Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2017 FORD Kuga OEM Service and Repair Workshop Manual

Go to manual page

considered before an update is started. The GWM (gateway module A) is aware of the length of time required to update a given module and compares this against the battery state of charge. If it determines that the battery state of charge is not high enough to support the update, the update is cancelled. Other preconditions that must be met before an OTA update is installed. The PTS (Professional Technician System) software update dashboard displays the preconditions applicable to your vehicle. The preconditions can include but are not limited to, the following:

- Electronic Steering Column Lock (ESCL) is engaged
- Steering tension torque, no torque is applied to the steering wheel
- A diagnostic self-test is not active
- No Charging faults are reported
- Ignition status, Ignition Off
- Ignition status, Accessory functionality Off
- The battery voltage is within the required range
- The vehicle is stopped
- PRNDL in park
- Parking brake is applied
- Charging is not in Progress (hybrid or EV high voltage battery charging/LIII)
- The hazard indicators are off
- The alarm is not sounding
- The engine is not running
- All doors and liftgate are closed
- The parking lights are off
- Limp home mode is not active
- Illuminated exit is not active
- The brake pedal is not being pressed
- The battery voltage is within the required range
- The windows are closed and not operating

Scheduled updates are required for downloads to modules where the module data is erased before the new data can be uploaded (Erase and replace method). These updates need to be scheduled as the vehicle is disabled (INHIBITED) for up to 45 minutes while the update takes place. When software updates are available, the vehicle is informed and the download begins in the background. Once the download has completed, a schedule installation update icon will appear for the user to schedule a time for the installation to take place. Once scheduled, the user is informed the installation is taking place and the vehicle is disabled while the update installation takes place. On the next use of the vehicle, details of the update can be viewed on the vehicle display screen.

Installation at the Scheduled Time

Note: An internet network connection is not required during the installation of the update to the target module.

- The vehicle checks the ignition status, the ignition must be off
- The vehicle display screen will display a 2 minute countdown timer with the option to cancel the update
- The user is given the opportunity to reschedule the update
    - If the user chooses to cancel the update, it will postpone until the next scheduled time.
    - Once the update starts the use must wait until the update is complete.
- The vehicle checks that all preconditions are met.
    - If any preconditions are not met the installation process is postponed until the next scheduled time.
    - If all preconditions are met the installation process starts and the vehicle is disabled for the time it takes for the installation to complete (up to 45 minutes).
- The update begins, the user will see the update progress displayed on the vehicle display screen and is informed the vehicle is disabled while the update installation takes place. The vehicle may be disabled for up to 45 minutes. On the next use of the vehicle, details of the update installation carried out can be viewed on the vehicle touchscreen.

Non Scheduled Updates

Some updates are not required to be scheduled, These updates will install in the background when all preconditions are met, without the requirement to disable (INHIBIT) the vehicle for a period of time. These are commonly updates to modules that do not require the module data to be erased before the update can be installed (ABA swap configuration).

The user has the choice to select whether to allow the updates to happen automatically or whether to manually choose when the updates take place.

Update Now

module) SYNC software files, which are passed through the GWM (gateway module A) to the APIM (SYNC module) . Updates to the APIM (SYNC module) module are driven by the GWM (gateway module A) .

Internet Network Connection

The vehicle has 2 sources of connection to the Ford data cloud, vehicle WiFi and vehicle cellular data. The vehicle is required to have a minimum of 3 bars signal at the location where the vehicle is parked over night, to make sure OTA updates are completed without delays.

OTA Update Subtypes

There are a number of OTA update sub types as described below.

- Simple: These are update releases that generally affect a single module.
- Coordinated: These are update releases that may affect a number of modules and requires each module to be at a specific version.
- Non Coordinated: update may include multiple modules in each update, however does not require all modules to be at a specific software version.

Cancellation of Ongoing OTA Updates

The customer does not have the direct ability to cancel an OTA system software update. There are a few reasons why an update may be canceled.

- Ford Motor Company can cancel the update at any time before the installation of the update is complete.
- If the automatic updates setting has been toggled to OFF, with the vehicle connectivity selection still enabled, the update will expire after a period of time if a manual update icon is not available from the vehicle display screen determined based on currently installed software.
- A master reset can cancel an ongoing update.

Module Over the Air Programming Capability Chart

Module Name	Over the Air Update Programing Capable (Yes/N0)	Module Update Method
ABS (anti-lock brake system) module	Yes	ABA swap
ACCM (air conditioning control module)	Yes	ABA swap
ACM (audio front control module)	No	N/A
APIM (SYNC module)	Yes	ABA swap

IPMA (image processing module A) - ADAS	Yes	ABA swap
Lithium-Ion Storage Battery (LISB)	No	N/A
OBCC (Off-Board Charger Controller)	Yes	ABA swap
OCS (occupant classification system) module	No	N/A
PACM (pedestrian alert control module)	Yes	Erase and Replace
PCM (powertrain control module)	Yes	ABA swap
PCM (powertrain control module) (Diesel)	No	N/A
PDM (passenger door module)	Yes	Erase and Replace
PSCM (power steering control module)	Yes	Erase and Replace
RCM (restraints control module)	Yes	Erase and Replace
RFA (remote function actuator) (Bluetooth Low Energy Module)	Yes	ABA swap
RGTM (rear gate trunk module)	Yes	Erase and Replace
RTM (radio transceiver module)	Yes	Erase and Replace
SASM (steering angle sensor module)	No	N/A
SCCM (steering column control module)	Yes	Erase and Replace
SCMG (driver multi-contour seat module)	Yes	Erase and Replace

air update activity on the vehicle and a Currently In Process dashboard. The calendar contains but is not limited to the information listed below.

- The update ID
- The data and time each update was attempted
- The module(s) receiving the update
- If any DTCs were cleared after the update
- The connectivity methods allowed for each update
- Release notes for each of the updates
- A list of software updates or attempts
- It an errors occurred with the update
- The number of retries that were attempted if an update failed to download to a module
- The software level currently installed in the ECU (electronic control unit)
- The software that was in the module prior to the update

The Currently In Process dashboard contains but is not limited to the information listed below.

- The update ID
- The data the update was released from the cloud
- The ID of the TSB (Technical Service Bulletin) , FSA (Field Service Action) or SSM (special service message) if the update is related to one of these actions
- The module(s) receiving the update
- The connectivity methods allowed for each update
- The download status from the cloud to the GWM (gateway module A)
- The type of update being installed (bug fix, security, new feature, etc)
- The status of the download to the GWM (gateway module A) or the installation from the GWM (gateway module A) to the module.
- If the vehicle needs to be inhibited during installation
- Module software part number

Updating Modules Using The Diagnostic Scan Tool

Modules with an Ethernet network connection can be updated through the diagnostic scan tool, using the USB (universal serial bus) flash method. A 32 GB USB (universal serial bus) drive formatted to exFAT can be used to transfer software to the Ethernet connected modules. Connect the appropriate exFAT format USB (universal serial bus) drive to the diagnostic scan tool and follow the on screen prompts to complete the software download.

Component Description

Telematic Control Module

The TCU (telematic control unit module) receives the software update data from the Ford data cloud and passes it through the Ethernet network to the gateway module for distribution to the receiving module(s).

The TCU (telematic control unit module) requires PMI (programmable module installation) when replaced.

Gateway Module

The GWM (gateway module A) serves as the programming manager for over the air software updates completed for target modules. Depending on the modules involved the gateway module may store the update or just relay the update to the target module. The gateway module acts as a router or hub for the Ethernet networks and is also connected to the vehicle CAN (controller area network) . Software updates can be deployed from the GWM (gateway module A) to target modules using either CAN (controller area network) or Ethernet networks.

The GWM (gateway module A) requires PMI (programmable module installation) when replaced.

Erase and Replace Modules

Many modules on the vehicle need to be erased before new data can be installed. The software installation process can take up to 40 minutes to complete. Updates to these modules need to be scheduled and specific vehicle conditions must be met for the update to be initiated.

ABA Swap Configuration Modules

For modules that have an ABA swap configuration the update is applied to the B portion of the module while the vehicle continues to reference the data in the A portion. The module will reference the new data once a key cycle has completed.

Condition	Actions
The vehicle touchscreen displays Vehicle Inhibited	GO to Pinpoint Test C
The vehicle touchscreen displays The vehicle is not drivable	GO to Pinpoint Test C
An OTA fault message displays on the touch screen or the FordPass or Lincoln Way apps and the OTA updates have not installed.	GO to Pinpoint Test A
OTA Updates have not installed or are delayed beyond 8 calendar days without a fault message displaying on the touch screen or in the FordPass or Lincoln Way apps.	GO to Pinpoint Test B

Pinpoint Tests

PINPOINT TEST A : AN OTA FAULT MESSAGE DISPLAYS ON THE TOUCH SCREEN OR THE FORDPASS OR LINCOLN WAY APPS AND THE OTA UPDATES HAVE NOT INSTALLED

Normal Operation and Fault Conditions

Vehicle access to a WiFi source - A WiFi hotspot with a minimum of 3 bars signal strength is strongly recommended at the location where the vehicle is parked over night, to make sure OTA updates are completed without delays. **To avoid incorrect replacement of the Gateway Module or other OTA system components, the signal strength must be verified with the customer prior to repair when OTA update concerns are being reported.**

REFER to: Module Configuration - System Operation and Component Description(418-01B Module Configuration - Vehicles With: Over-the-Air (OTA) Programming, Description and Operation).

REFER to: Module Configuration - System Operation and Component Description (418-01B Module Configuration - Vehicles With: Over-the-Air (OTA) Programming, Description and Operation).

Possible Sources

- Automatic update feature disabled
- Preconditions not met
- Poor Wi-Fi reception
- Poor cellular reception
- TCU (telematic control unit module) reception concern
- TCU (telematic control unit module)

Visual Inspection and Pre-checks

- Review the PTS (Professional Technician System) Connected Vehicle Tab, software update dashboard, Service Action Column. If a service action is listed, complete the service action before starting this test.

- Click on the icon in Troubleshooting Recommendations column of the row displaying the software update has failed.
- Read the instructions displayed in the pop up window associated with the concern.

Is the following message displayed? Software update has failed, vehicle service intervention is required to resolve the condition. Follow proper workshop manual diagnostics found in OTA 418-01B to resolve the concern.

Yes	GO to A3

No	FOLLOW the Connected Vehicle Dashboard on screen instructions to resolve the concern.

A3 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the self-test for the TCU (telematic control unit module) , GWM (gateway module A) and the modules intended to receive the OTA update.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the appropriate Workshop Manual Section to diagnose the Diagnostic Trouble Codes (DTCs).

No	GO to A4

A4 REVIEW THE TELEMATIC CONTROL MODULE AUTHORIZATION STATE

- View the following TCU (telematic control unit module) OTA Parameter Identifications (PIDs): Access the TCU (telematic control unit module) and monitor the AUTHMODE (Authorization Status) PID (parameter identification)

Is the authorization state Factory Mode or Unprovisioned?

Yes	GO to A6

No	GO to A5

- Wait 5 minutes.
- View the following TCU (telematic control unit module) OTA Parameter Identifications (PIDs)
- Access the TCU (telematic control unit module) and monitor the AUTHMODE (Authorization Status) PID (parameter identification)

Does the authorization state PID (parameter identification) still indicate Unprovisioned?

Yes	INSTALL a new TCU (telematic control unit module) , REFER to: Telematics Control Unit (TCU) Module (415-00 Information and Entertainment System - General Information, Removal and Installation).

No	GO to A7

A7 VERIFY THE AUTHORIZATION STATUS OF THE GATEWAY MODULE AND OTHER MODULES

- View the following OTA Parameter Identifications (PIDs) to identify the module authorization status.
  - An unprovisioned status in any of the modules listed below may inhibit various web services.
- Access the GWM (gateway module A) and monitor the AUTHMODE (Authorization Status) PID (parameter identification)
  Access the APIM (SYNC module) and monitor the AUTHMODE (Authorization Status) PID (parameter identification)
  Access the RFA (remote function actuator) and monitor the BLEM_PROV_STAT (Bluetooth Low Energy Module Provisioning Status) PID (parameter identification)
  Access the OBCC (Off-Board Charger Controller) and monitor the AUTHMODE (Authorization Status) PID (parameter identification)

Does the authorization state indicate unprovisioned for the GWM, APIM, RFA or OBCC?

Yes	GO to A8

No	GO to A9

A8 COMPLETE CONNECTIVITY AUTHORIZATIONS

- Using a diagnostic scan tool carry out the PMI (programmable module installation) procedure for the module(s) which are not authorized (GWM, APIM, RFA, OBCC).
- Park the vehicle away from buildings with a clear view of the sky.
- Ignition OFF.