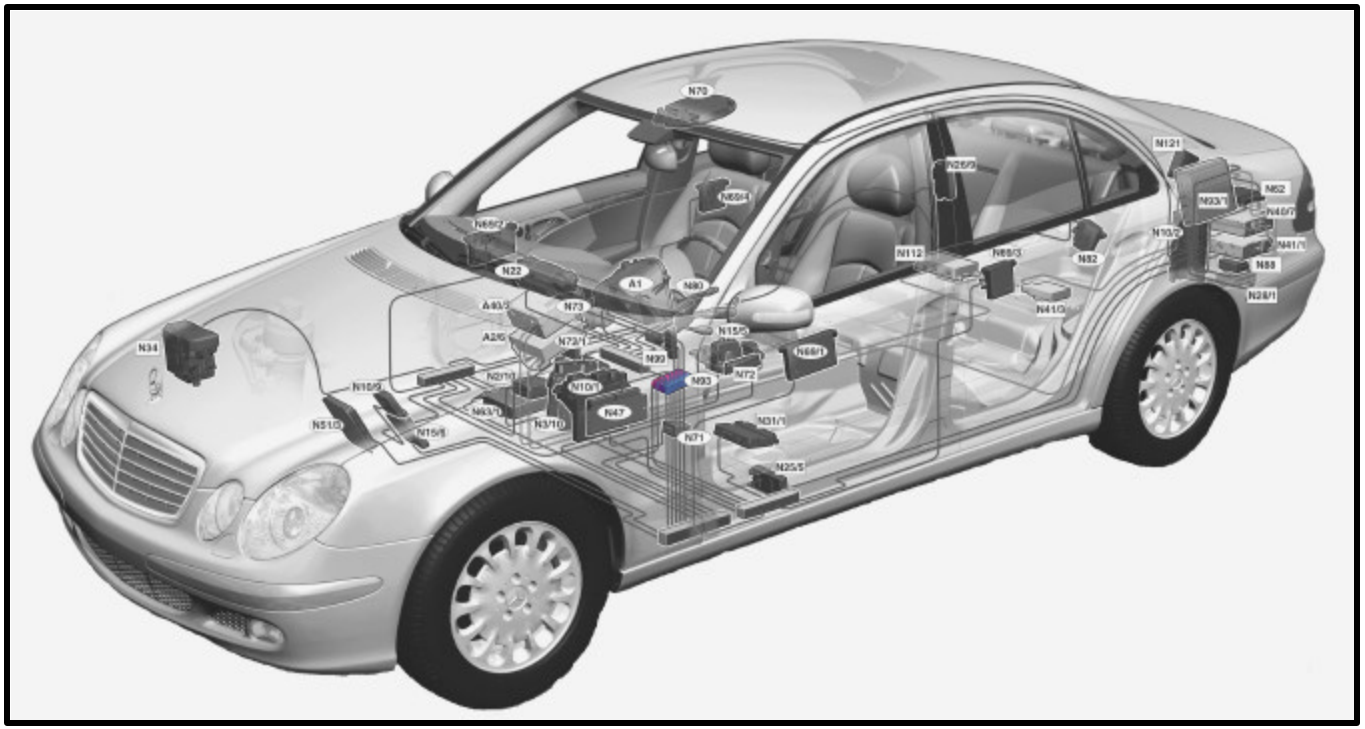
Mercedes-Benz

# MOST System



These technical training materials are current as of the date noted on the materials, and may be revised or updated without notice. Always check for revised or updated information.

To help avoid personal injury to you or others, and to avoid damage to the vehicle on which you are working, you must always refer to the latest Mercedes-Benz Technical Publication and follow all pertinent instructions when testing, diagnosing or making repair. Illustrations and descriptions in this training reference are based on preliminary information and may not correspond to the final US version vehicles. Refer to the official introduction manual and WIS when available.


*WIS document numbers shown apply to WIS Version USA/CDN at date of writing.*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# What is MOST?

- The MOST acronym is derived from the words:
  "**M**edia **O**riented **S**ystem **T**ransport"

- An evolution of the fiber optic ring and electrical wake-up configuration used in the D2B system

- A communication standard created by DCAG, Becker, and other corporations (unlike D2B that was exclusive to MB)

- One of the vehicle communication networks:
  - connecting the audio system to other vehicle networks

Note: MOST system may also be referred to as NTG 1
(New Telematics Generation 1)

# MOST Introduction

- Introduced from beginning of E Class (W211) production
- Future models will change to or be introduced with MOST

| | | | | |
|---|---|---|---|---|
| MY 2003 | W211 | | | |
| MY 2004 | C215 | W220 | W/V240 ① | |
| MY 2004 (April / May) | W/S/CL203 | | | |
| MY 2005 | R171 ② | C/A209 | W219 ③ | R230 |
| MY 2006 | W164 ④ | X164 ⑤ | W251 ⑥ | |

① Front audio system only
② New SLK
③ CLS
④ New M Class
⑤ New G Class
⑥ Grand Sports Tourer

Note: This information is preliminary and subject to change.
SLR will be introduced with D2B system and no current plans to change to MOST.

# Advantages Over D2B

- Reduced development cost due to communication standard for multiple manufacturers
- Multiple manufacturers able to supply components
- Faster transmission of data, with even higher rates possible *(see chart)*
- More devices possible *(see chart)*
- Reduced possibility of complete failure:
  - additional wake-up method
  - failure mode in MOST components (watchdog function)
- Longer fiber optic cable length possible *(see chart)*

# Comparison: D2B vs. MOST

| Description | D2B | MOST |
|---|---|---|
| Data Transmission rate | Up to 5.65Mbps | Up to 24.8Mbps |
| Maximum number of devices | 6 | 64 ① |
| Minimum fiber bend radius | 25mm | Do not kink |
| Maximum fiber optic length | 33ft w/o in-line connector<br>10ft with 3 in-line connectors | 69ft w/o in-line connector<br>13ft with 3 in-line connectors |
| Bus Master | Radio/COMAND | Audio 20* or Audio Gateway (AGW) |
| Gateway to CAN B & Diagnostic interface | Radio/COMAND | Audio 20* or Audio Gateway (AGW) |
| Wake-up method | Electrical | Electrical *or* optical |
| Berger fiber optic tester | Can be used | **Cannot** be used |
| Passive fiber optic connector for testing purposes | A000 545 **33** 84 | A000 545 **44** 84 |

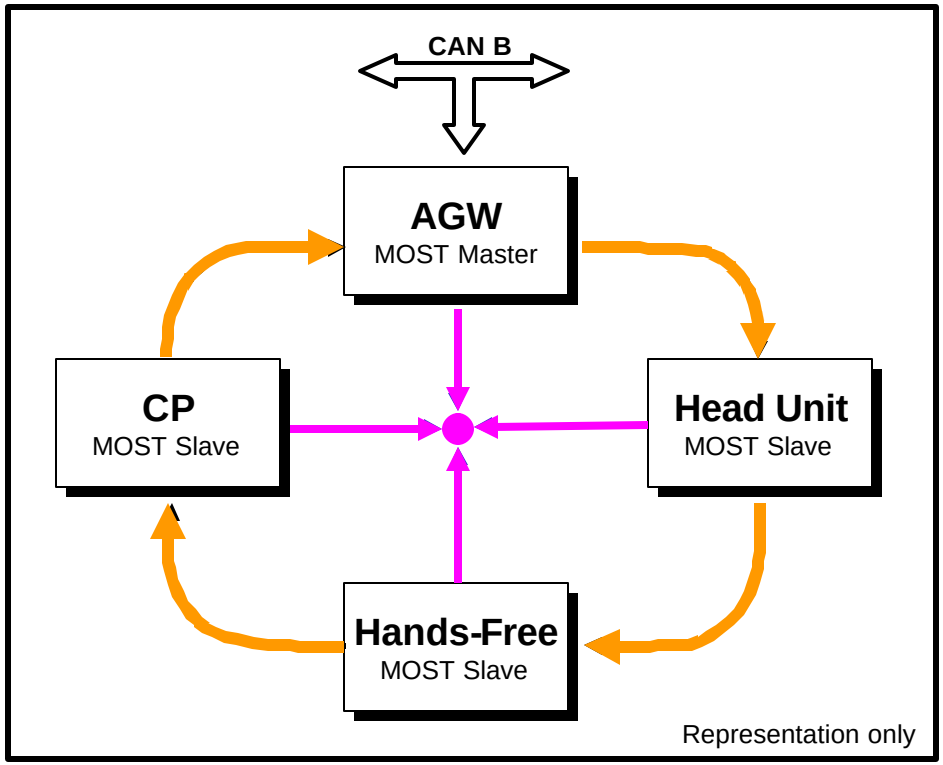
① Currently have capabilities to configure up to 16 locations

* W/S/CL203, R171 with HU entry class Audio 20

# Basic Network Principle

Network generally consists of:

- MOST master
  - AGW or Audio 20 HU
- MOST slave components
  - HU (if AGW fitted)
  - Communications Platform (CP)
  - Hands-Free Module (HFM)
- Optical cables connect components in a single ring
- Components are all connected by an electrical wake-up circuit
- Each component supplies voltage to wake-up circuit




- Additional components can be added to the optical ring:
  - CD changer
  - Navigation
  - Satellite radio
  - etc…

# MOST Component Manufacturers

- Audio Gateway (AGW), (N93/1) - *Harman/Becker*
- Compact Disc Changer (CDC), (A2/6) – *Alpine*
- Head Unit, HU (A2/56) or COMAND - *Harman/Becker* *Siemens* *Alpine*
- Navigation drive / processor (N41/1) - *Harman/Becker*
- Communications Platform (CP), (N112) - *Motorola*
  - Handset Support Electronics (HSE)
  - TELE AID
  - Global Positioning System (location of car for TELE AID)
- Hands Free Module (HFM), (A35/1) - *AKG*

  or

  Voice Control System (VCS), (A35/11) - *Temic/Motorola*
- Satellite Digital Audio Receiver (SDAR), (N87/5) – *Delphi*
- Sound Amplifier (V220 / C215 MY 2004) - *Bose*

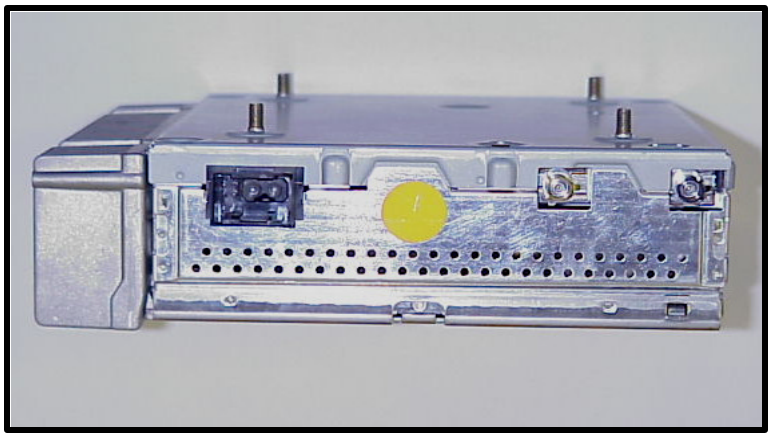
# Bus Master

- Bus master of MOST system:

  - Audio 20 Head unit (HU)
    (MOST entry class)
    or
  - Audio Gateway (AGW)
    (Audio 50, COMAND, MCS II)


Audio 20 HU

- Various versions of AGW are available for use in various models or equipment level in USA:
  - Maybach
  - Audio system without Logic 7
  - Audio system with Logic 7
  - Audio system with separate sound amplifier



AGW

Note: AGW installation location varies with model.

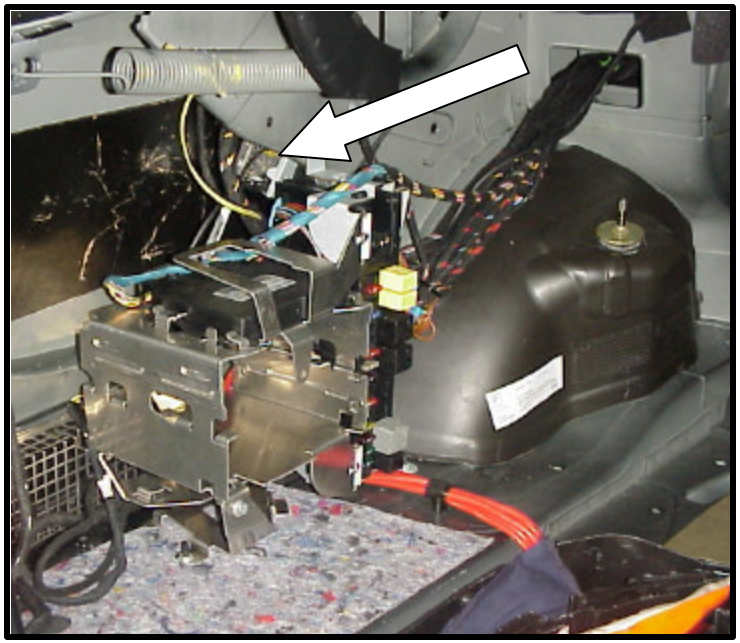
# Bus Master

Bus master is responsible for:

- Storing the ring configuration
- Provides voltage for it’s wake-up line
- Monitors electrical wake-up line for ring start request from slave component
- Issuing an electrical wake-up signal
- Issuing a ‘ring start’ optical message
- Maintaining ‘ring lock’ after ‘ring start’
- Switching off the ring
- Determining & storing fault codes related to itself and ring errors
- Diagnostic gateway for MOST components
- Gateway between MOST components & CAN B
- Performing a diagnostic wake-up upon request from SDS / DAS

# Bus Master

- In addition to being the MOST bus master the AGW (or Audio 20 HU) incorporates:
  - Radio tuner
  - Sound amplifier*
  - Sound adjustment controls*:
    - speed dependant volume
    - DRO (Dynamic Range Optimization)
- AGW can be flashed for future MOST developments or enhancements
- Refer to DTB bulletins for latest enhancement software release
  (as of 02/04 SW 49/03 DTB P-B-82.85/325)



Location: Left side trunk (W211 shown)

* Incorporated in separate sound amplifier if fitted

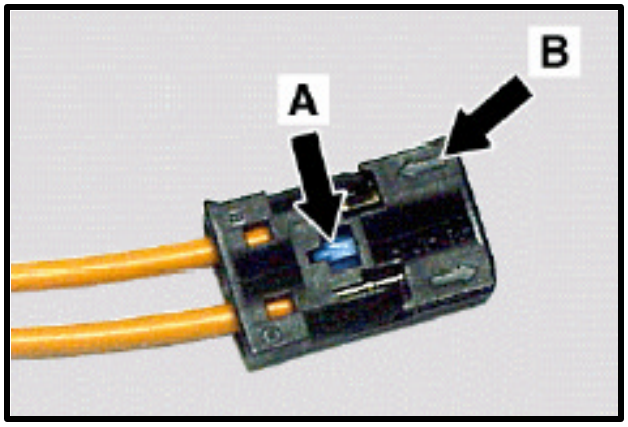
# Bus Slaves

In addition to normal role of the MOST component, the bus slaves are responsible for:

- Providing voltage for it's wake-up line
- Monitoring electrical wake-up line for 'ring start' request
- Issuing an electrical wake-up signal for 'ring start' request
- Monitoring FOT IN for optical 'ring start' message at all times
- Maintaining 'ring lock' after 'ring start'
- Failure mode / Watchdog function
- Determining & storing fault codes related to itself
- Communicate diagnostic information when requested on the MOST network
- Respond to a diagnostic wake-up, upon request from master

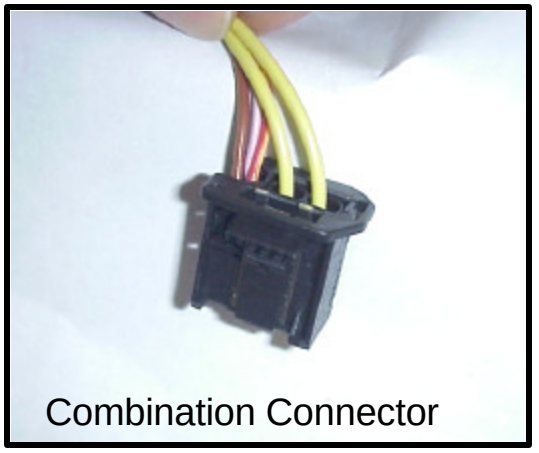
Note: All MOST components have an internal temperature sensor that will shut down the component if it reaches 194°F.

# Optical Cable

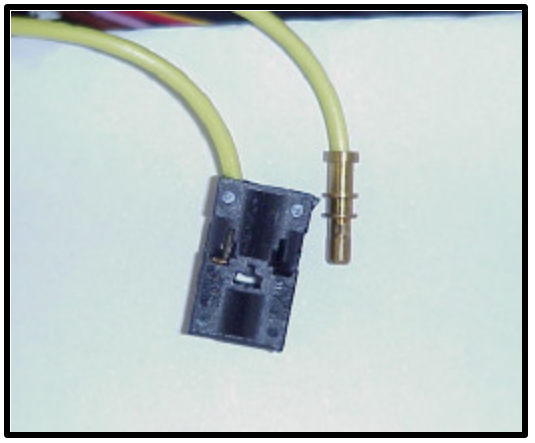



A = Release tab

B = Direction of data flow

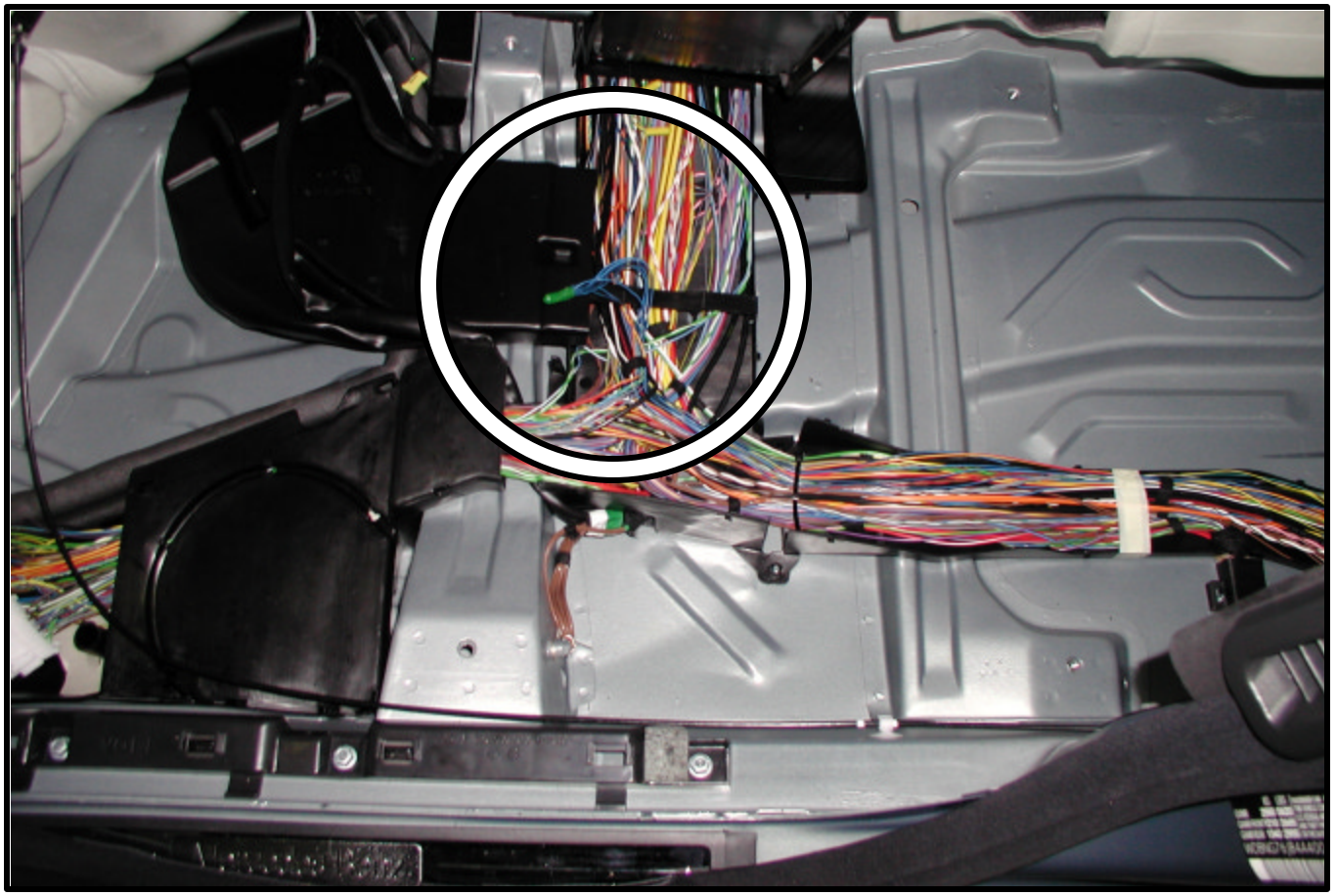

Combination Connector

- Not interchangeable with D2B
- Manufactured with tighter tolerances (more durable than D2B cables)
- May be combined with electrical connector (combination connector)
- Different plastic ferrules from D2B
- Both ends are clear in color
    - light at cable = input to device
    - no light at cable = output from device



# Electrical Wake-Up

- Wake-up lines are connected by a Z splice on C215/V220 (Z35/10)
- Wire colors - Blue / Black



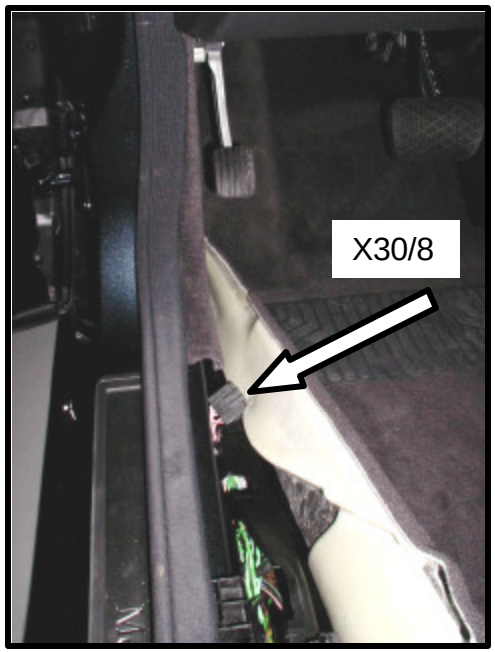
Location: Under driver seat (V220 shown)

# Electrical Wake-Up

- Wake-up lines are connected by X30/8 connector plug on W/S211

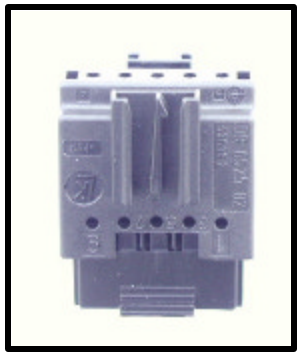
  Part # A003 546 20 40

- Wire color - Pink

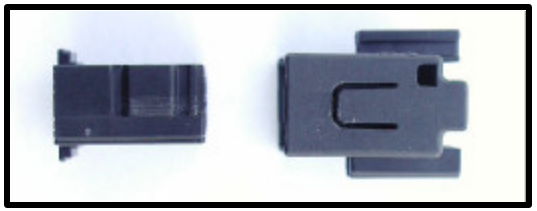



Location: Clipped onto left front sill trough (S/W211)

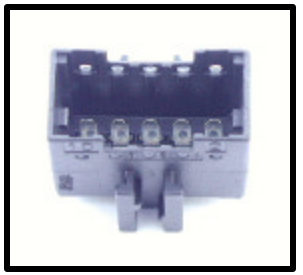
Bridge cover engaged connecting wake-up lines



Bridge cover pulled up disconnecting wake-up lines



Bridge cover removed showing two lock positions



Bridge cover showing connecting bridge

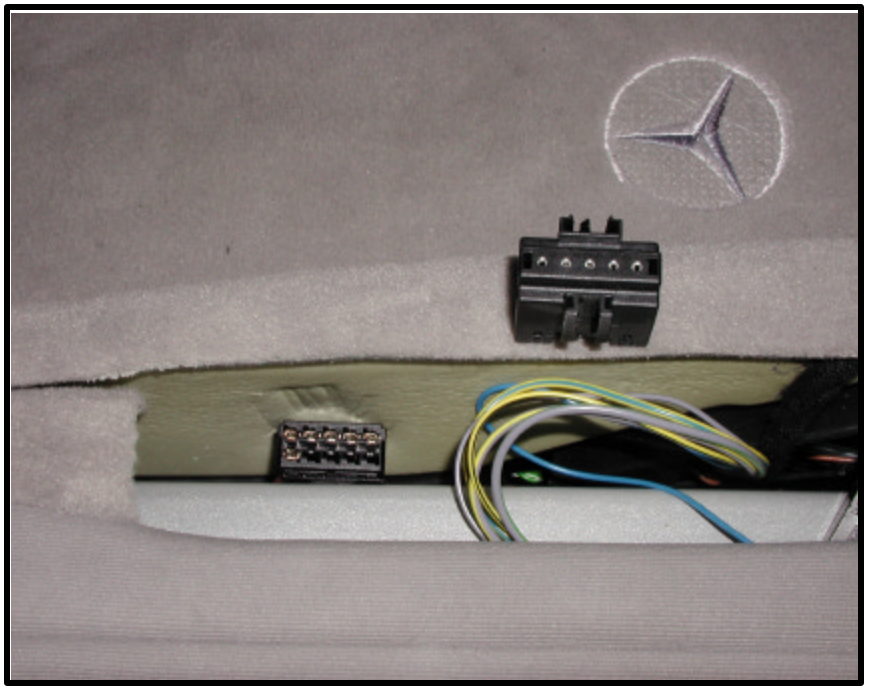
# Wake-Up Connector X30/8

- X30/8 has provisions for up to 10 wake-up lines

- Number of wake-up lines varies with model year and country code:
  - USA MY 03 W211 = 6
  - USA MY 04 W/S211 = 7

- As vehicles are pre-wired for optional equipment, you may find that only some of the wake-up lines have voltage on when checked (with the bridge cover removed)

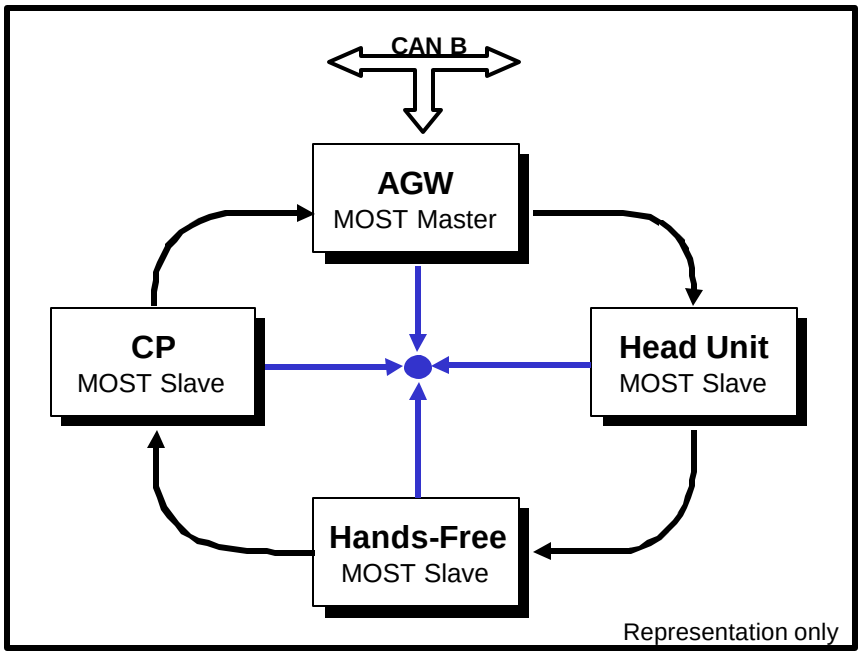
- Voltage measured may be anywhere from battery voltage to ~4.5 volts



Location: Right front sill trough (W211)

# MOST Wake-Up

- Optical bus is awakened when bus master recognizes:
  - CAN B active
  - terminal 15R/15 ON
  - electrical wake-up request from a MOST component




- All MOST components have capability to request a wake-up via electrical wake-up line

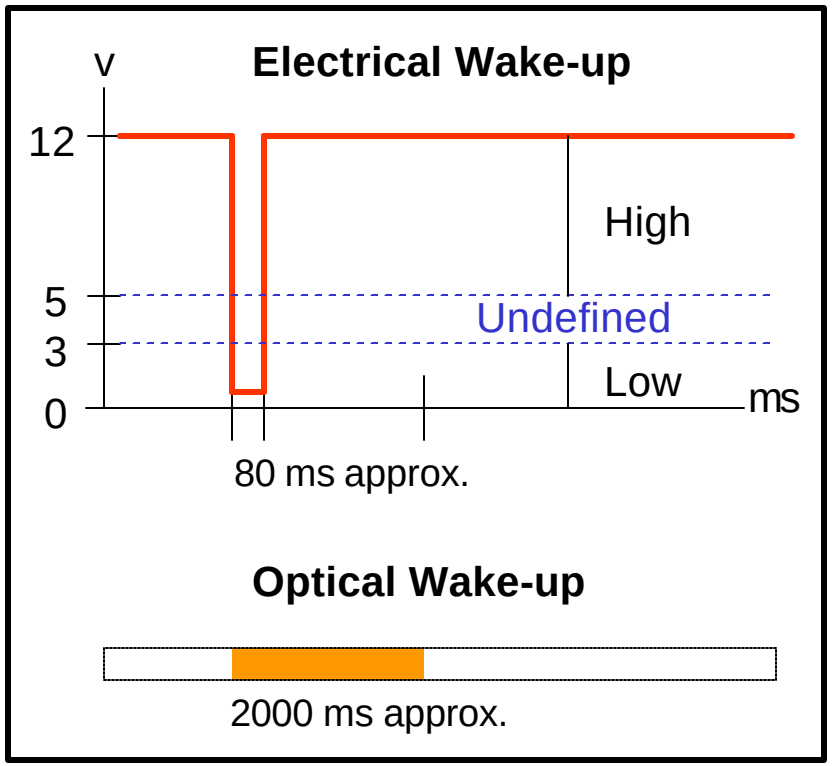
- MOST slave components monitor receiving FOT, as well as the electrical wake-up line when system is OFF

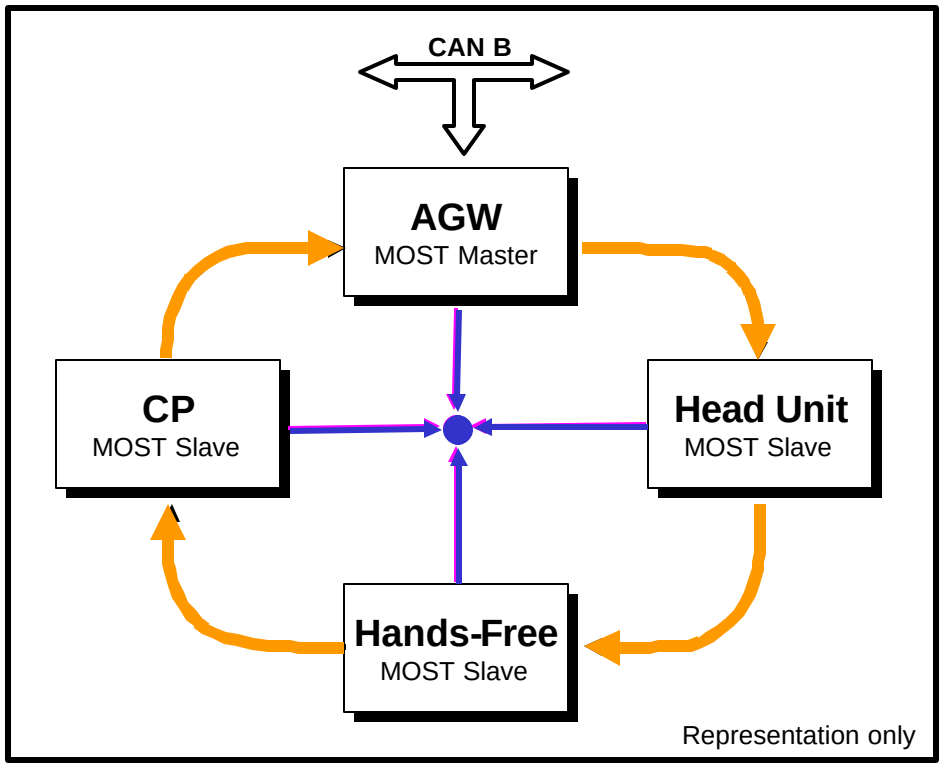
- MOST slave components will wake-up if they receive an electrical wake-up or an optical wake-up pulse

- Bus master will not respond to an optical wake-up pulse

# MOST Wake-Up

1. Electrical and optical wake-up pulse are sent simultaneously
2. Components wake-up and pass message around ring to master
3. If master receives optical message back, then initiates and maintains “ring lock”



# Ring Failure

Version Coding & Configuration

Electrical fault

Optical fault

Failure Mode / Watchdog Function

# Configuration & Version Coding

- In order for the ring to function properly, the master MUST know the number of components on the ring and ORDER of those components with respect to the master.

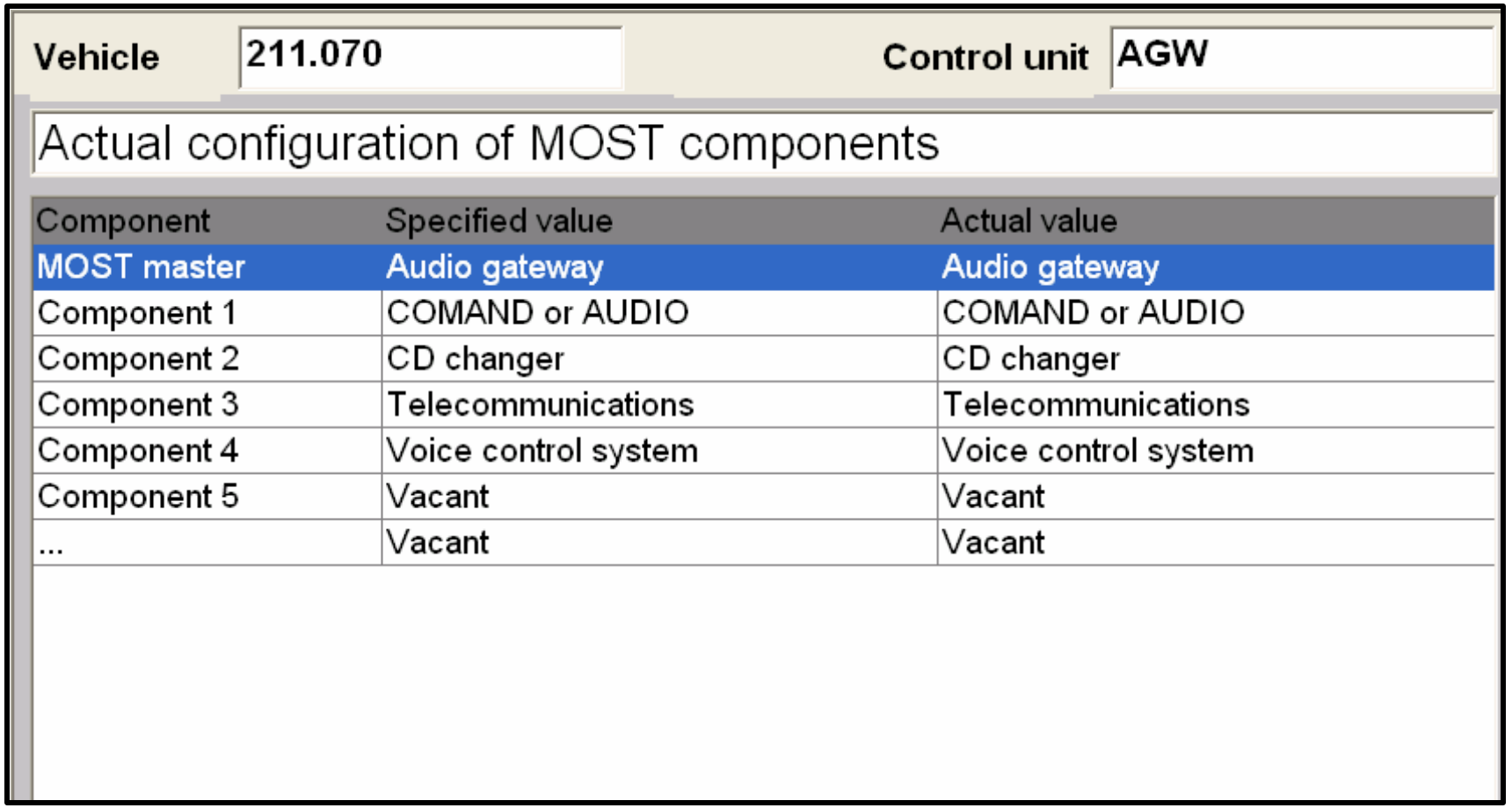
- Refer to the latest Service Information or bulletin for the correct configuration:

  Currently:

  | | |
  |---|---|
  | Date: | August 2000 & October 2002 |
  | Document No.: | SI-82.64/135 & S-B-82.70/135B |
  | Group: | 82 |

**NOTE: Improper version coding and / or incorrect sequencing of components may result in intermittent and / or abnormal operation of the ring.**

# Configuration



Vehicle 211.070 Control unit AGW

Actual configuration of MOST components

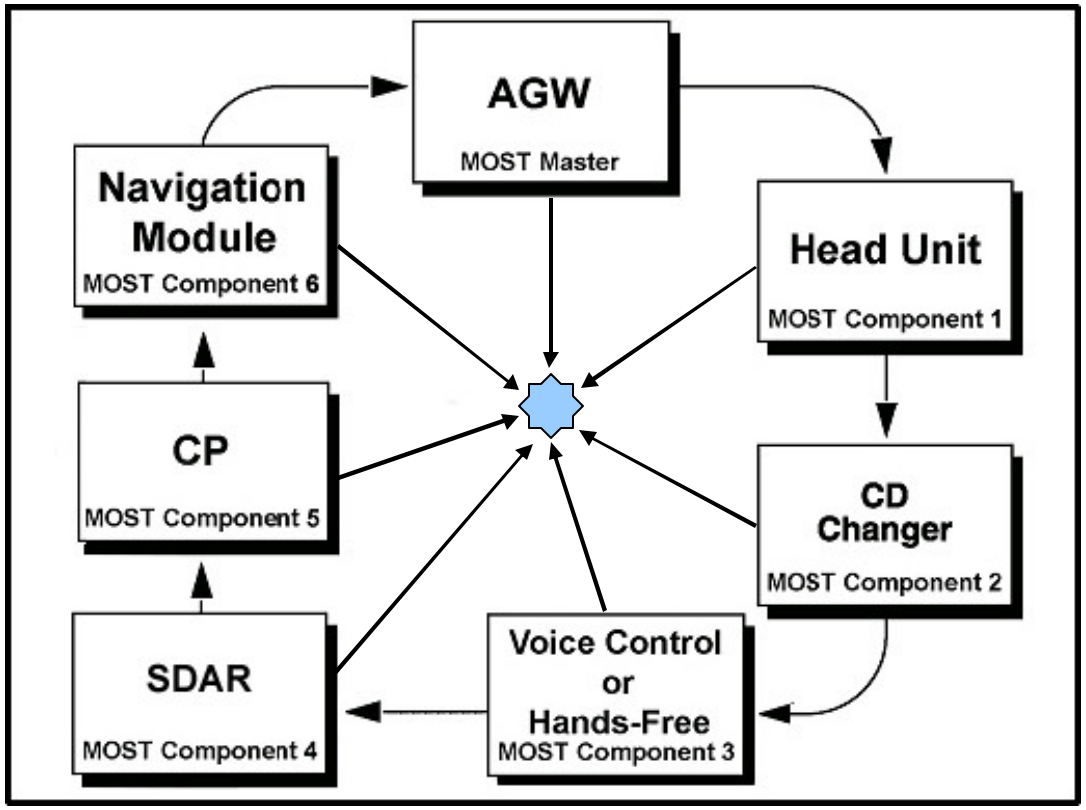
| Component | Specified value | Actual value |
|---|---|---|
| MOST master | Audio gateway | Audio gateway |
| Component 1 | COMAND or AUDIO | COMAND or AUDIO |
| Component 2 | CD changer | CD changer |
| Component 3 | Telecommunications | Telecommunications |
| Component 4 | Voice control system | Voice control system |
| Component 5 | Vacant | Vacant |
| ... | Vacant | Vacant |

Always check ring configuration is correct and corresponds to equipment level using SDS / DAS.

# Ring Configuration

- Optical ring connects components like D2B
- Audio Gateway* is master
- Others components are slave units
- Electrical wake-up line is connected in a star topology similar to D2B
- Each component supplies voltage to wake-up line

W/S 211 MOST Ring configuration



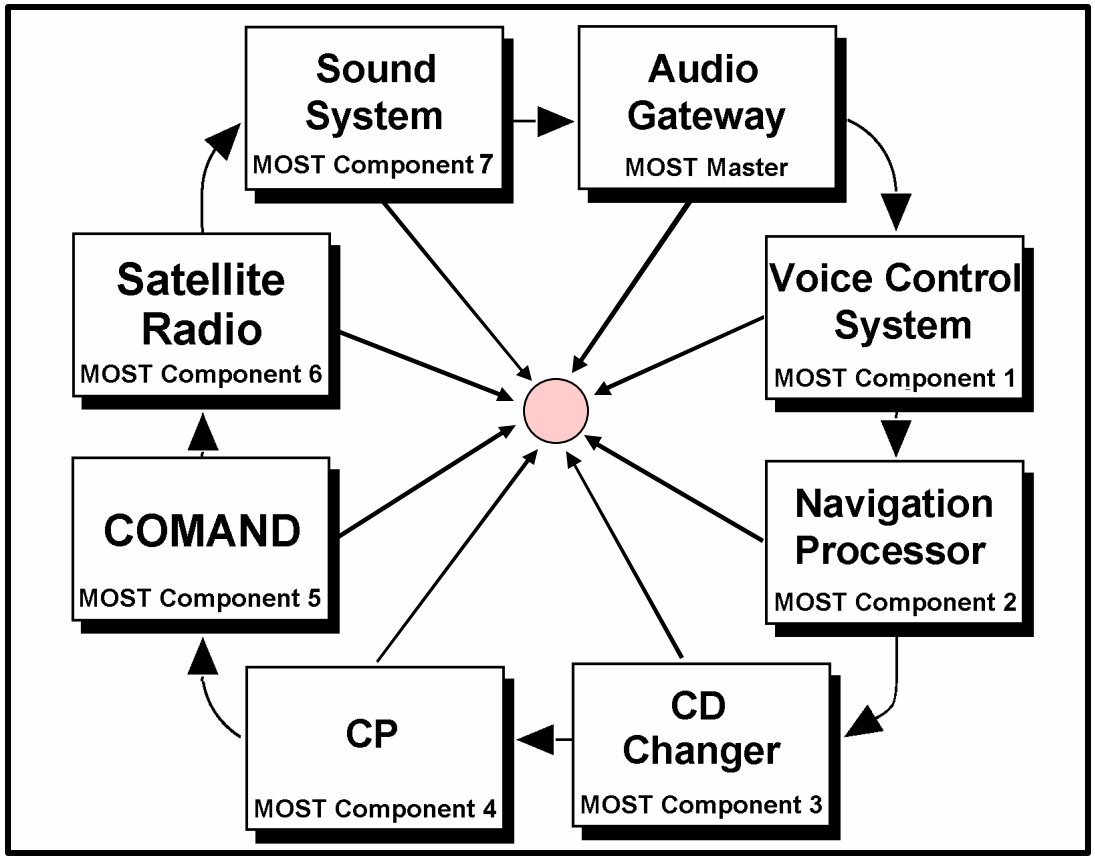

= Wake-up line connector - X30/8
SDAR = Satellite radio module
CP = Communications Platform

* MY2005 C Class with Audio 20 will incorporate MOST master in radio head unit.

# Ring Configuration

- Optical ring connects components like D2B
- Audio Gateway* is master
- Others components are slave units
- Electrical wake-up line is connected in a star topology similar to D2B
- Each component supplies voltage to wake-up line

C215 / V220 MOST Ring configuration




= Wake-up line connector junction Z splice

CP = Communications Platform

* MY2005 C Class with Audio 20 will incorporate MOST master in radio head unit.

# Electrical Fault on Wake-Up Line

- If the electrical wake-up line has an open circuit or is shorted to power, the ring could still be started using the optical wake-up pulse from the master:
  *Note: Only slave units can be woken up by an optical wake-up pulse.*

    - Optical wake-up pulse is sent when:
      - CAN B is active
        or
      - terminal 15R / 15 ON

- Master can respond to an optical message on the ring, as long as the ring was active (e.g. Press Power button on HU)

- What might the customer complaint be in this case?

  “At times the radio will not switch on”

- DTC’s may provide a fault code associated with the wake-up line

# Electrical Fault on Wake-Up Line

- If the electrical wake-up line has a short to ground:

  Scenario 1 - system may operate as if there was an open or short to positive (see previous page).

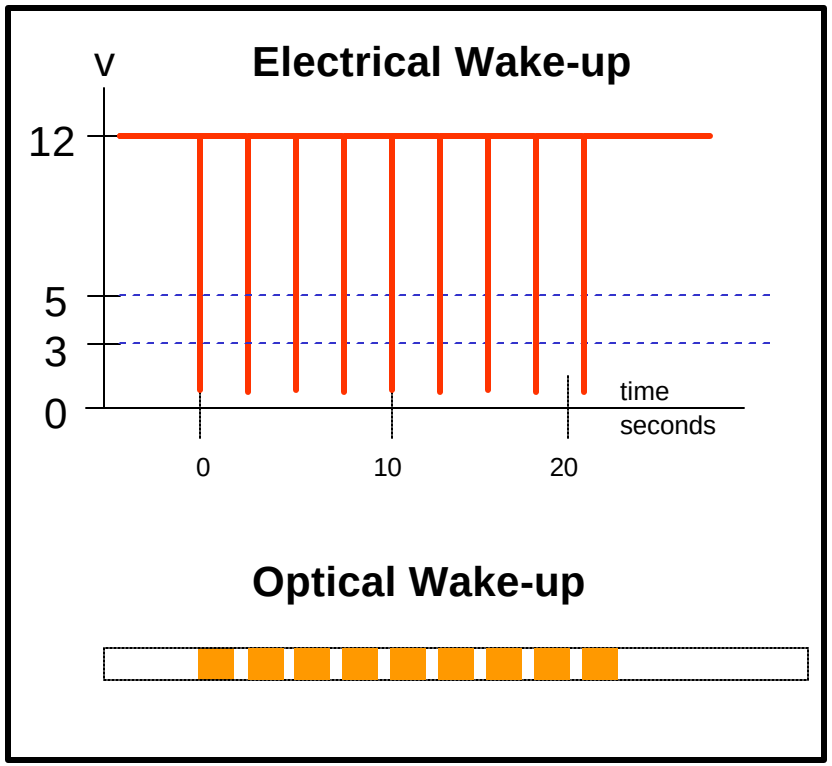
  Scenario 2 - may cause CAN B to remain active and when audio system turned on, will shortly switch off again (as seen at the head unit) no audio

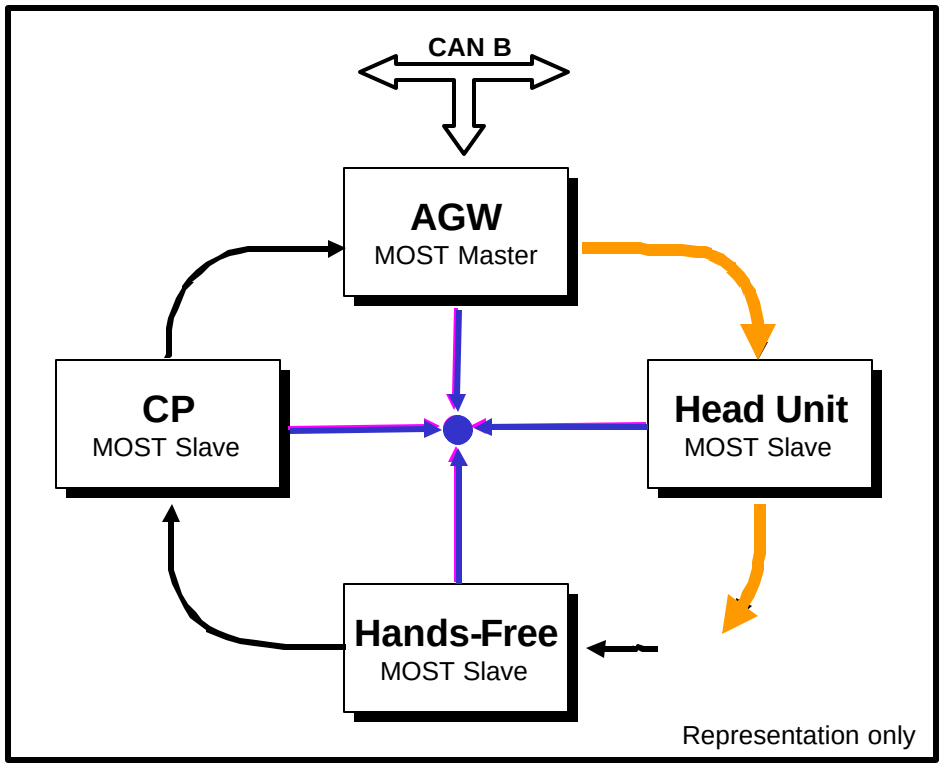
  Scenario 3 - if the audio system is operating with CAN B inactive and then a fault happens that shorts the wake-up line to ground, the sound may cut out after ~65 seconds. The audio screen will remain unchanged but 30 – 40 seconds later CAN B will become active. If the audio system is switched off and then switched on again the audio system will act like scenario 2 above.

*These scenarios are based on practical experience with select vehicles – subject to change*

# Optical Fault

- Optical ring will not achieve ring lock if optical ring is open
- Master will attempt ring start, if ring start is not successful within 2.5 seconds, master will retry
- Master will attempt ring start 9 times



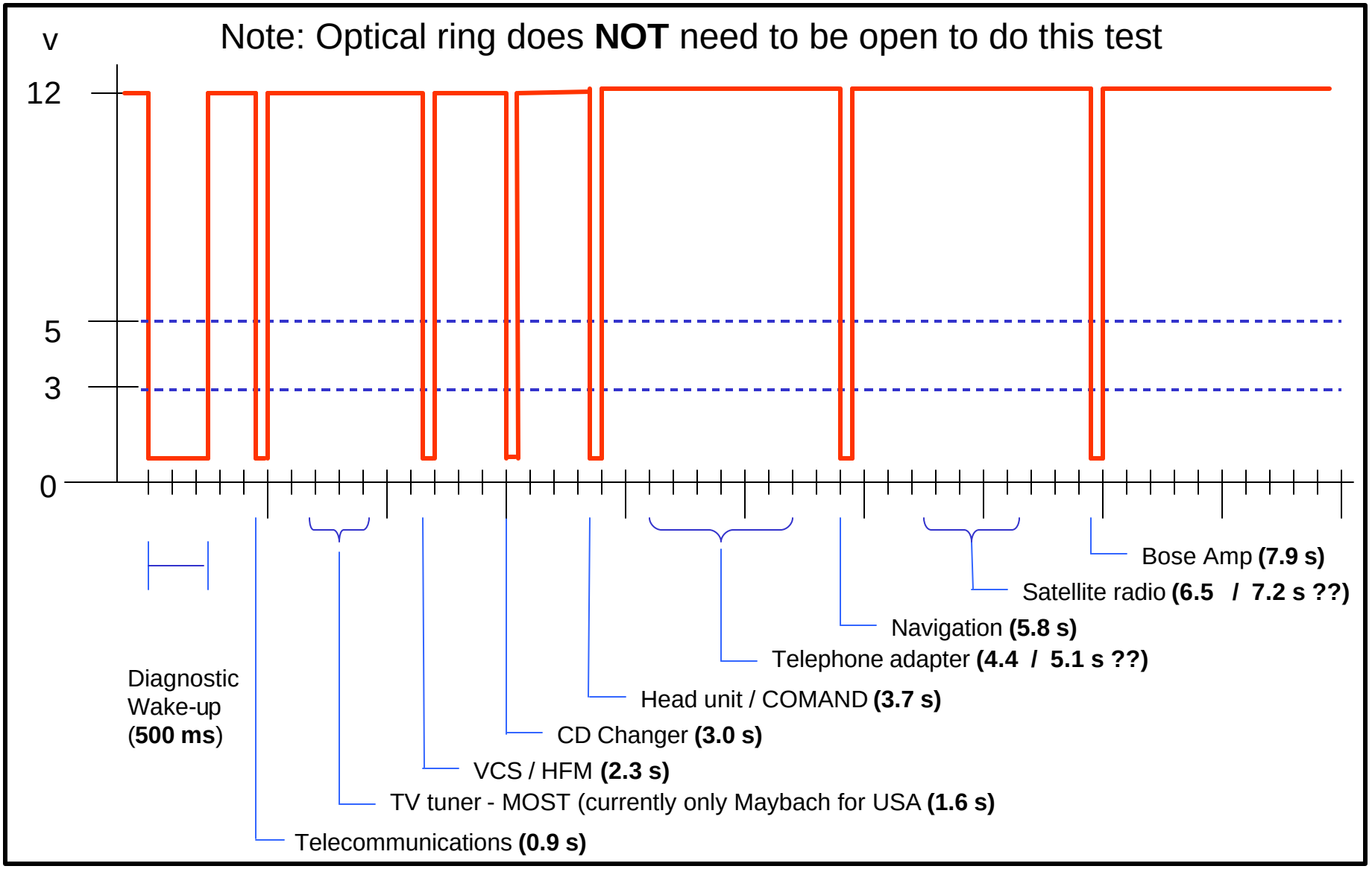



# Fault Detection

- Components are programmed to send a optical roll call message if ring lock is not achieved after 9 ring start attempts
- Master determines appropriate fault code based on components it heard back from on the optical ring similar to D2B
- Checking DTC's may provide a fault code associated with location of ring break
- To determine if problem is electrical or optical perform:
  "Check of wake-up line to the MOST components"

Note: The optical ring does not have to be opened to perform this test

# Diagnostic Wake-Up



# Electrical or Optical Fault?

| Vehicle | 211.070 | Control unit | AGW |
|---|---|---|---|

Check of wake-up line to the MOST components

| No. | Name | Actual values |
|---|---|---|
| 451 | Telecommunications ( Fixed installation cellular telephone ) | - ✓ - |
| 455 | TV tuner ( Not valid for (J) ) | NO REACTION |
| 459 | Voice control system / Hands-free system ( Not valid for (J) ) | - ✓ - |
| 463 | CD changer * | - ✓ - |
| 467 | COMAND or AUDIO * | - ✓ - |
| 475 | Telephone adapter for portable CTEL | NO REACTION |
| 479 | Navigation processor ( Only in connection with COMAND ) ( Not valid for (J) ) * | - ✓ - |
| 487 | Satellite radio (USA) * | NO REACTION |

NO REACTION = Component not fitted or electrical problem at component

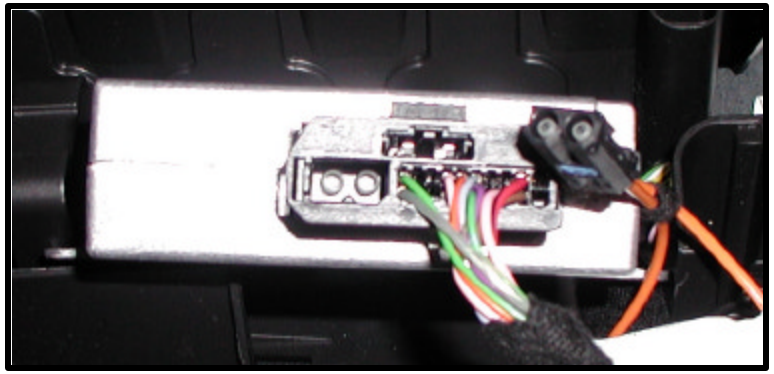
- ✓ - = Component responded (electrically OK)

Note: 1) Test takes longer to perform than the equivalent D2B test because the test is performed twice, with the results of the second test being displayed.

2) *COMAND HU (V220) / CDC (W/S211) / Navigation (W/S211) / Satellite radio (W/S211) does not always respond to this test, even if there is no current problem.

# Visual Check of MOST Ring

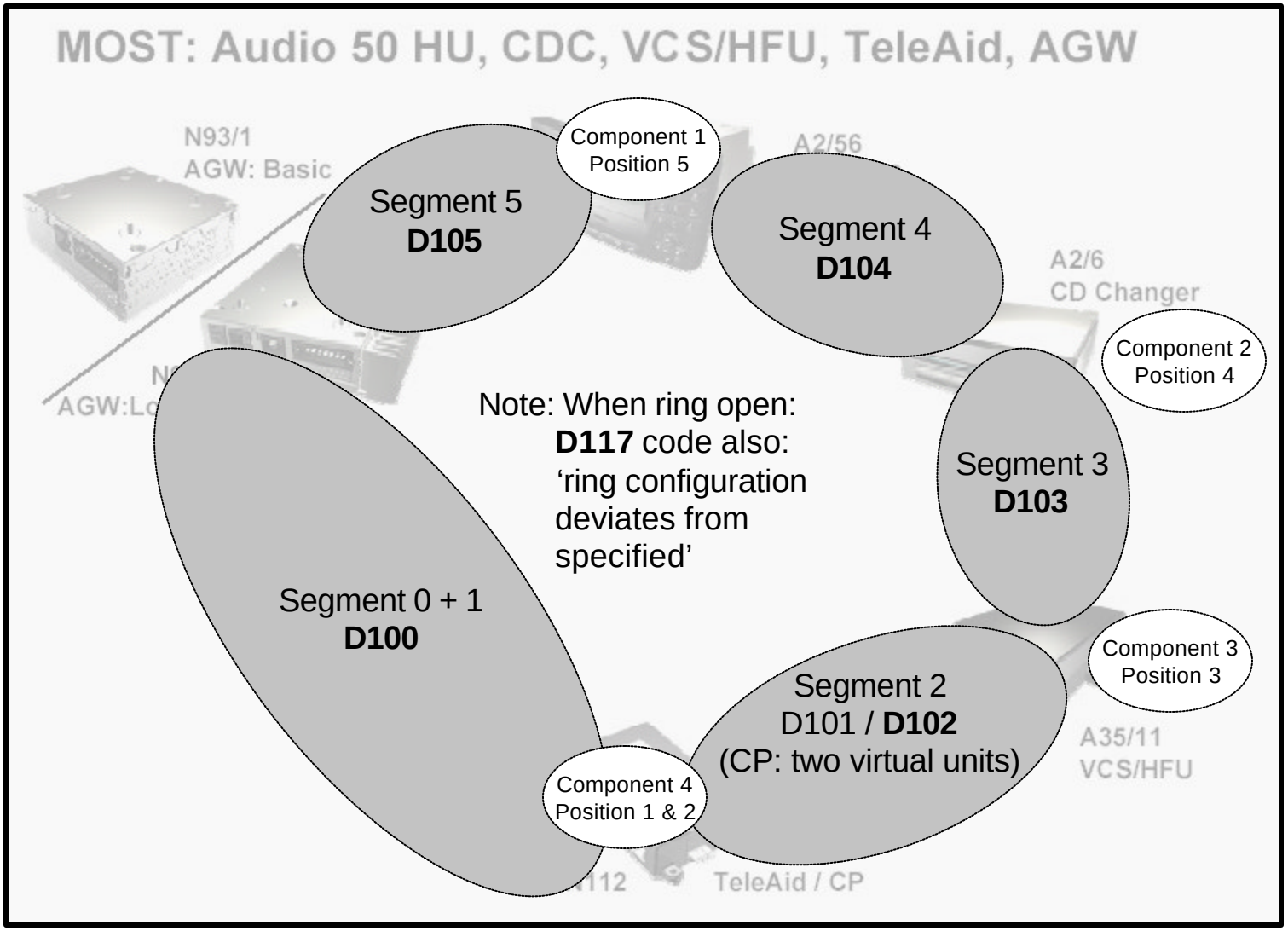
- Remove optical plug connector from one of the MOST components, ensure the electrical part is still connected
- Switch ON the head unit or restart optical ring with DAS
- Observe fiber end of removed connector watching for optical flashes
- What you *should* see:
  - 9 + flashes indicate that MOST circuit is *probably* OK up to that component (incoming optical cables and preceding components)*



- Also observe the component's cable connector socket (FOT)
  - 1 or more flashes from the component after the 9 flashes occur at the cable indicates:
    - Component's power and ground connections are OK
    - Master has successfully awakened component
    - Component's FOT is attempting to inform Master that it is ***OK ****

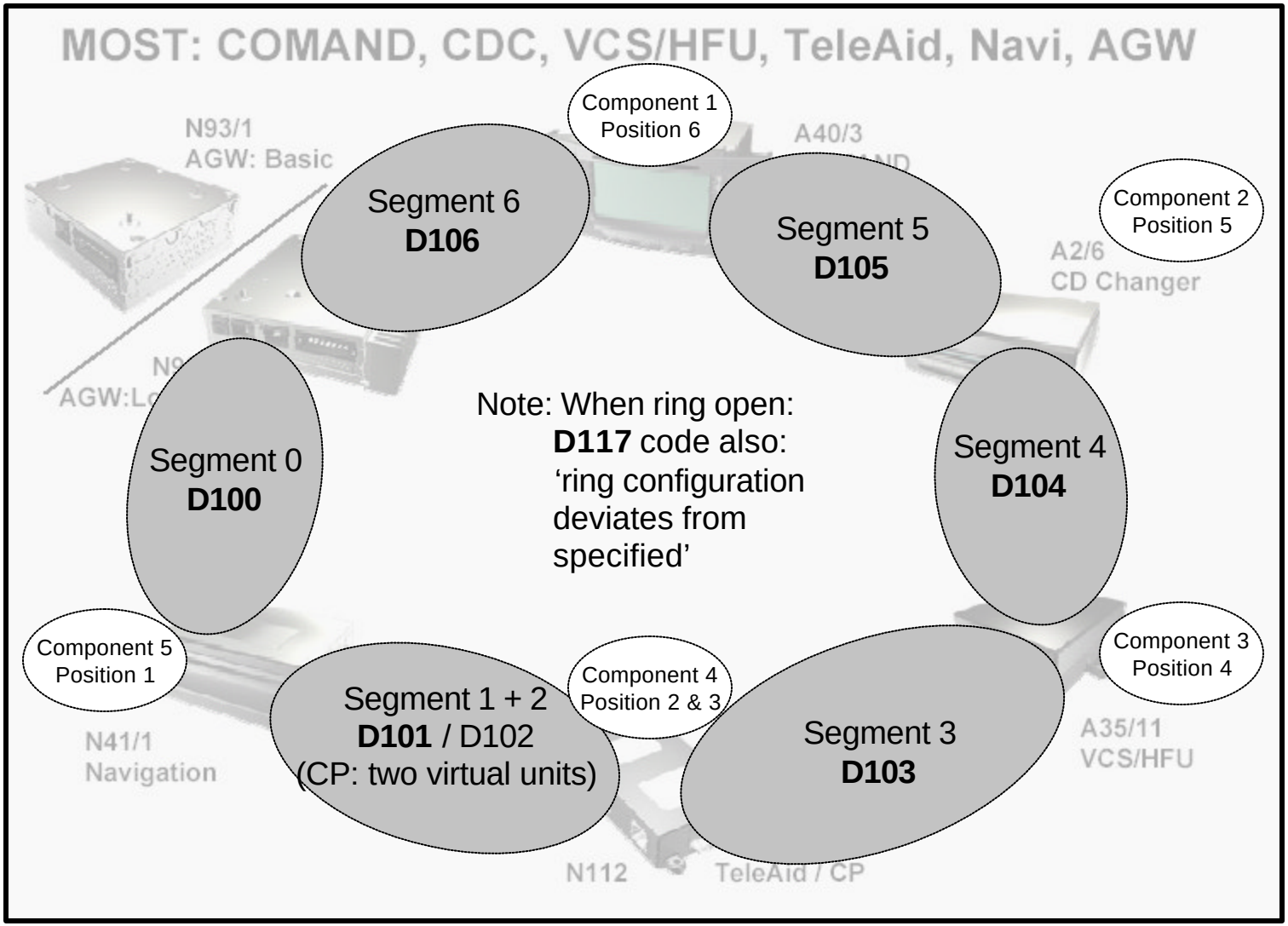
* *Note: This visual check simply verifies the presence of light signals.*

# Fault Detection




Fault code is referenced to vehicle configuration to display correct component text on DAS

# Fault Detection




Fault code is referenced to vehicle configuration to display correct component text on DAS

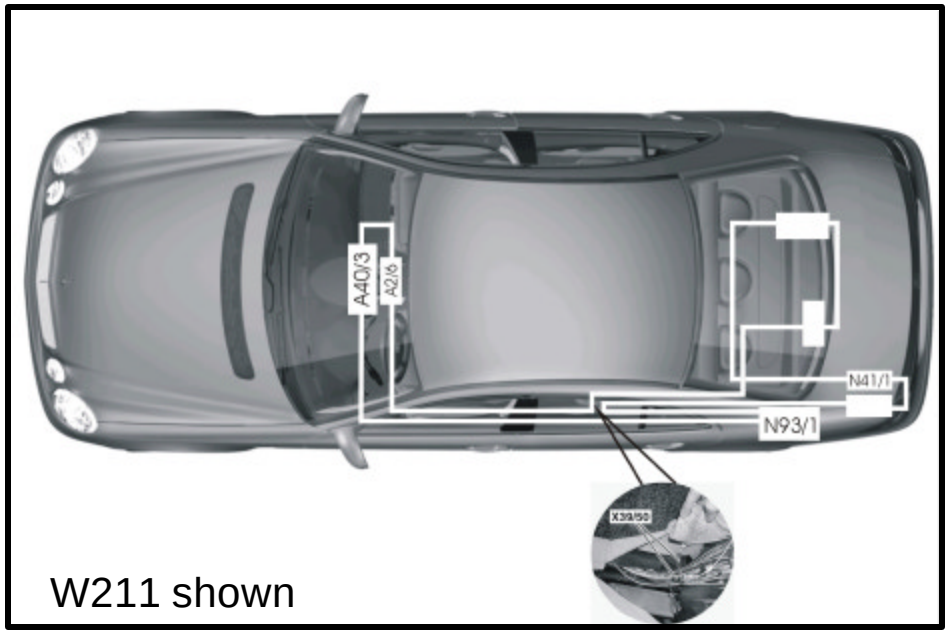
# Watchdog Function

- MOST components have a watchdog function built in
- If a component produces a fault that could cause a network failure, a hardware reset is initiated for that individual component
- Hardware reset may resolve fault and network is re-established
- Each time a hardware reset is performed a fault code and error counter is set in the individual component
- If hardware reset is unsuccessful, component will switch into a bypass mode - repeater mode
- Advantage: ring lock is not lost

Note: Component must have power and ground to operate!

# W/S 211 Optical Cable Routing

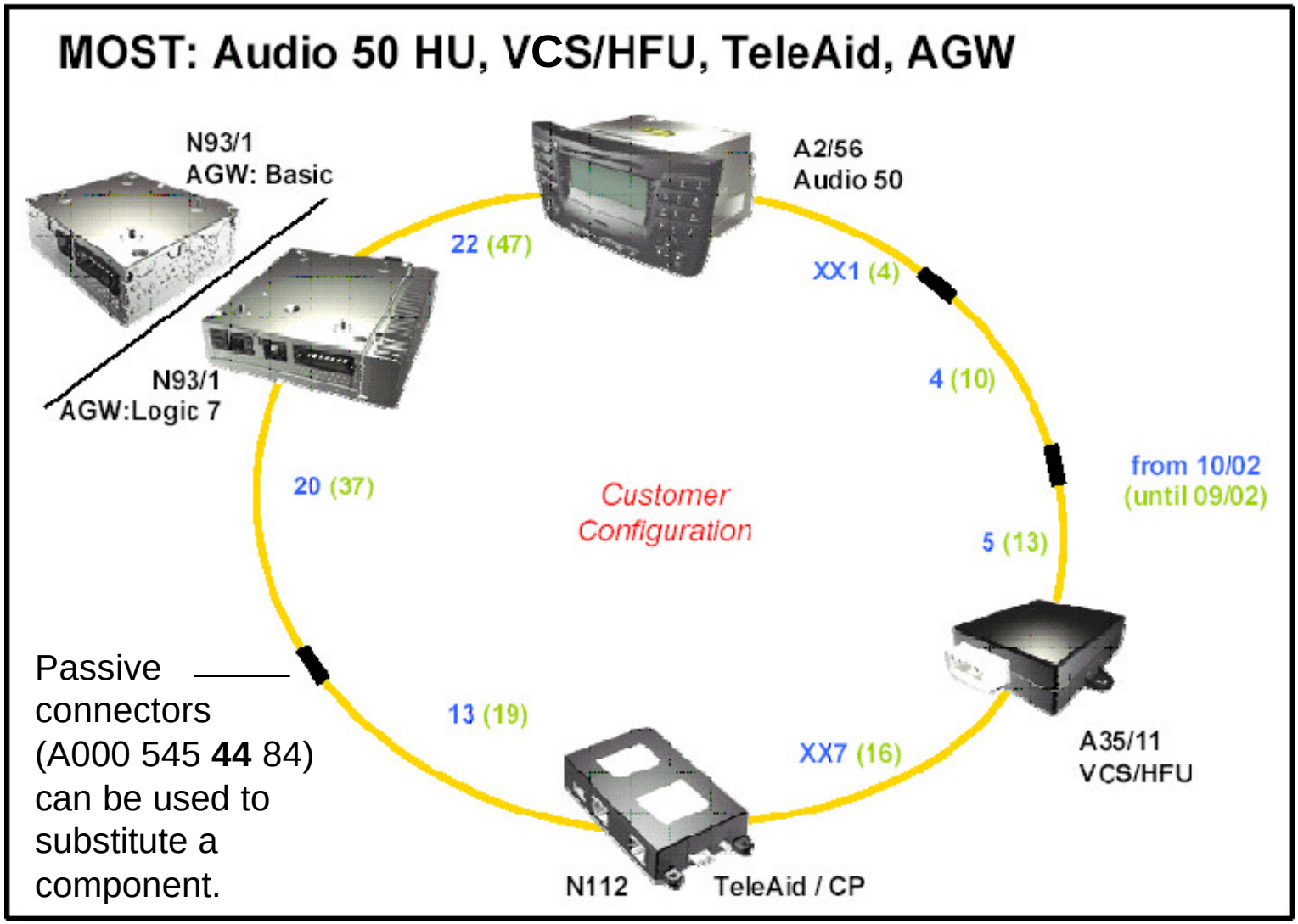
Optical cables:
- generally run down left side of vehicle
- have identification number printed on them



W211 shown

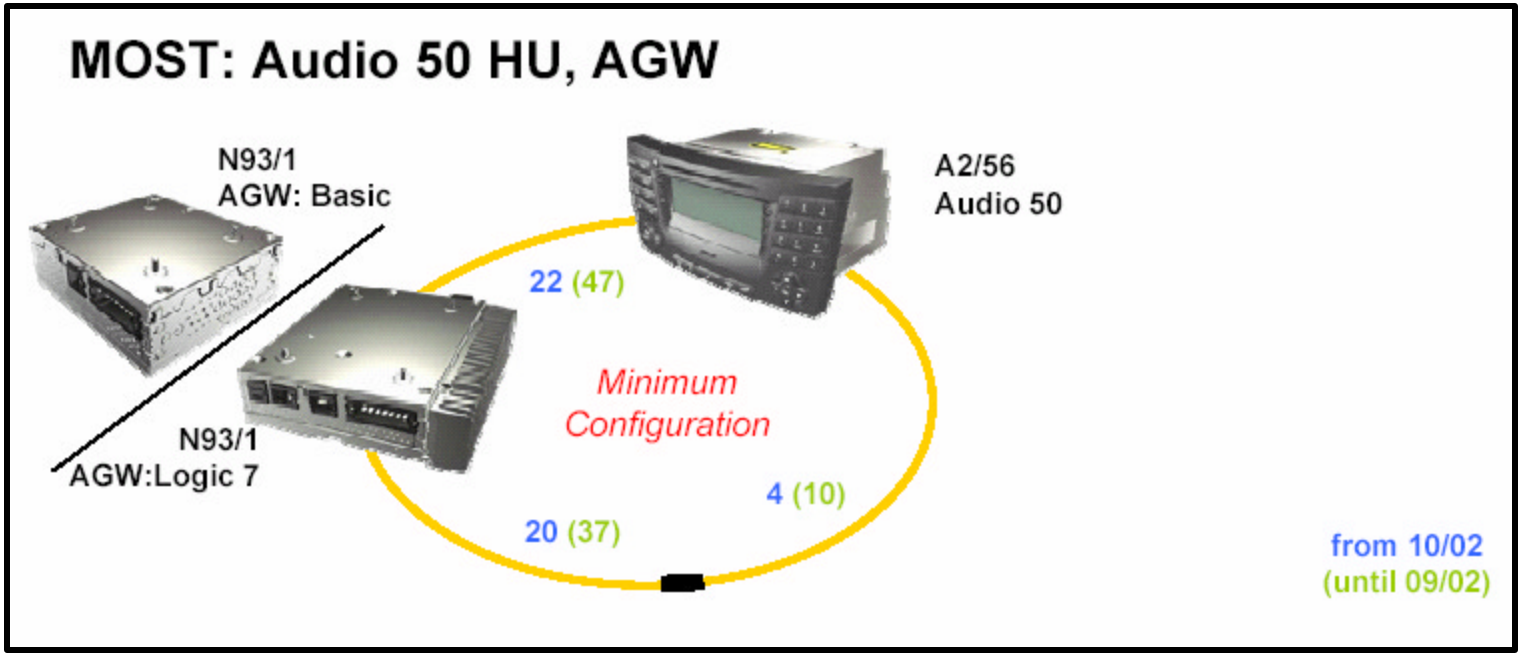

Location: Left rear door sill

# W/S 211 Optical Cable Routing



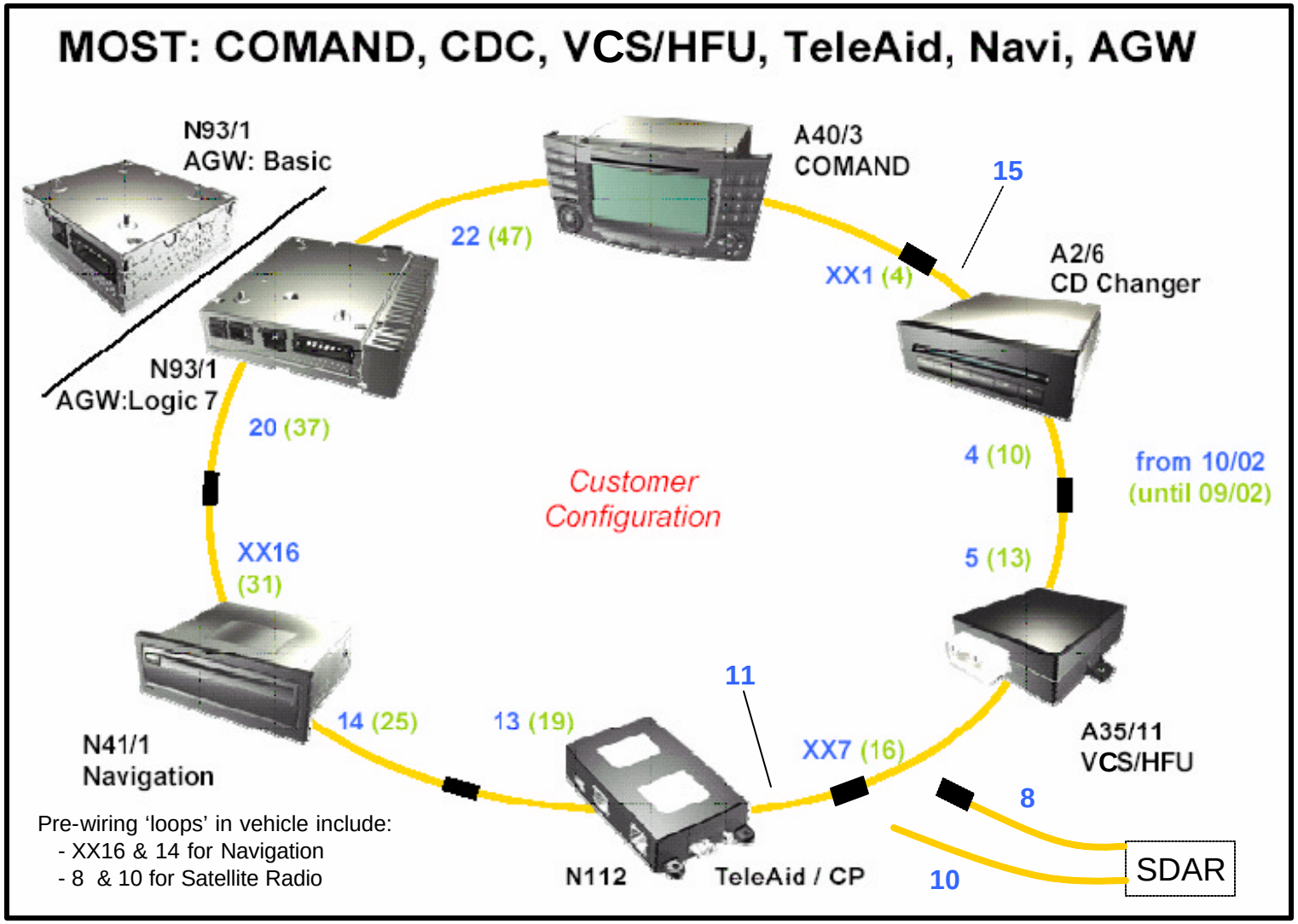

MY 03 - This information is subject to change.

# W/S 211 Optical Cable Routing




- Numbers printed on the optical cables can be used to quickly identify and reconfigure the ring to a minimum configuration for diagnosis purposes
- Example above shows optical cable marked 4 and 20 were connected together
- This can be easily done at the left rear door sill area

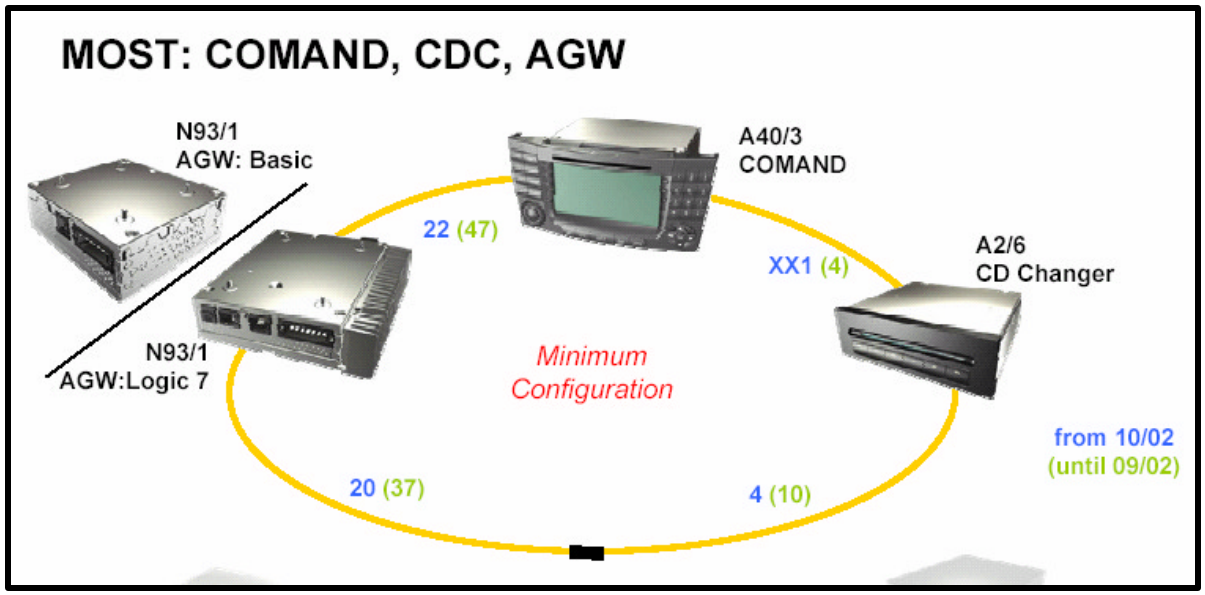
# W/S211 Optical Cable Routing



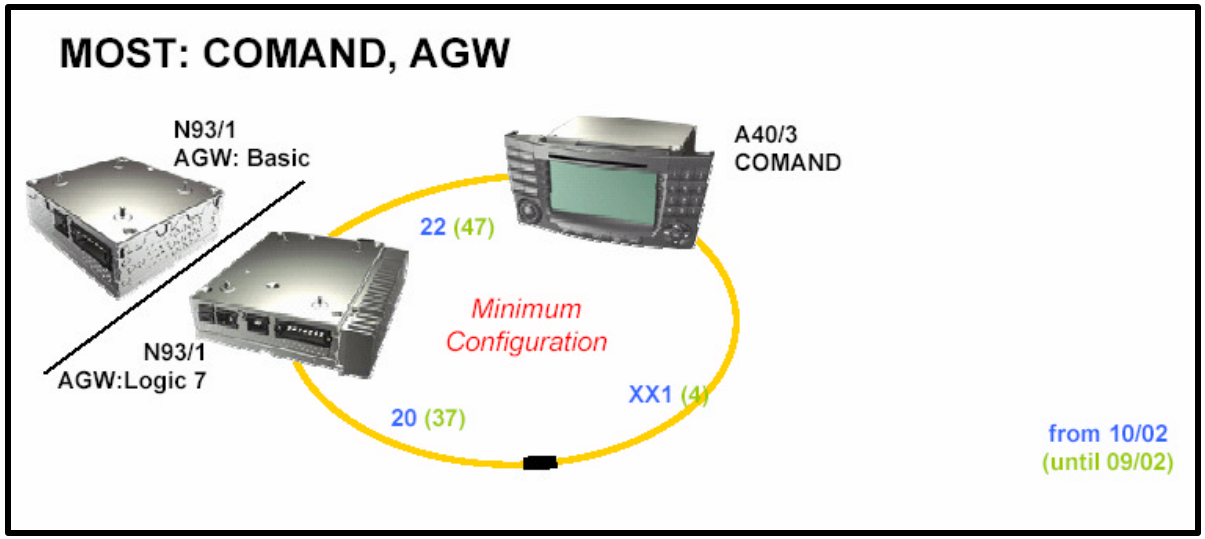

MY 04 - This information is subject to change.

# W/S211 Optical Cable Routing

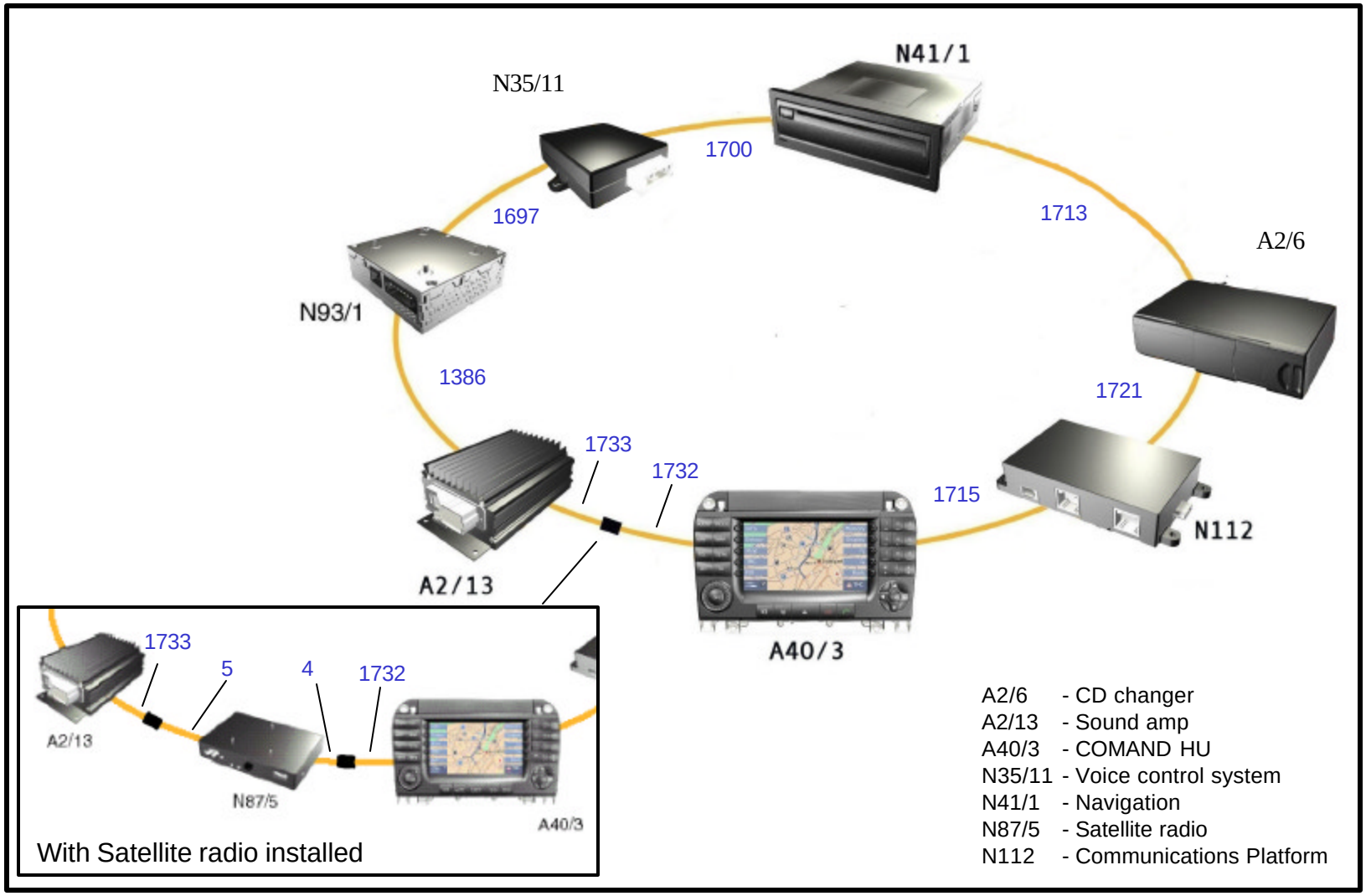
If vehicle equipped with CDC




If vehicle not equipped with CDC



# V220 Optical Cable Routing




This information is subject to change.

# MCS II (MOST - NTG2)

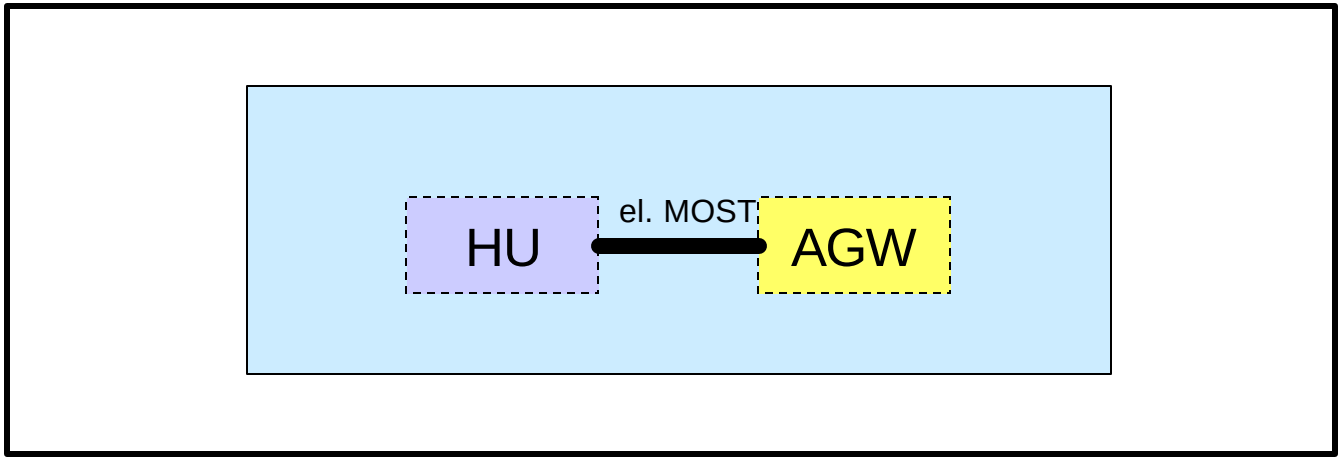

New Telematics Generation 2 (NTG2) is the name given to the next generation of MOST.

# NTG 2

- Audio units that are NTG 2 currently are the Audio 20 and MCS ll units installed in MY2005 C Class (203 MOPF), MY2005 CLK Class (209 MOPF) and the new M Class (W164)

- Main difference as compared to NTG 1 is that the head unit and the AGW are contained within one unit

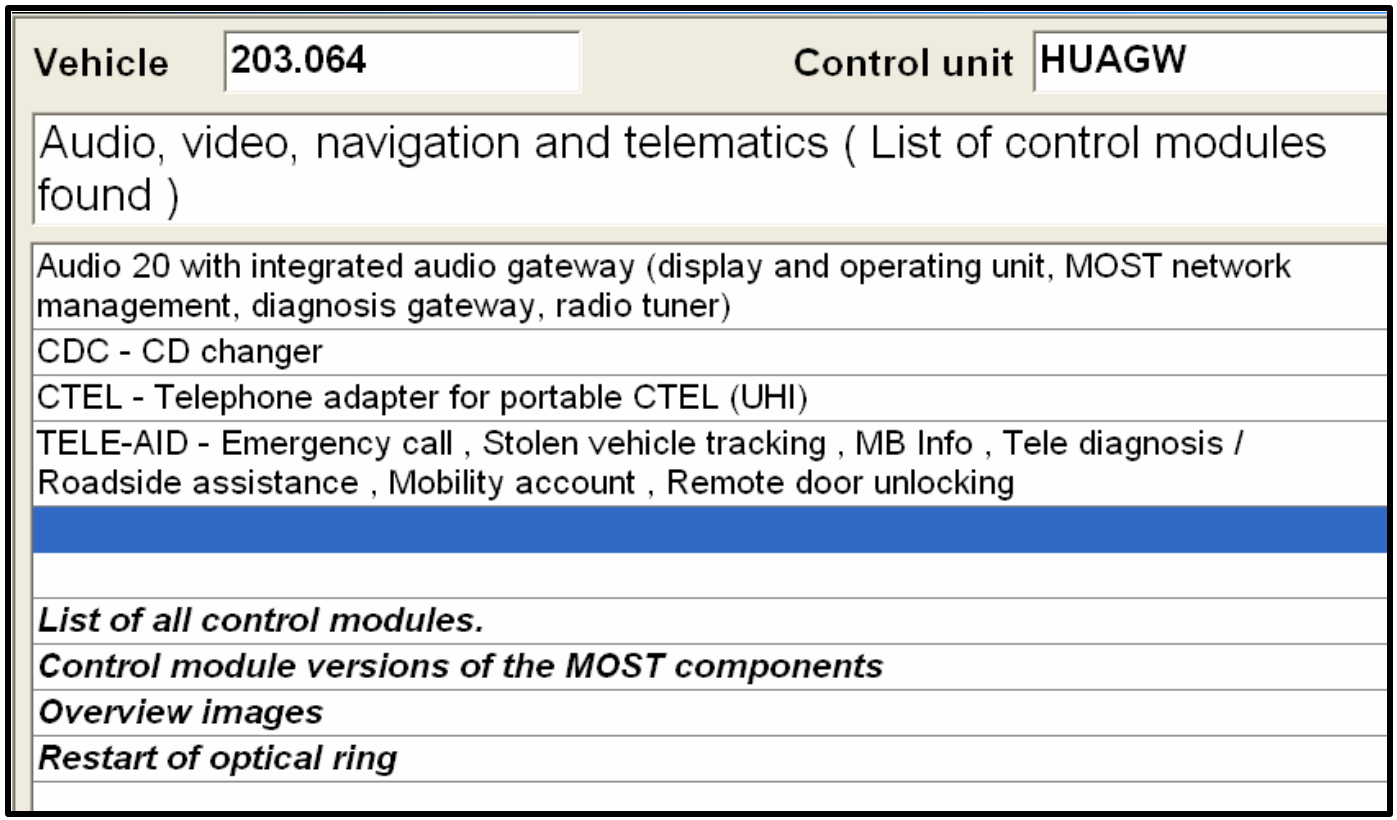
- HU and AGW communicate over a ‘el. MOST’ node within the unit



# NTG 2

- Not all Audio 20 units are NTG 2, for example the new SLK (R171) uses the Audio 20 that is still a NTG 1 system.

- Example below shows one possible way to determine if you have a NTG 2 system. Note the description for Audio 20.



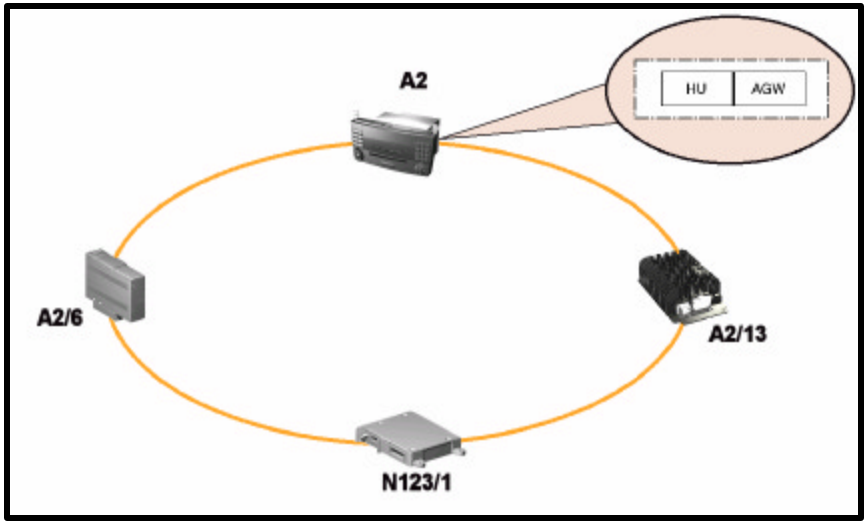

*Note: Subject to change*

# Specified Configuration Note

- If the MOST specified configuration is not coded for any components on the MOST ring then the ring will not be active.

- In this example the sound amplifier (A2/13), CDC (A2/6) & Phone (N123/1) would not be seen as the system considers the HU & AGW are the complete ring

- As the sound amplifier is on the MOST ring no sound would be heard or any CDC or phone functions would work




Vehicle 203.064 Control unit AGW

Specified configuration of MOST components

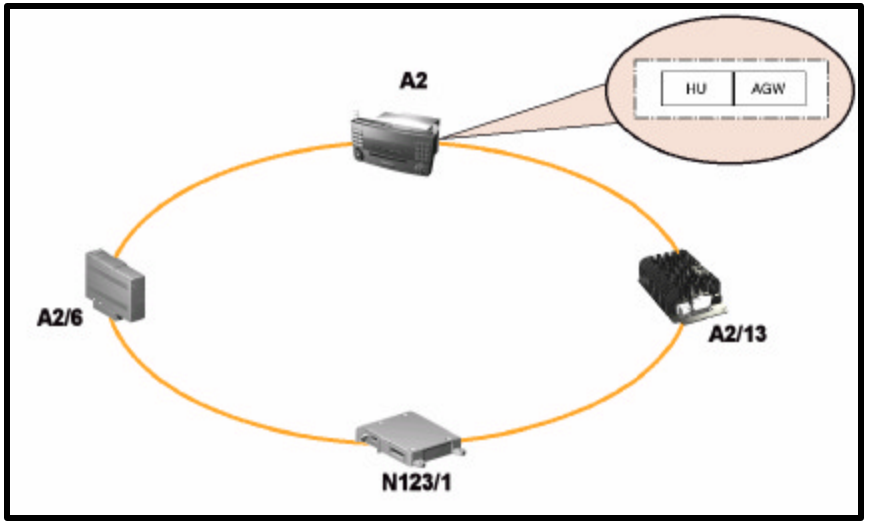
| | Coding |
|---|---|
| MOST master | Audio gateway or Audio 20 with CD drive |
| Component 1 | Vacant |
| Component 2 | Vacant |
| Component 3 | Vacant |
| Component 4 | Vacant |
| Component 5 | Vacant |
| Component 6 | Vacant |
| Component 7 | Vacant |
| Component 8 | Vacant |
| Component 9 | Vacant |
| Component 10 | Vacant |
| Component 11 | Vacant |
| Component 12 | Vacant |
| Component 13 | Vacant |
| Component 14 | Vacant |
| Component 15 | Vacant |

# Specified Configuration Note

- Once a component is specified on the MOST ring, then the ring will become active and function as known from NTG 1 system

- Even if only one of the three MOST components was configured the optical ring would be active and the master would report the actual configuration does not match the specified configuration

- Always ensure the specified configuration is correct for the vehicle options




| Vehicle | 203.064 | Control unit | AGW |
|---|---|---|---|

Specified configuration of MOST components

| | Coding |
|---|---|
| MOST master | Audio gateway or Audio 20 with CD drive |
| Component 1 | Sound system |
| Component 2 | Telecommunications ( ECE , USA ) |
| Component 3 | CD changer |
| Component 4 | Vacant |
| Component 5 | Vacant |
| Component 6 | Vacant |
| Component 7 | Vacant |
| Component 8 | Vacant |
| Component 9 | Vacant |
| Component 10 | Vacant |
| Component 11 | Vacant |
| Component 12 | Vacant |
| Component 13 | Vacant |
| Component 14 | Vacant |
| Component 15 | Vacant |

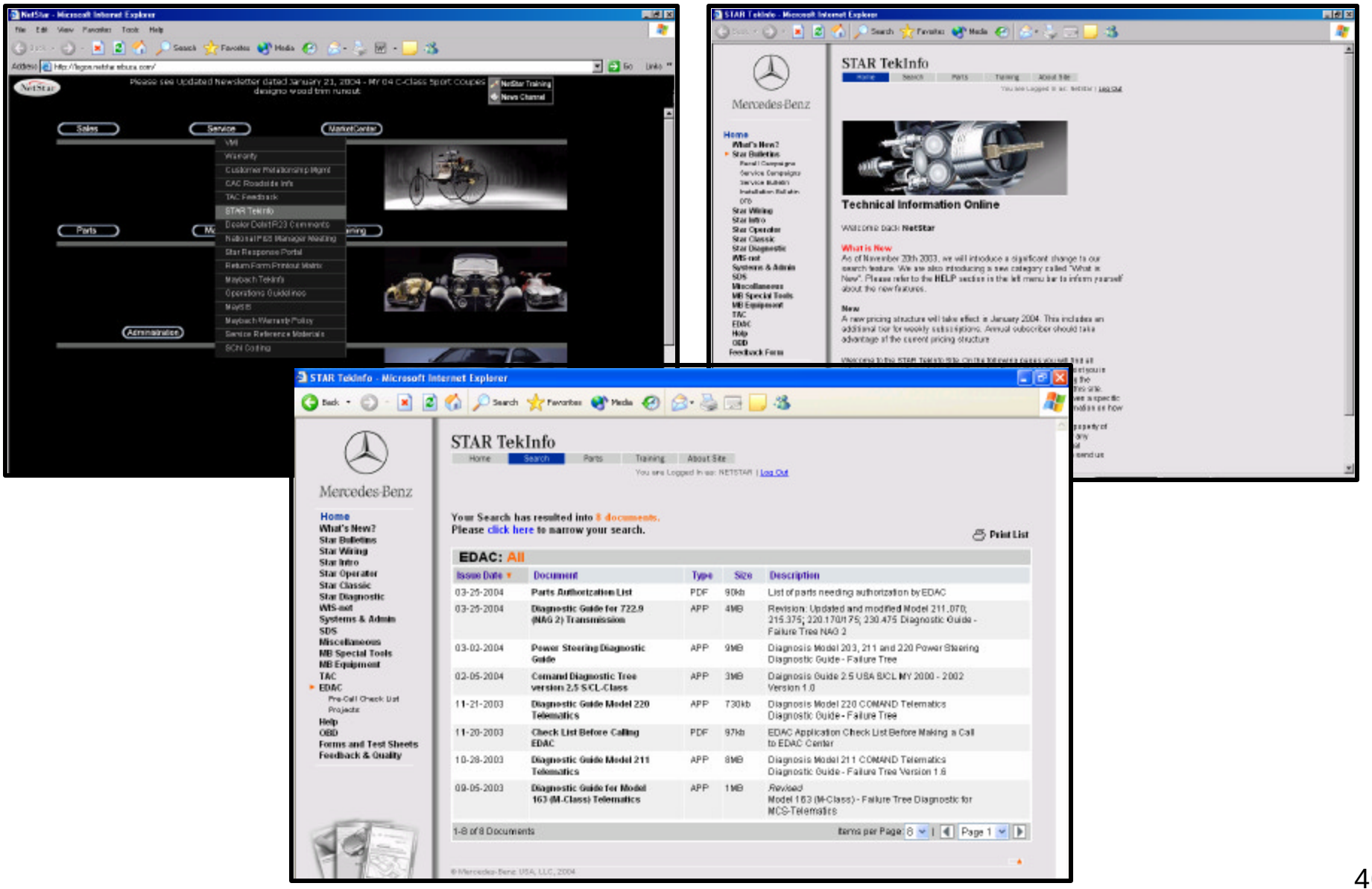
# Diagnostic Resources

NetStar

DAS

EDAC

# EDAC


STAR TekInfo - Microsoft Internet Explorer
STAR TekInfo
Mercedes-Benz
Home
What's New?
Star Bulletins
Star Wiring
Star Intro
Star Operator
Star Classic
Star Diagnostic
WIS-net
Systems & Admin
SDS
Miscellaneous
MB Special Tools
MB Equipment
TAC
EDAC
Pre-Call Check List
Projects
Help
OBD
Forms and Test Sheets
Feedback & Quality
Your Search has resulted into 8 documents.
Please click here to narrow your search.
Print List
EDAC: All
Issue Date
Document
Type
Size
Description
03-25-2004
Parts Authorization List
PDF
90kb
List of parts needing authorization by EDAC
03-25-2004
Diagnostic Guide for 722.9 (NAG 2) Transmission
APP
4MB
Revision: Updated and modified Model 211.070; 215.375; 220.170/175; 230.475 Diagnostic Guide - Failure Tree NAG 2
03-02-2004
Power Steering Diagnostic Guide
APP
9MB
Diagnosis Model 203, 211 and 220 Power Steering Diagnostic Guide - Failure Tree
02-05-2004
Comand Diagnostic Tree version 2.5 S/CL-Class
APP
3MB
Diagnosis Guide 2.5 USA S/CL MY 2000 - 2002 Version 1.0
11-21-2003
Diagnostic Guide Model 220 Telematics
APP
730kb
Diagnosis Model 220 COMAND Telematics Diagnostic Guide - Failure Tree
11-20-2003
Check List Before Calling EDAC
PDF
97kb
EDAC Application Check List Before Making a Call to EDAC Center
10-28-2003
Diagnostic Guide Model 211 Telematics
APP
8MB
Diagnosis Model 211 COMAND Telematics Diagnostic Guide - Failure Tree Version 1.6
09-05-2003
Diagnostic Guide for Model 163 (M-Class) Telematics
APP
1MB
Revised Model 163 (M-Class) - Failure Tree Diagnostic for MCS-Telematics
1-8 of 8 Documents
Items per Page: 8
Page 1

# Service Tip

- Previous MB owners may complain that their new vehicle equipped with MOST does not allow them to change the setting between Station Search or Memory presets in the Instrument Cluster settings.

- Although some MOST equipped vehicles can be version coded with SDS / DAS to display the option in the Instrument Cluster, changing the setting will have no effect on the function.


- Only station search by frequency is supported with MOST

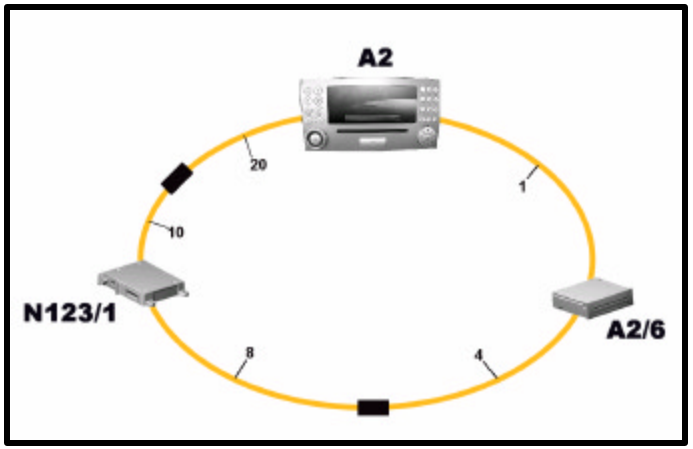
# Reference Section

The following pages contain preliminary details on:

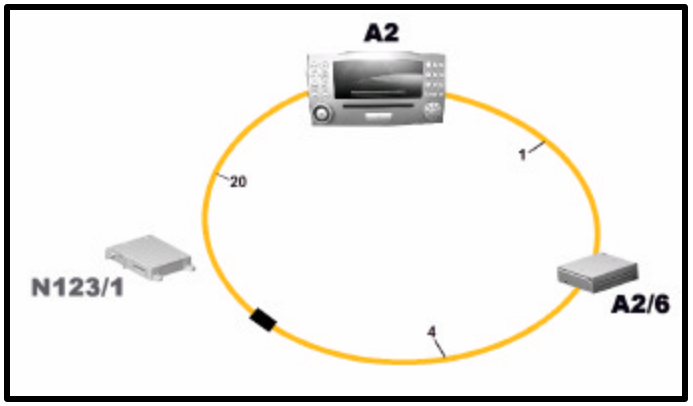
- Optical cable numbering for:
  - MY 2005 Model 171 with Audio 20 (NTG 1)
  - MY 2005 Model 171 with COMAND (NTG 1)
  - MY 2005 Model 203 with Audio 20 (NTG 2)
  - MY 2005 Model 203 with COMAND (NTG 2)

    *(This equipment will not be offered in USA but may be similar to the MCS ll layout that USA will have)*

# Audio 20 in Model 171 (NTG 1)

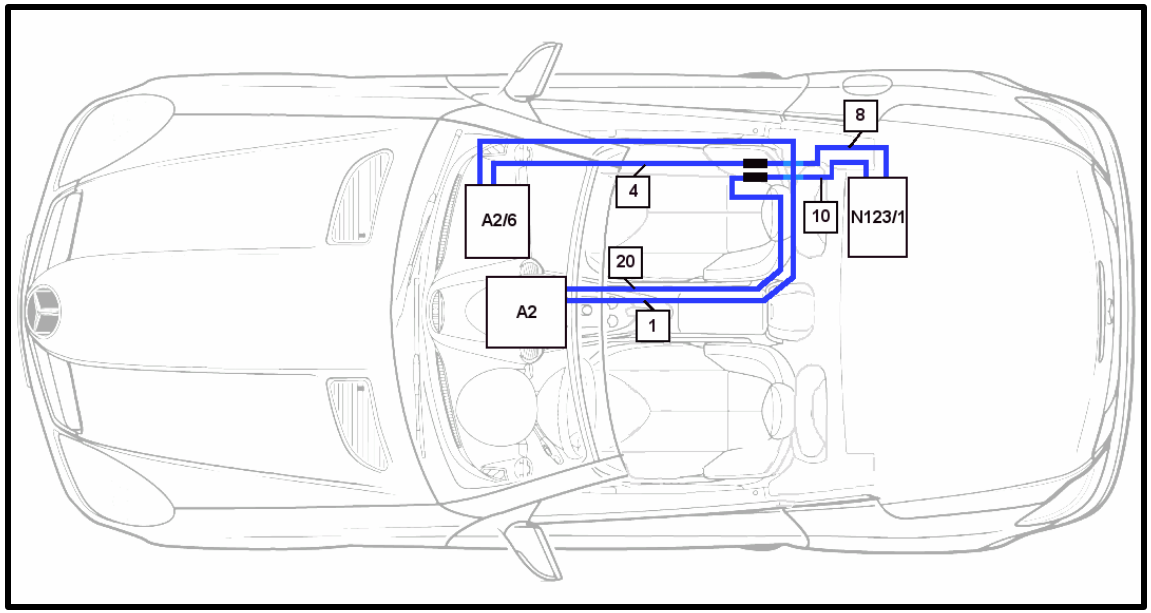



Typical configuration if CD Changer and phone fitted.



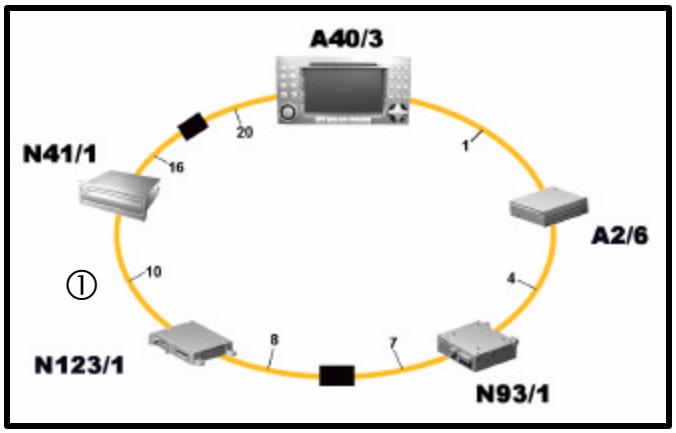

Minimum configuration by connecting optical cable 4 to 20 under passenger seat eliminating phone (if fitted)

A2 - Radio (Audio 20)
A2/6 - CD Changer
N123/1 - Smart cradle control module (UHI)

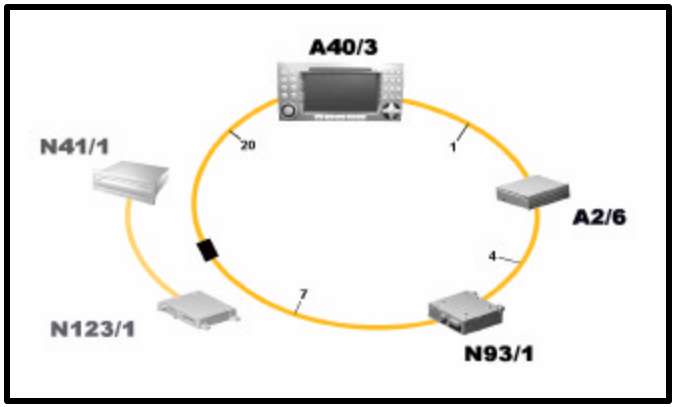



*Note: Preliminary information from European model*

# COMAND in Model 171 (NTG 1)

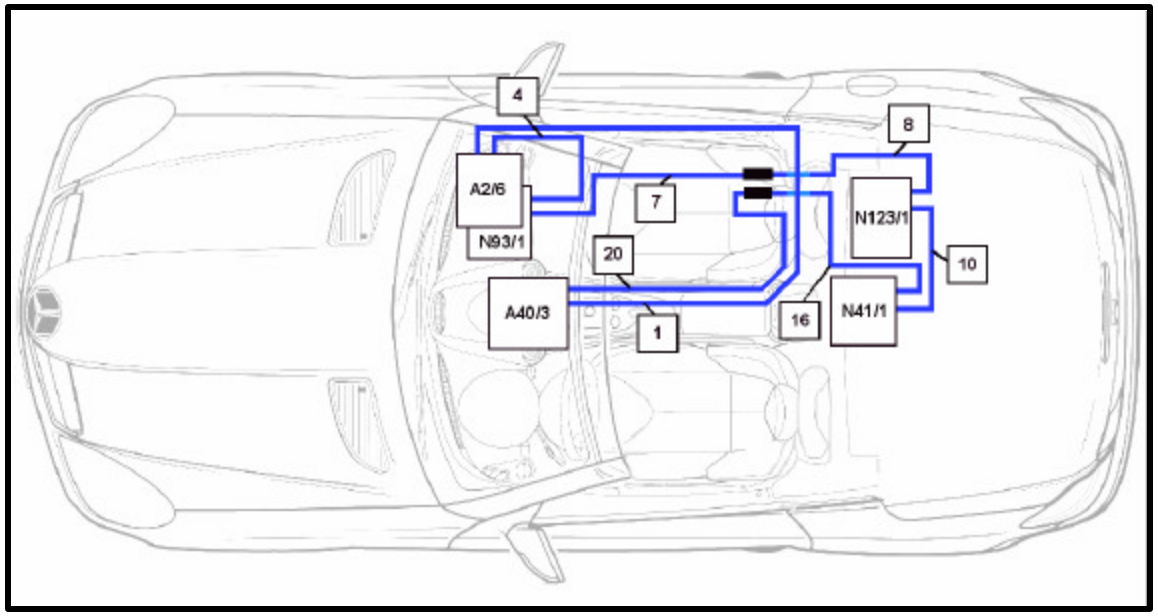



Typical configuration if CD Changer NAV processor & phone fitted.




Minimum configuration by connecting optical cable 7 to 20 under passenger seat eliminating phone & NAV processor (if fitted)

| | |
|---|---|
| A2/6 | - CD Changer |
| A40/3 | - COMAND HU |
| N41/1 | - NAV processor |
| N93/1 | - Audio gateway |
| N123/1 | - Smart cradle control module (UHI) |

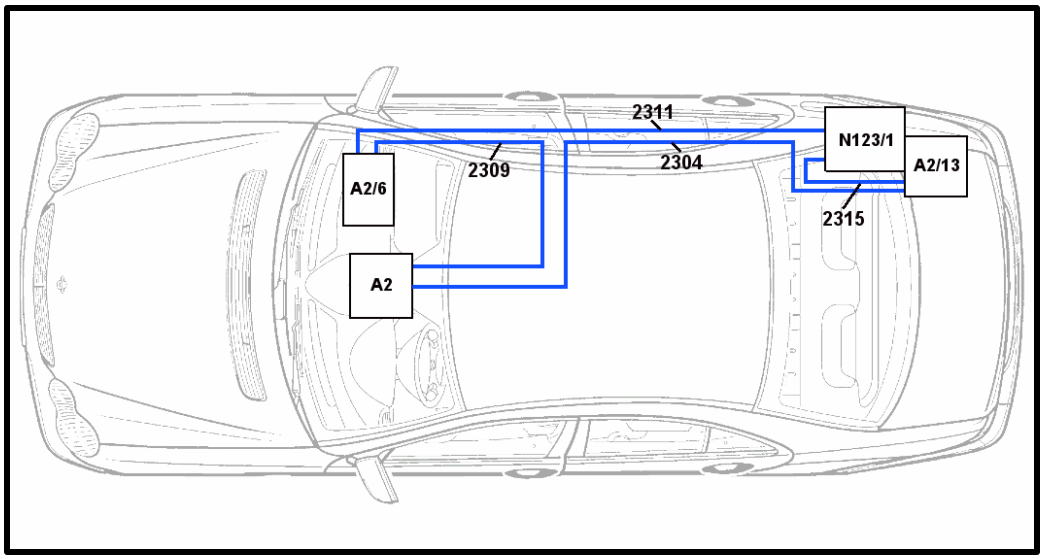


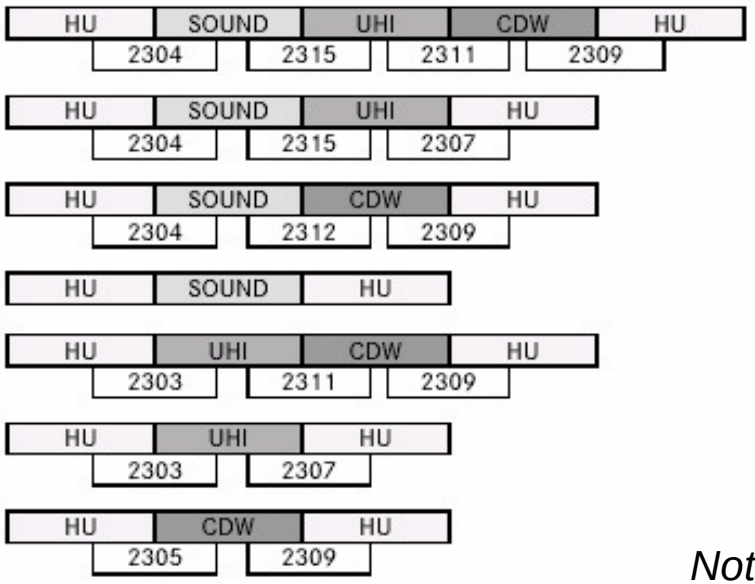

① Optional VCS and SAT expected to be installed here on the ring

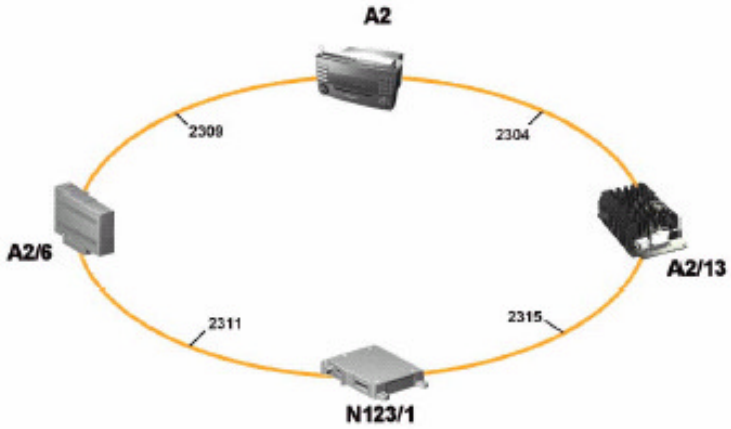
*Note: Preliminary information from European model*

# Audio 20 in Model 203 (NTG 2)

A2 - Audio 20 (HU)
A2/6 - CD Changer (CDW)
A2/13 - Sound amplifier
N123/1 - Smart cradle control module (UHI)




*Note: Preliminary information from European model*

# COMAND in Model 203 (NTG 2)

| HU | SOUND | SBS | UHI | CDW | HU |
|---|---|---|---|---|---|
| 2304 | 2313 | 2317 | 2311 | 2309 | |

| HU | SOUND | SBS | UHI | HU |
|---|---|---|---|---|
| 2304 | 2313 | 2317 | 2307 | |

| HU | SOUND | UHI | CDW | HU |
|---|---|---|---|---|
| 2304 | 2315 | 2311 | 2309 | |

| HU | SOUND | UHI | HU |
|---|---|---|---|
| 2304 | 2315 | 2307 | |

| HU | SOUND | CDW | HU |
|---|---|---|---|
| 2304 | 2312 | 2309 | |

| HU | SOUND | HU |
|---|---|---|
| 2304 | 2308 | |

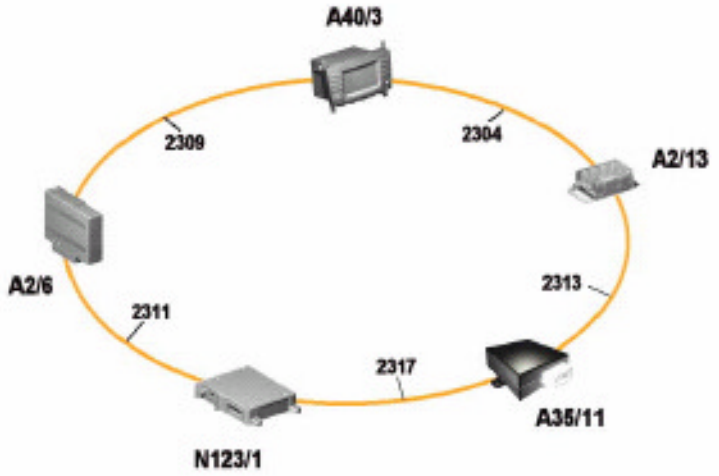
| HU | SBS | UHI | CDW | HU |
|---|---|---|---|---|
| 2301 | 2317 | 2311 | 2309 | |

| HU | SBS | UHI | HU |
|---|---|---|---|
| 2301 | 2317 | 2307 | |

| HU | UHI | CDW | HU |
|---|---|---|---|
| 2303 | 2311 | 2309 | |

| HU | UHI | HU |
|---|---|---|
| 2303 | 2307 | |

| HU | CDW | HU |
|---|---|---|
| 2305 | 2309 | |




Note: USA will have MCS ll unit, which may use the same optical layout except that the headunit will be a MCS ll unit rather than a COMAND unit.

This is subject to verification when vehicle is available.

*Note: Preliminary information from European model*