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1999 FORD Mustang OEM Service and Repair Workshop Manual

Go to manual page

- TCU (telematic control unit module)

AQ1 CLEAR THE DTC (DIAGNOSTIC TROUBLE CODE) AND RECHECK THE SYSTEM

- Ignition ON.
- Using a diagnostic scan tool, clear the TCU (telematic control unit module) DTC (diagnostic trouble code) .
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the TCU (telematic control unit module) self-test.

Is the DTC (diagnostic trouble code) still present?

Yes	GO to AQ2

No	The repair is complete.

AQ2 PROGRAM THE TCU (TELEMATIC CONTROL UNIT MODULE)

- Corrupt module configuration

Diagnostic steps are not provided for this symptom or DTC. REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

PINPOINT TEST AS : APIM (SYNC MODULE) LOST COMMUNICATION TO A MODULE

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
APIM (SYNC module) U0121:00	Lost Communication With Anti-Lock Brake System (ABS) Control Module 'A': No Sub Type Information	Sets in continuous memory when the APIM (SYNC module) detects network messages are missing from the ABS (anti-lock brake system) module for more than 5 seconds.
APIM (SYNC module) U0140:00	Lost Communication With Body Control Module: No Sub Type Information	Sets in continuous memory when the APIM (SYNC module) detects network messages are missing from the BCM (body control module) for more than 5 seconds.
APIM (SYNC module) U0151:00	Lost Communication With Restraints Control Module: No Sub Type Information	Sets in continuous memory when the APIM (SYNC module) detects messages from the RCM (restraints control module) are missing for more than 5 seconds.
APIM (SYNC module) U0155:00	Lost Communication With Instrument Panel Cluster (IPC) Control Module: No Sub Type Information	Sets in continuous memory when the APIM (SYNC module) detects network messages are missing from the IPC (instrument panel cluster) for more than 5 seconds.
APIM (SYNC module) U0159:00	Lost Communication With Parking Assist Control Module 'A': No Sub Type Information	Set in continuous memory when the APIM (SYNC module) detects parking aid network messages are missing from the IPMA (image processing module A) for more than 5 seconds.

APIM (SYNC module) U0212:00	Lost Communication With Steering Column Control Module: No Sub Type Information	Sets in continuous memory when the APIM (SYNC module) detects network messages are missing from the SCCM (steering column control module) / SASM (steering angle sensor module) for more than 5 seconds.
APIM (SYNC module) U0238:00	Lost Communication With Digital Audio Control Module 'D': No Sub Type Information	Sets in continuous memory when the APIM (SYNC module) detects network messages are missing from the DSP (audio digital signal processing module) for more than 5 seconds.
APIM (SYNC module) U024B:00	Lost Communication with Seat Control Module 'G': No Sub Type Information	Sets in continuous memory when the APIM (SYNC module) detects network messages are missing from the SCMG (driver multi-contour seat module) for more than 5 seconds.
APIM (SYNC module) U024C:00	Lost Communication with Seat Control Module 'H': No Sub Type Information	Sets in continuous memory when the APIM (SYNC module) detects network messages are missing from the SCMH (passenger multi-contour seat module) for more than 5 seconds.
APIM (SYNC module) U0293:00	Lost Communication With Hybrid/EV Powertrain Control Module 'A': No Sub Type Information	Sets in continuous memory when the APIM (SYNC module) detects network messages are missing from the SOBDMC (secondary on-board diagnostic control module C) for more than 5 seconds.
APIM (SYNC module) U3000:88	Control Module: Bus Off	The module could not communicate on the network at a point in time. The fault is not currently present since the module had to communicate with the diagnostic scan tool to report this DTC (diagnostic trouble code) .

Possible Sources

- Communication from sending module concern
- Intermittent CAN (controller area network) failure concern

COMPLETE THE FDRS GUIDED ROUTINE

- **NOTE**

  This procedure must be completed using FDRS. Do not clear DTCs until the FDRS procedure has completed. To complete the diagnosis, navigate to the FDRS Guided Routine tab and carry out the procedure SYNC Touchscreen/Information and Entertainment Display .

PINPOINT TEST AU : APIM (SYNC MODULE) CONFIGURATION

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
APIM (SYNC module) B156D:54	TCU Customer Connectivity Settings Synchronization With HMI: Missing Calibration	Sets due to an incomplete or incorrect APIM (SYNC module) PMI (programmable module installation) .
APIM (SYNC module) B156D:89	TCU Customer Connectivity Settings Synchronization With HMI: Data Transfer Failure	Sets due to an incomplete or incorrect APIM (SYNC module) PMI (programmable module installation) .
APIM (SYNC module) B15EB:57	Consumer Apps: Invalid/Incompatible Software Component	Sets due to an incomplete or incorrect APIM (SYNC module) PMI (programmable module installation) .
APIM (SYNC module) U0121:55	Lost Communication With Anti-Lock Brake System (ABS) Control Module 'A': Not Configured	Sets due to an incomplete or incorrect APIM (SYNC module) PMI (programmable module installation) .
APIM (SYNC module) U2017:45	Control Module Software #2: Program Memory Failure	Sets due to an incomplete or incorrect APIM (SYNC module) PMI (programmable module installation) .
APIM (SYNC module) U2017:51	Control Module Software #2: Not Programmed	Sets due to an incomplete or incorrect APIM (SYNC module) PMI (programmable module installation) .

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
APIM (SYNC module) U3000:04	Control Module: System Internal Failures	Sets when the APIM (SYNC module) detects an internal fault.
APIM (SYNC module) U3000:05	Control Module: System Programming Failures	Sets when the APIM (SYNC module) detects an internal fault.
APIM (SYNC module) U3000:09	Control Module: Component Failures	Sets when the APIM (SYNC module) detects an internal fault.
APIM (SYNC module) U3000:41	Control Module: General Checksum Failure	Sets when the APIM (SYNC module) detects an internal fault.
APIM (SYNC module) U3000:43	Control Module: Special Memory Failure	Sets when the APIM (SYNC module) detects an internal fault.

Possible Sources
- Corrupt module firmware

COMPLETE THE FDRS GUIDED ROUTINE

- **NOTE**

  This procedure must be completed using FDRS. Do not clear DTCs until the FDRS procedure has completed. To complete the diagnosis, navigate to the FDRS Guided Routine tab and carry out the procedure SYNC Touchscreen/Information and Entertainment Display .

It may take up to 20 seconds for the system to enter bezel diagnostics mode.

Vehicles with an audio control panel	Simultaneously press and hold the on/off button and the seek down button until the bezel diagnostics mode is entered. The Speaker Walk-Around Test begins and the display indicates each speaker as it is tested.
Vehicles without an audio control panel	Simultaneously press and hold the stering wheel switch seek left button and the steering wheel switch volume down button until the bezel diagnostics mode is entered. The Speaker Walk-Around Test begins and the display indicates each speaker as it is tested.

3.

> **NOTE**
>
> Some selections listed below may not be available for the vehicle being tested. Selections are vehicle and option dependent.

Once the Speaker Walk-Around Test (All Speaker Test) is complete, the following information is available:

Menu	Submenu
APIM Diagnostics	- Part Numbers - Software Versions - Configuration Status - Location Information - Tones Test - Touchscreen Activation Test - Display Test Pattern - RGB Pixel Test - IVSU Versions - Exit Diagnostics
AHU Diagnostics (refers to the ACM (audio front control module))	- AHU Part Numbers - Radio Signal Strength - Speaker Walk-Around Test - Exit Diagnostics

	- AP Bootloader Part Number : - AP Recovery Part Number : - ESN : - Application Part Numbers - Ram Usage : - Disk Usage - Processor Usage - Ford Cloud & Provisioning Status - View Active Fauults - View Confirmed DTCs
Testing Settings	- Theme: - Screen Size - Enable TestSettings - Enable Data Conntectivity - Reticle - Error Rectangles - Enable State Machine Logging - Enable Debug Logging - Show performance overlay - HMI Log Filter: - Persist QT5 log settings - Enable GNSS Sensor Logging - Enable HIP Logging - Sky View Message - Software Version - Calibrate - Satellite Position - Satellite Signal - Satellite Signal History - Location Diagnostics - Remove Navigation Fault - Clear DR calib - Enable Voice Debug Popup

	- bbRev: - hdecRev: - rfRev: - splRev: - maxSmf: - maxTmix: - maxSptfl: - maxTwnow: - Capabilities: - currentBitRateIP: - internalHttpErrorCode: - internalHttpErrorString: - sessionState: - lastSuccessfulAPICallTimeStamp: - LastSuccessfulCDNCallTimeStamp: - networkAvailableStstus: - numberOfHTTPError: - lastHTTPErrorTimeStamp: - lastHTTPErrorRequest:
Exit Diagnostics	- Exit Diagnostics

4. To exit the bezel diagnostics, press the on/off button or select "Exit Diagnostics."

- 40Hz Sample

  (https://www.fordservicecontent.com/ford_content/videos/workshopmanual/40HzTest.mp3)