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2002 FORD Mustang OEM Service and Repair Workshop Manual

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- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the self-test for the module in question (ACM (audio front control module) , APIM (SYNC module)) setting the DTC (diagnostic trouble code) .

Is DTC (diagnostic trouble code) U0100:00 still present?

Yes	GO to AB6
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No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have set due to high network traffic or an intermittent fault condition.
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AB6 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

Yes	<p>CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern,</p> <div data-bbox="271 340 454 394">  </div> <p>Guided Routine available in the on-line Workshop Manual.</p>
No	<p>The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.</p>

PINPOINT TEST AC : U0121 (ACM (AUDIO FRONT CONTROL MODULE))

Normal Operation and Fault Conditions

The ACM (audio front control module) communicates with the ABS (anti-lock brake system) module over the CAN (controller area network) . If messages are missing or not received from the ABS (anti-lock brake system) module, the GPS (global positioning system) feature may not be accurate.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ACM (audio front control module) U0121:00	Lost Communication With Anti-Lock Brake System (ABS) Control Module 'A': No Sub Type Information	Sets in continuous memory when the ACM (audio front control module) detects network messages are missing from the ABS (anti-lock brake system) module for more than 5 seconds.

Possible Sources

- Network communication concern
- ACM (audio front control module) concern
- ABS (anti-lock brake system) module

AC1 VERIFY THE CONCERN

AC4 CHECK FOR NON-NETWORK ABS (ANTI-LOCK BRAKE SYSTEM) MODULE DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, carry out the ABS (anti-lock brake system) module self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the Master DTC Chart.
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No	GO to AC5
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AC5 RECHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) U0121:00

- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question (ACM (audio front control module)) setting the DTC (diagnostic trouble code) .
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the self-test for the module in question (ACM (audio front control module)) setting the DTC (diagnostic trouble code) .

Is DTC (diagnostic trouble code) U0121:00 still present?

Yes	GO to AC6
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No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.
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AC6 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE

If new modules were installed prior to the DTC (diagnostic trouble code) being set, the module configuration can be incorrectly set during the PMI (programmable module installation) or the PMI (programmable module installation) may not have been carried out.

- Check the vehicle service history for recent service actions related to the ABS (anti-lock brake system) module and the module in question (ACM (audio front control module)) setting the DTC (diagnostic

connections. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST AD : U0140 (ACM (AUDIO FRONT CONTROL MODULE) , DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) , TCU (TELEMATIC CONTROL UNIT MODULE))

Normal Operation and Fault Conditions

The ACM (audio front control module) , the DSP (audio digital signal processing module) and the TCU (telematic control unit module) communicate with the BCM (body control module) over the CAN (controller area network) . If messages are missing or not received from the BCM (body control module) , the display screen brightness may not operate not operate correctly.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ACM (audio front control module) U0140:00	Lost Communication With Body Control Module: No Sub Type Information	Sets in continuous memory when the ACM (audio front control module) detects network messages are missing from the BCM (body control module) for more than 5 seconds.
DSP (audio digital signal processing module) U0140:00	Lost Communication With Body Control Module: No Sub Type Information	Sets in continuous memory when the DSP (audio digital signal processing module) detects network messages are missing from the BCM (body control module) for more than 5 seconds.
TCU (telematic control unit module) U0140:00	Lost Communication With Body Control Module: No Sub Type Information	Sets in continuous memory when the TCU (telematic control unit module) detects network messages are missing from the BCM (body control module) for more than 5 seconds.

Possible Sources

- Network communication concern
- ACM (audio front control module) concern
- DSP (audio digital signal processing module) concern
- TCU (telematic control unit module) concern
- BCM (body control module)

AD1 VERIFY THE CONCERN

AD4 CHECK FOR NON-NETWORK BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, carry out the BCM (body control module) self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the Master DTC Chart.
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No	GO to AD5
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AD5 RECHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) U0140:00

- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question (ACM (audio front control module) , DSP (audio digital signal processing module) , TCU (telematic control unit module)) setting the DTC (diagnostic trouble code) .
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the self-test for the module in question (ACM (audio front control module) , DSP (audio digital signal processing module) , TCU (telematic control unit module)) setting the DTC (diagnostic trouble code) .

Is DTC (diagnostic trouble code) U0140:00 still present?

Yes	GO to AD6
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No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.
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AD6 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE

If new modules were installed prior to the DTC (diagnostic trouble code) being set, the module configuration can be incorrectly set during the PMI (programmable module installation) or the PMI (programmable module installation) may not have been carried out.

(419-10 Multifunction Electronic Modules, Removal and Installation).

No

The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST AE : U0146 (TCU (TELEMATIC CONTROL UNIT MODULE))

Normal Operation and Fault Conditions

The TCU (telematic control unit module) communicates with the GWM (gateway module A) over the CAN (controller area network) . If messages are missing or not received from the GWM (gateway module A) , Ford Pass features and over the air updates may be inoperative.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
TCU (telematic control unit module) U0146:09	Lost Communication With Serial Data Gateway 'A': Component Failures	Sets in continuous memory when the TCU (telematic control unit module) detects network messages are missing from the GWM (gateway module A) over the Ethernet for more than 5 seconds.

Possible Sources

- Network communication concern
- TCU (telematic control unit module) concern
- GWM (gateway module A)

AE1 VERIFY THE CONCERN

- Ignition ON.
- Verify an observable symptom present.

Is an observable symptom present?

Yes

GO to [AE2](#)

No

CLEAR the DTC (diagnostic trouble code) . The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault

AE5 RECHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) U0146:09

- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question (TCU (telematic control unit module)) setting the DTC (diagnostic trouble code) .
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the self-test for the module in question (TCU (telematic control unit module)) setting the DTC (diagnostic trouble code) .

Is DTC (diagnostic trouble code) U0146:09 still present?

Yes	GO to AE6
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No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.
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AE6 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE

If new modules were installed prior to the DTC (diagnostic trouble code) being set, the module configuration can be incorrectly set during the PMI (programmable module installation) or the PMI (programmable module installation) may not have been carried out.

- Check the vehicle service history for recent service actions related to the GWM (gateway module A) and the module in question (TCU (telematic control unit module)) setting the DTC (diagnostic trouble code) . If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

The ACM (audio front control module) and the DSP (audio digital signal processing module) communicate with the IPC (instrument panel cluster) over the CAN (controller area network). If messages are missing or not received from the IPC (instrument panel cluster), features such as the display illumination or warning chimes may not operate correctly.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ACM (audio front control module) U0155:00	Lost Communication With Instrument Panel Cluster (IPC) Control Module: No Sub Type Information	Sets in continuous memory when the ACM (audio front control module) detects network messages are missing from the IPC (instrument panel cluster) for more than 5 seconds.
DSP (audio digital signal processing module) U0155:00	Lost Communication With Instrument Panel Cluster (IPC) Control Module: No Sub Type Information	Sets in continuous memory when the DSP (audio digital signal processing module) detects network messages are missing from the IPC (instrument panel cluster) for more than 5 seconds.

Possible Sources

- Network communication concern
- ACM (audio front control module) concern
- DSP (audio digital signal processing module) concern
- IPC (instrument panel cluster)

AF1 VERIFY THE CONCERN

- Ignition ON.
- Verify an observable symptom present.

Is an observable symptom present?

Yes	GO to AF2
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No	CLEAR the DTC (diagnostic trouble code). The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.
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- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question (ACM (audio front control module) , DSP (audio digital signal processing module)) setting the DTC (diagnostic trouble code) .
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the self-test for the module in question (ACM (audio front control module) , DSP (audio digital signal processing module)) setting the DTC (diagnostic trouble code) .

Is DTC (diagnostic trouble code) U0155:00 still present?

Yes	GO to AF6
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No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.
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AF6 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE

If new modules were installed prior to the DTC (diagnostic trouble code) being set, the module configuration can be incorrectly set during the PMI (programmable module installation) or the PMI (programmable module installation) may not have been carried out.

- Check the vehicle service history for recent service actions related to the IPC (instrument panel cluster) and the module in question (ACM (audio front control module) , DSP (audio digital signal processing module)) setting the DTC (diagnostic trouble code) . If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?