SECTION : 413-08 Interior Command Centre

VEHICLE APPLICATION : 2008.0 Falcon

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DESCRIPTION AND OPERATION

Interior Command Centre

The Interior Command Centre includes the following electronic modules:

- Front Display Interface Module, FDIM (either a 5.8” Fixed Segment/Dot Matrix monochrome (black and white) LCD or 7” Full colour TFT Display)
- Audio Control Module, ACM
- Bluetooth Phone Module, BPM (where fitted). This is a separately serviceable item and should not be returned with the ICC.
- Front Fascia with buttons for audio, climate control, auxiliary functions and ICC operation

Together these modules provide audio, phone, climate control and auxiliary controls (i.e. Door locks, courtesy lamps, interior lamps) displayed in a centralised area.

The ACM and BPM both have their own sections in the workshop manual, therefore it’s mainly the FDIM and Front fascia that is referred to in this ICC section.

The Front Fascia consists of the visible ICC Fascia, including buttons and directly mounted Printed Circuit Boards (PCB’s) that contain the Cabin Temperature sensor (CTS), rubber switch membrane, interconnection wiring harness and button illumination. The Front Fascia is electrically connected to the FDIM and requires an FDIM to function.

The FDIM is available in both High Series TFT and Low Series Monochrome LCD.

1. LCD for low series:

- 5.8” Fixed Segment/Dot Matrix LCD
- Uses preset symbols (fixed segment area) and dynamic text (in dot matrix area) to display information

2. TFT for high series:

- 7” Full colour TFT Display
- Reconfigurable screen settings
- Video input for Sat-Nav and Reversing Camera, as well as preset screens

For further information regarding the function of each button in the ICC, please refer to the Owners Guide.

ICC Handling and Storage

1. ICC must be handled appropriately. Grab points are shown in illustrations.
2. Warranty is void if ICC is dropped, handled roughly or treated outside of these guidelines.
3. The ICC must not to be tilted beyond 90 degrees from upright. At no stage can the ICC be shocked or excessively vibrated. Such action may damage the Audio mechanism. Warranty will be void if these conditions are not met.
4. The ICC contains many delicate mechanical and electrical components. Special care must be taken. The following are important:
   - DO NOT scratch the Class A (Customer visible) appearance surfaces.
   - DO NOT apply excess pressure to the screen surface at any time.
   - DO NOT apply force in excess of 10 kg to any appearance surface of the ICC.
   - DO NOT touch the pins of the Self-aligning connector at the rear of the Audio Module.
   - DO NOT touch the Cabin Temperature Sensor (refer illustration).
   - DO NOT apply pressure to any of the buttons, knobs or buttons exceeding 5 kg.
   - AVOID all contact with dirt, dust, metal flakes, metal shavings.
5. The ICC is sensitive to Electro Static Discharge. Avoid all contact with static electricity and all precautions must be undertaken to ensure adequate grounding of the repair technician and the ICC Module outside of the vehicle environment to avoid ESD damage.
6. Avoid all contact with any liquids, soft drinks, water, hot drinks, alcohol, etc. ICC electronic components will be damaged by any contact with liquids.
7. ICC is not to be disassembled except for recognised service items.
8. ICC storage temperature is never to exceed the range -30°C to +85°C.
9. When refitted to the car, only approved mounting screws may be used to the specified torques.
10. **All mating connectors are to be appropriately aligned prior to fitment back into the vehicle. Check that the white housing of the main Audio Self-aligning connector (vehicle-side) is reset outwards (by pulling the white connector block rearwards in the car) prior to loading of the ICC into the Instrument Panel. Failure to do so may result in permanent damage to both the vehicle-side connector and the Audio Module.**

DIAGNOSIS AND TESTING

Interior Command Centre

Principles Operation

The ICC (Interior Command Centre) functions are managed internally by the Front Display Interface Module (FDIM), which interprets user input from the front fascia's buttons and rotary encoder. The user input is then either internally processed by the FDIM and/or sent via the vehicle CAN bus to other modules e.g. ACM, HIM, BEM. Regardless of function, all front fascia buttons can be checked at the FDIM using the WDS.

Generally speaking, Audio related functions are processed by the ACM, Climate control related functions are processed by the HIM, Settings functions are processed by the BEM, Phone functions are processed by the BPM, iPod related functions are handled by the FEM.

This flow of control needs to be understood to correctly diagnose faults with the system. The correct operation of the button should be checked using WDS, transmission of the CAN message can be checked using DTCs as can the validity of the message content (invalid data DTCs). The functionality of receiving module can be checked by following the relevant modules diagnostics.

This checking process usually needs to be done twice for the ICC, as a message sent out from the ICC, to another module, triggers a message sent out from that module to the ICC.

Satellite Navigation control is via the infrared receiver mounted in the forward edge of the Overhead Console. NB Remote control will function if pointed toward the FDIM screen. This is achieved by the signal reflecting off the FDIM screen or windscreen and striking the IR receiver. The video signal also goes directly to the colour screen. When the Satellite Navigation module display is switched on, a video select line is grounded between the Satellite Navigation Module and the Screen module. This then runs the Satellite Navigation Video as the back ground display on the screen and the ICC functions become pop up overlays.

Inspection and Verification

Visual Inspection Chart

Normal Condition	Possible cause of abnormality
All margins even and surfaces flush indicating the interior command centre is fully seated and self-aligning connector is correctly docked.	ICC not fully docked (installed) Not all hardware secured Four yellow clips not engaged Self Aligning connector not reset when ICC installed Object obstructing ICC fitment
Air registers and thumbwheel control operate through full range of movement	Physical damage, foreign body obstruction or damaged movement
Screen and buttons are free of marks and are secure	Physical damage - refer to diagnostics to check correct operation
CD Slot clear of obstruction	Foreign matter present
CTS (Cabin Temperature Sensor) slots free of obstructions	Foreign matter present
CDs load and unload correctly	Foreign matter present or CD mechanism failure - refer to Audio diagnostics, section 415-00
FDIM Screen buttons on and off using the Audio power button	Faulty button / Screen - see ICC diagnostics
Screen updates when pressing buttons	Faulty button / Screen - see ICC diagnostics
CTS draws air through slots in facia	Faulty CTS or obstructed slots/air way
No rattles or abnormal sounds	Unit not secure Four clips not fitted CTS is obstructed Loose components Damaged/Loose air registers

DTC Chart

DTC	Description	Possible Causes	Action
B1342	ECU is Faulted	- ECU failure - Flash ROM checksum failure - EEPROM Checksum Failure	Internal FDIM fault detected, reset DTC and if not cleared replace ICC
U0184	Lost Communication with Radio (ACM)	Loss of communication to Radio (ACM)	Check wiring connection to ACM and ACM operation
U0155	Lost Communication with Instrument Cluster (IC)	Loss of communication to Instrument Cluster (IC)	Check wiring connection to IC and IC operation
U0166	Lost Communication with Heater Interface Module (HIM)	Loss of communication to Heater Interface Module (HIM)	Check wiring connection to HIM and HIM operation
U0140	Lost Communication with Body Control Module (BEM)	Loss of communication to Body Control Module (BEM)	Check wiring connection to BEM and BEM operation
U0197	Lost Communication with Bluetooth Phone Module (BPM)	Loss of communication to Bluetooth Phone Module (BPM)	Check wiring connection to BPM and BPM operation
U0159	Lost Communication with Park Assist Module (PAM)	Loss of communication to Park Assist Module (PAM)	Check wiring connection to PAM and PAM operation
U0245	Lost Communication with Front Entertainment Module (FEM)	Loss of communication to Front Entertainment Module (FEM)	Check wiring connection to FEM and FEM operation
U1900	CAN bus Communication Fault	Loss of CAN communication	Check wiring connection and communication to other Electronic Modules
B1318	Battery Voltage Low	Battery voltage less than 9 volts for more than 10 seconds.	Check battery charge
B2840	Cabin Temperature Sensor (CTS) Thermistor circuit failure	The CTS thermistor circuit is open circuit	Check CTS temperature reading and climate control operation
B111F	TFT Thermal Shutdown	TFT too hot	Allow unit to cool
B2922	Auxiliary Button Stuck	Must be stuck for more than 120 seconds when ignition turned on. Buttons must not be pressed during the Self-Test	Check for foreign matter lodged in button, broken buttons, causing stuck button. Check operation of buttons
B2923	Climate Control Button Stuck	Must be stuck for more than 120 seconds when ignition turned on. Buttons must not be pressed during the Self-Test	Check for foreign matter lodged in button, broken buttons, causing stuck button. Check operation of buttons
B2924	Audio Button Stuck	Must be stuck for more than 120 seconds when ignition turned on. Buttons must not be pressed during the Self-Test	Check for foreign matter lodged in button, broken buttons, causing stuck button. Check operation of buttons
C1137	RTC Oscillator Failure	RTC Oscillator has Failed	Check clock operation
B2477	Module Configuration Failure	VIN not programmed	Program VIN number into FDIM
P062F	EEPROM Checksum Failure	EEPROM has been corrupted or damaged	Internal FDIM fault detected, reset DTC and if not cleared replace ICC
B2207	ROM Checksum Failure	ROM has been corrupted or damaged	Internal FDIM fault detected, reset DTC and if not cleared replace ICC

PID Chart

Command	Description
PRE_1_SW	Preset 1 Switch
PRE_2_SW	Preset 2 Switch
PRE_3_SW	Preset 3 Switch
PRE_4_SW	Preset 4 Switch
PRE_5_SW	Preset 5 Switch
PRE_6_SW	Preset 6 Switch
AC_SEL_SW	Air Conditioning Off Switch
RECIRC#	Air Recirculation Switch
AC_SW#	Air Conditioning Switch
AUTO_SW#	Auto Climate Control
HAZ_SW#	Hazard Switch
FRNT_DMIST_SW	Front Screen Defrost Switch
AIRDIST_ST#	Air Conditioning Mode Switch
REAR_DEM_SW	Rear Defrost (heated backlight) Switch
PTEMP_DOWN	Passenger Temperature Down Switch
PTEMOP_INCR	Passenger Temperature Up Switch
FAN_DECR_SW	Climate Control Fan Down Switch
BLOWER_UP	Climate Control Fan Up Switch
DTEMP_DECR	Driver Temperature Decrement
DTEMP_INCR	Driver Temperature Increment
EJECT_SW_FDM	CD Eject Switch
LOAD_SW	CD Load Switch
SCAN_SW	Scan / Auto Store Switch
CD_AUX_SW	CD / Auxiliary Switch
AM_FM_SW	FM / AM Switch
BACK_HOME_SW	Back / Home Switch
OK_SW_APIM	OK Switch
MENU_SW_FDM	Menu Switch
AUDIO_OFF_SW	Audio On / Off Switch
SEEK_UP_SW	Seek Up Switch
SEEK_DOWN_SW	Seek Down Switch
CTS_UNLOCK_RKE	Central Door Unlock Switch
CTS_LOCK_RKE	Central Door Lock Switch
TRAC_SW	Traction Control or Dynamic Stability Control Switch
DOMELMP_SW	Dome Lamp Switch
ROTVOLENCD_RT	Rotary Encoder Right
ROTVOLENCD_LFT	Rotary Encoder Left
INTACTTEMP	Interior Cabin Temperature
LCD_SEG_DISPL#	LCD Segment Display
ACT_VIDEO_INP#	Video Source
ACT_VIDEO_INP#	Camera Display Active
ACT_VIDEO_INP#	Navigation Display Active

Symptom Chart

Condition	Possible Sources	Action
ICC does not turn on.	* No Accessory or ignition information from the BEM. * ICC fault. * CAN fault * BEM fault.	* Refer to service procedure ICC does not turn on (Test A). * Refer to ignition diagnostics section. * Refer to BEM diagnostics.
Illumination not working	* Wiring fault * Instrument Cluster fault * ICC fault * CAN fault	* Refer to service procedure Illumination fault. (Test B).
Audio button not working	* ICC fault * CAN fault * ACM fault	* Refer to service procedure Audio button not working (Test C). * Refer to CAN Diagnostics. * Refer to ACM Diagnostics 415-00.
Climate control button not working	* ICC fault * CAN fault * HIM fault	* Refer to service procedure Climate control button not working (Test D). * Refer to CAN Diagnostics. * Refer to HIM Diagnostics.
Auxiliary button not working	* ICC fault * CAN fault * Wiring fault * Traction / DSC module fault * BEM fault	* Refer to service procedure Auxiliary button fault (Test E). * Refer to CAN Diagnostics. * Refer to Traction / DSC diagnostics. * Refer to BEM diagnostics.
ICC button not working	* ICC fault	* Refer to service procedure ICC button fault (Test F).
Visual Damage	* ICC fault	* Refer to service procedure ICC visual damage (Test G).
Display not working	* ICC fault * Wiring fault * Instrument Cluster fault * BEM fault * Screen ‘Off’ option set	* Refer to service procedure ICC display fault (Test H). * Refer to Cluster diagnostics.
Noisy	* Not fitted/installed correctly * CTS obstructed/faulty * ICC fault	* Refer to Inspection and Verification in this section. * Refer to service procedure Unusual noise from ICC (Test I).
Camera or Navigation display not working	* ICC fault * Remote control fault * Navigation module fault * Camera fault * Wiring fault	* Refer to symptom navigation not working in Audio Section 415-00. * Refer to Navigation diagnostics 413-07. * Refer to service procedure ICC display fault (Test H).

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Condition	Possible Sources	Action
Air registers not working	* ICC fault	* Refer to Inspection and Verification in this section. * Refer to service procedure Faulty air register (Test J).
Climate control shows flashing “recirc air” symbol or continuous “recirc air” symbol with no other climate control symbol displayed.	* Wiring Fault * CAN fault * HIM Fault	* Refer to CAN diagnostics. * Refer to Climate Control diagnostics.
Outside Temperature not working	* Wiring Fault * CAN fault * HIM Fault	* Refer to CAN diagnostics. * Refer to Climate Control diagnostics.

Service Procedures

Service Procedure	Description
ICC does not turn on (Test A)	Tests that the ICC operates
Illumination fault (Test B)	Identifies an illumination fault.
Audio button not working (Test C)	Tests the ICC audio buttons for correct operation and identifies a fault. Audio buttons are: • Six (6) piano keys, • Eject switch • Load switch • Scan / AS switch • CD/AUX switch • FM/AM switch • Audio on/off switch • Seek down switch • Seek up switch
Climate control button not working (Test D)	Tests the ICC climate buttons for correct operation and identifies a fault. Climate buttons are: • OFF switch • Recirculate switch • A/C switch • AUTO switch • Front demist switch • Air distribution mode switch • Heated rear window switch • Driver temperature up / down switch • Blower up / down switch • Passenger temperature up / down switch
Auxiliary button fault (Test E)	Tests the ICC auxiliary buttons for correct operation and identifies a fault. Auxiliary buttons are: • Hazard switch • Door unlock switch • Door lock switch • DSC / Traction Control switch • Dome lamp switch
ICC button fault (Test F)	Tests the ICC buttons for correct operation and identifies a fault. ICC buttons are: • BACK switch • OK switch • MENU switch • Rotary encoder
ICC visual damage (Test G)	Visual inspection of ICC for physical damage.
ICC display fault (Test H)	Checks the ICC for correct display operation and identifies a fault.
Unusual noise from ICC (Test I)	Checks for any unusual noises or rattles from the ICC.
Faulty air register (Test J)	Tests the air registers for correct operation.

TEST A: ICC DOES NOT TURN ON

Using the IDS data logger function activate the following acronyms.

AUDIO_OFF_SW, BACK_HOME_SW, OK_SW_APIM, MENU_SW_FDM, ROTVOLENCD_RT, ROTVOLENCD_LFT

Test Step		Result /Action to Take	Acronyms
A1	**Press the ICC hazard switch:** • Do the hazards operate?	**Yes** Go to A4. **No** Go to A2.	
A2	**Remove the ICC cap and the FDIM connector.** Refer to the Removal and Installation section. **Measure the battery voltage at the FDIM battery pin:** • Does the battery voltage appear on the FDIM battery pin?	**Yes** Go to A3. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Note that if the battery voltage is less than 10 volts the FDIM will not operate.	
A3	**Measure the resistance of the FDIM connector ground pin to ground:** • Does the FDIM ground pin connect to ground?	**Yes** Go to A4. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Check vehicle wiring, particularly grounding that grounding points have been made.	
A4	**Turn the ignition switch to the accessories position:** • Is the FDIM clock and audio surround displayed?	**Yes** Go to A5. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Check vehicle wiring, particularly grounding that grounding points have been made. Check CAN diagnostics.	
A5	**Turn the ignition switch to the ignition position:** • Is the FDIM climate control surround displayed?	**Yes** No fault with ICC. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Check vehicle wiring, particularly grounding that grounding points have been made. Check CAN diagnostics.	

TEST B: BUTTON ILLUMINATION FAULT

Test Step		Result /Action to Take	Acronyms
B1	**Turn the vehicle headlights on:** • Are the headlights on?	**Yes** Go to B2. **No** Repair faulty lighting system.	
B2	**Set the interior illumination to 100% in the Instrument Cluster.** **Check for illumination of all the ICC buttons:** • Do all the buttons illuminate?	**Yes** No fault. ICC button illumination functioning correctly. **No** Go to B3.	
B3	**Check for illumination of all the ICC buttons:** • Are some of the ICC buttons illuminated?	**Yes** Replace ICC and retest. **No** Go to B4.	
B4	**Check for interior illumination of the vehicle:** • Does the interior illumination (PRNDL, power window switches (High Series only –G6E and G6ET) of the vehicle operate?	**Yes** Go to B5. **No** 1.Go to Cluster Diagnostics 413-01 (Functional Test → Illumination Test) as the Instrument Cluster controls the ICC illumination. 2.Repair faulty vehicle illumination wiring.	
B5	**Remove the ICC cap and the FDIM connector.** Refer to Installation and Removal section. **Measure the battery voltage at the FDIM connector illumination positive pin.** • With the headlights on does the battery voltage appear on the illumination positive pin?	**Yes** Go to B6. **No** Repair faulty vehicle illumination wiring, check fuse.	
B6	**Measure the resistance of the FDIM connector illumination negative pin to ground.** • With the headlights on and the interior illumination set to 100% in the Instrument Cluster does the illumination negative pin connect to ground?	**Yes** Replace ICC and retest. **No** 1.Check vehicle wiring, particularly that grounding points have been made. 2.Repair faulty vehicle illumination wiring. 3.Go to Cluster Diagnostics 413-01 (Functional Test → Illumination Test) as the Instrument Cluster controls the ICC illumination.	

TEST C: AUDIO BUTTON NOT WORKING

Using the IDS data logger function activate the following acronyms.

PRE_1_SW, PRE_2_SW, PRE_3_SW, PRE_4_SW, PRE_5_SW, PRE_6_SW, EJECT_SW_FDM, LOAD_SW, SCAN_SW, CD_AUD_SW, AM_FM_SW, AUDIO_OFF_SW, SEEK_UP_SW, SEEK_DOWN_SW

Test Step		Result /Action to Take	Acronyms
C1	**Turn the ignition switch to the accessories position:** • Is the FDIM clock and audio surround displayed?	**Yes** Go to C2. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Note that if the battery voltage is less than 10 volts the FDIM will not operate.	
C2	**Turn the ignition switch to the ignition position:** • Is the FDIM climate information displayed?	**Yes** Go to C3. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Note that if the battery voltage is less than 10 volts the FDIM will not operate.	
C3	**Check PIDs using data logger.** **Check that each audio button operates:** • Does each button operate?	**Yes** No fault with ICC. Refer to Audio Diagnostics 415-00. **No** Replace ICC and retest.	PRE_1_SW, PRE_2_SW, PRE_3_SW, PRE_4_SW, PRE_5_SW, PRE_6_SW, EJECT_SW_FDM, LOAD_SW, SCAN_SW, CD_AUD_SW, AM_FM_SW, AUDIO_OFF_SW, SEEK_UP_SW, SEEK_DOWN_SW

TEST D: CLIMATE CONTROL BUTTON NOT WORKING

Using the IDS data logger function activate the following acronyms.

AC_SEL_SW, RECIRC#, AC_SW#, AUTO_SW#, FRNT_DMIST_SW, AIRDIST_ST#, REAR_DEM_SW, PTEMP_DOWN, PTEMP_INC, FAN_DECR_SW, BLOWER_UP, DTEMP_DECR, DETEMP_INCR

Test Step		Result /Action to Take	Acronyms
D1	Turn the ignition switch to the accessories position: • Is the FDIM clock and audio surround displayed?	**Yes** Go to D2. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Note that if the battery voltage is less than 10 volts the FDIM will not operate.	
D2	Turn the ignition switch to the ignition position: • Is the FDIM climate control surround displayed?	**Yes** Go to D3. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Note that if the battery voltage is less than 10 volts the FDIM will not operate.	
D3	Check PIDs using data logger. Check that each climate control button operates: • Does each button operate?	**Yes** Go to D4. **No** Replace ICC and retest.	AC_SEL_SW, RECIRC#, AC_SW#, AUTO_SW#, FRNT_DMIST_SW, AIRDIST_ST#, REAR_DEM_SW, PTEMP_DOWN, PTEMP_INC, FAN_DECR_SW, BLOWER_UP, DTEMP_DECR, DETEMP_INCR
D4	Check PIDs using data logger: • Measure the actual interior cabin temperature manually using a thermometer near the cabin temperature sensor grille. Does the Interior Cabin Temperature reading match the actual temperature (within 5 degrees)?	**Yes** No fault with ICC. Refer to HIM Diagnostics. **No** Replace ICC and retest.	INTACTTEMP

TEST E: AUXILIARY BUTTON FAULT

Using the IDS data logger function activate the following acronyms.

HAZ_SW, CTS_UNLOCK_RKE, CTS_LOCK_RKE, TRAC_SW, DOMELMP_SW

Test Step		Result /Action to Take	Acronyms
E1	**Turn the ignition switch to the accessories position:** • Is the FDIM clock and audio surround displayed?	**Yes** Go to E2. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Note that if the battery voltage is less than 10 volts the FDIM will not operate.	
E2	**Turn the ignition switch to the ignition position:** • Is the FDIM climate control surround displayed?	**Yes** Go to E3. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Note that if the battery voltage is less than 10 volts the FDIM will not operate.	
E3	**Check PIDs using data logger.** **Check that each auxiliary button operate:** • Does each button operate?	**Yes** No fault with ICC. If Dome Lamp, Door Lock or Door Unlock switch do not work, refer to BEM diagnostics. If DSC / Traction Control switch does not work, refer to Brake Module diagnostics. If Hazard switch does not work, refer to Instrument Cluster diagnostics. **No** Replace ICC and retest.	HAZ_SW, CTS_UNLOCK_RKE, CTS_LOCK_RKE, TRAC_SW, DOMELMP_SW

TEST F: ICC BUTTON FAULT

Using the IDS data logger function activate the following acronyms.

BACK_HOME_SW, OK_SW_APIM, MENU_SW_FDM, ROTVOLENCD_RT, ROTVOLENCD_LFT

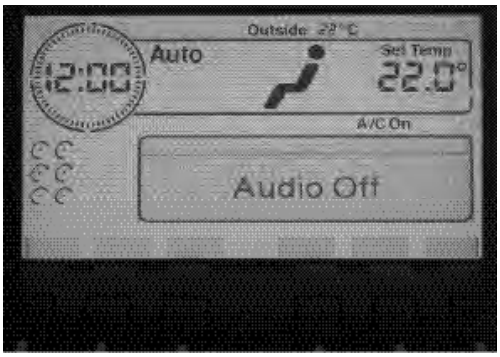
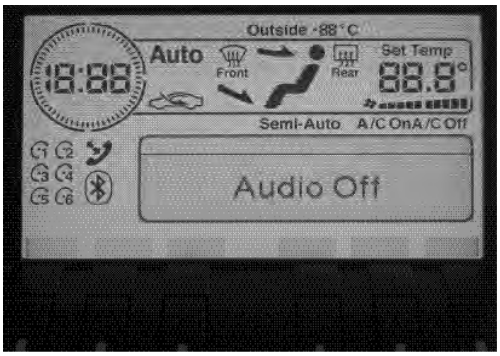
Test Step		Result /Action to Take	Acronyms
F1	**Turn the ignition switch to the accessories position:** • Is the FDIM clock and audio surround displayed?	**Yes** Go to F2. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Note that if the battery voltage is less than 10 volts the FDIM will not operate.	
F2	**Turn the ignition switch to the ignition position:** • Is the FDIM climate control surround displayed?	**Yes** Go to F3. **No** 1. Check Power/Fuse 2. Check ignition switch/circuit 3. Check ignition relay 4. Refer to BEM diagnostics 419-10 Note that if the battery voltage is less than 10 volts the FDIM will not operate.	
F3	**Check PIDs using data logger.** **Check that each ICC button operates:** • Does each button operate?	**Yes** No fault with ICC. **No** Replace ICC and retest.	BACK_HOME_SW, OK_SW_APIM, MENU_SW_FDM, ROTVOLENCD_RT, ROTVOLENCD_LFT

TEST G: ICC VISUAL DAMAGE

Test Step		Result/Action to Take	Acronyms
G1	**Inspect the ICC fascia for the following:** • Scratches • Dints • Defective or peeling paint • Wrong fascia colour • Defective or missing print • Broken mounting points • Defective flashing or over trim • Foreign substance on fascia • Foreign material jammed into CTS slots • Correct insertion of the ICC fascia • CD slot clear of all obstructions • Rattles or unusual sounds	If damage cannot be rectified at the dealership submit a warranty claim. Include a detailed description of ICC damage.	
Test Step		**Result/Action to Take**	**Acronyms**
G2	**Inspect the ICC buttons and knobs for the following:** • Sticking or rubbing knobs • Sticking or stuck buttons • Defective or missing print • Wrong buttons fitted • Scratched or damaged buttons • Loose buttons • Foreign material jammed into button gaps • Foreign substance on buttons • Missing buttons • Wrong coloured buttons fitted • Wrong colour illumination	If damage cannot be rectified at the dealership submit a warranty claim. Include a detailed description of ICC damage.	
Test Step		**Result/Action to Take**	**Acronyms**
G3	**Inspect the ICC display for the following:** • Scratched or damaged display • LCD leakage in display • Protective sheet left on display during production • Wrong colour illumination • Foreign substance on the display	If damage cannot be rectified at the dealership submit a warranty claim. Include a detailed description of ICC damage.	
Test Step		**Result/Action to Take**	**Acronyms**
G4	**Air Registers** • Refer to air register not working symptom in the symptom chart.		

TEST H (LCD): LCD DISPLAY FAULT

Using the IDS function run the Screen Display test and confirm that the following displays are shown:

Test Step		Result/Action to Take	Acronyms
H1	**Has DTC U0155 (Lost Communication with the Instrument Cluster) been set?**	**Yes** Refer to Cluster Diagnostics. **No** Go to H2.	
H2	**Check that "Default Display Options" has been selected (Menu→Settings→Display):** • Is the option set (ticked)?	**Yes** Unselect and check ICC operation again. **No** Go to H3.	
H3	**Check the ICC brightness level:** • When adjusting the slider pointer, is there a change in the screen brightness illumination?	**Yes** Go to H4. **No** Replace ICC and retest.	
H4	**Set the ICC LCD screen to display:**		
H5	**Set all the LCD fixed segments to on (ALL Fixed Segment ON):** • Is the correct image displayed?	 **Yes** Go to H6. **No** Replace ICC.	LCD_SEG_ DISPL#

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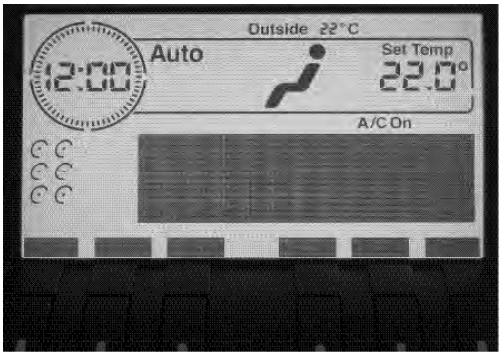
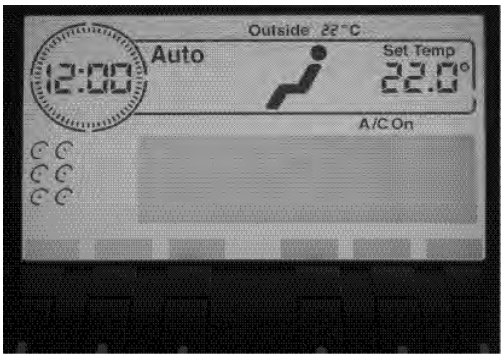
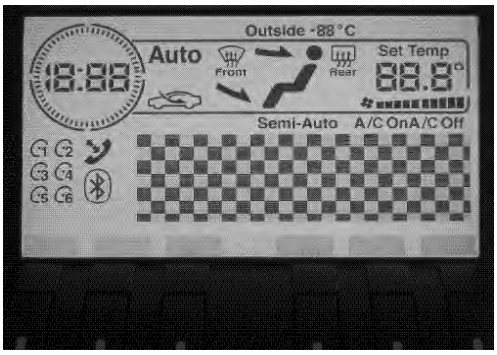
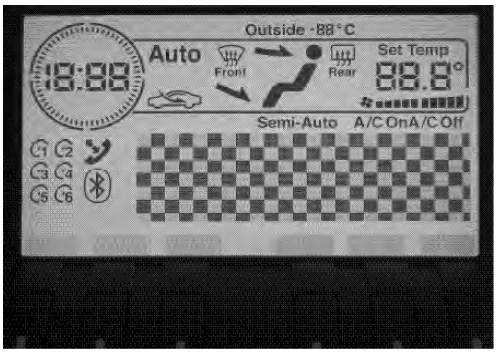
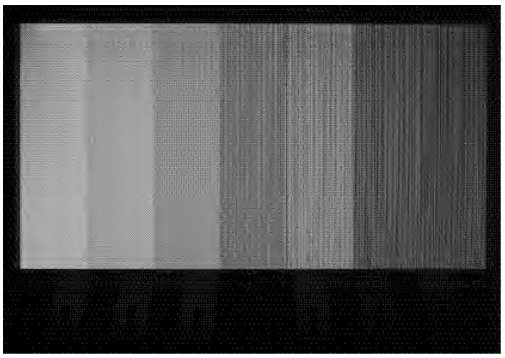
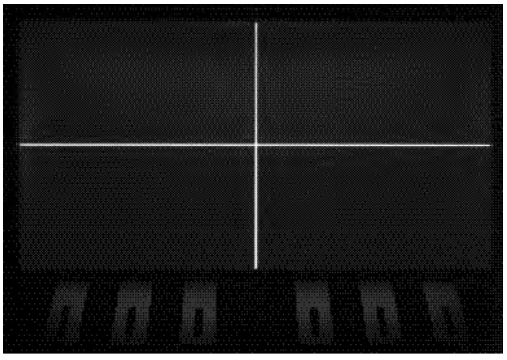
Test Step		Result/Action to Take	Acronyms
H6	**Set all the LCD fixed segments to off (ALL Fixed Segment OFF):** • Is the correct image displayed?	 **Yes** Go to H7. **No** Replace ICC.	LCD_SEG_ DISPL#
H7	**Set all the LCD dot matrix to on (ALL LCD segments ON):** • Is the correct image displayed?	 **Yes** Go to H8. **No** Replace ICC.	LCD_SEG_ DISPL#
H8	**Set all the LCD dot matrix to off (ALL LCD segments OFF):** • Is the correct image displayed?	 **Yes** Go to H9. **No** Replace ICC.	LCD_SEG_ DISPL#

continued on the following page

Test Step		Result/Action to Take	Acronyms
H9	**Set all the LCD checker pattern 1 on (Display Checked Pattern #1):** • Is the correct image displayed?	 **Yes** Go to H10. **No** Replace ICC.	LCD_SEG_ DISPL#
H10	**Set all the LCD checker pattern 2 on (Display Checked Pattern #2):** • Is the correct image displayed?	 **Yes** No fault with ICC. **No** Replace ICC.	LCD_SEG_ DISPL#

TEST H (TFT): TFT DISPLAY FAULT

Using the IDS function run the Screen Display test and confirm that the following displays are shown:

Test Step		Result/Action to Take	Acronyms
H1	**Has DTC U0155 (Lost Communication with the Instrument Cluster) been set?**	**Yes** Refer to Cluster Diagnostics. **No** Go to H2.	
H2	**Check that "Default Display Options" has been selected (Menu→Settings→Display):** • Is the option set (ticked)?	**Yes** Unselect and check ICC operation again. **No** Go to H3.	
H3	**Check the ICC brightness level:** • When adjusting the slider pointer, is there a change in the screen brightness illumination?	**Yes** Go to H4. **No** Replace ICC and retest.	
H4	**Set all the TFT display a colour bar picture(Display a colour bar):** • Is the correct image (colour bar picture) displayed on the TFT?	 **White, Yellow, Blue, Green, Purple, Red, Blue** **Yes** Go to H5. **No** Replace ICC.	LCD_SEG_ DISPL#
H5	**Set all the TFT display a cross pattern picture(Display a Cross pattern):** • Is the correct image (cross pattern picture) displayed on the TFT?	 **Yes** Go to H6. **No** Replace ICC.	LCD_SEG_ DISPL#

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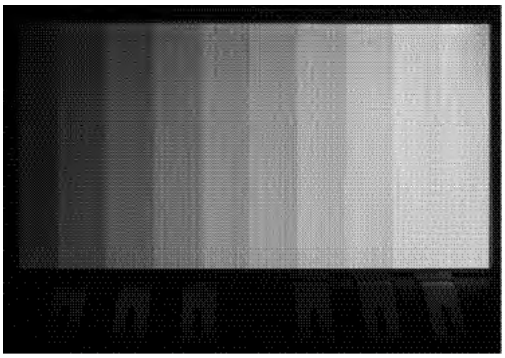
Test Step		Result/Action to Take	Acronyms
H6	**Set all the TFT display a 10 step grey gradient picture (Display 10-Step Pattern):** • Is the correct image (10 step grey gradient picture) displayed on the TFT?	 **Yes** No fault with ICC. **No** Replace ICC.	LCD_SEG_ DISPL#

TEST I: UNUSUAL NOISE FROM ICC

Test Step		Result/Action to Take	Acronyms
I1	**Test the ICC for any unusual noises or rattles:** • Are there any unusual noises or rattles?	**Yes** Go to I2. **No** No fault with ICC.	
I2	Is there an obstruction visible in the CTS grille?	**Yes** Try to remove the obstruction. If not possible, replace ICC and retest. **No** Go to I3.	
I3	**Remove ICC and inspect the ICC to determine if the noise source can be located:** • Can the noise source be located?	**Yes** Go to I5. **No** Go to I4.	
I4	**Refit the ICC ensuring that the four (4) yellow mounting clips are fitted and the Audio Self Aligning Connector is reset. Test for any unusual noises and rattles:** • Are there any unusual noises or rattles?	**Yes** Replace ICC and retest. **No** No fault with ICC.	
I5	**Inspect the area causing the unusual noise or rattle:** • Is the cause an ICC fault?	**Yes** Replace ICC and retest. **No** Rectify the noise or refer to the relevant diagnostics. Replace the original ICC and retest.	

TEST J: FAULTY AIR REGISTER

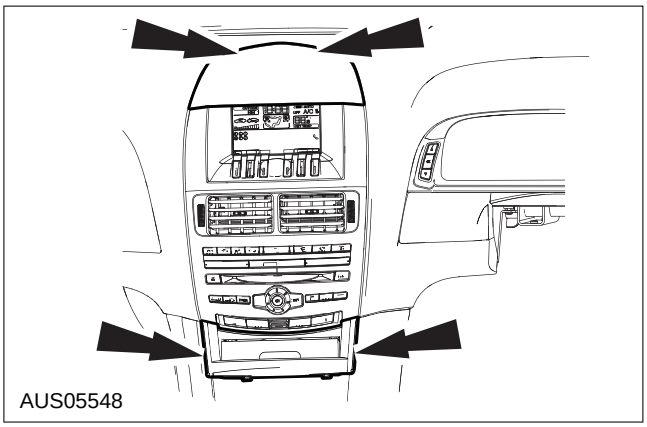
Test Step		Result/Action to Take	Acronyms
J1	**Check for mechanical movements of the air register operate correctly:** • Do the mechanical movements operate correctly?	**Yes** Go to J2. **No** Replace ICC.	
J2	**Inspect the air register for physical damage:** • Is the air register damaged?	**Yes** Replace ICC. **No** No fault with ICC. Refer to HIM diagnostics.	

REMOVAL AND INSTALLATION

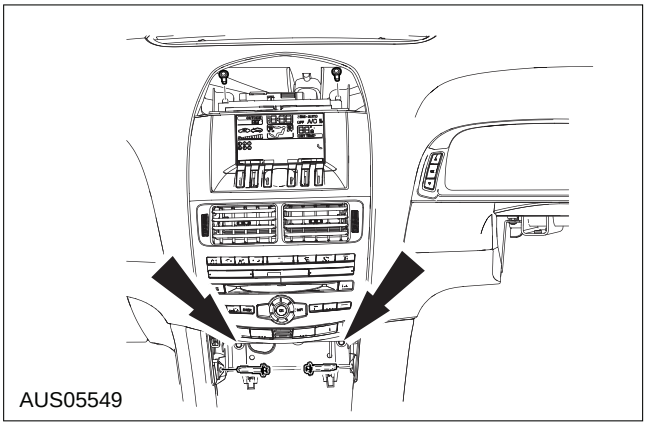
Interior Command Centre (ICC)

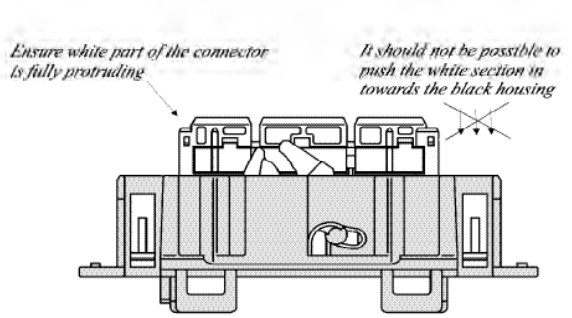
Removal

1. Turn off ignition and disconnect battery
2. Remove ICC cap. Lift gently with the Ford approved ICC cap removal tool until the rear two clips disengage, being careful not to damage the instrument panel. Rotate on front pivot and remove.
3. Remove tissue box holder by pulling gently.


AUS05548

4. Disconnect cables from top of the display module. Disconnect cable from the Bluetooth module if applicable. Disconnect antenna cable at the bottom of the ICC.
5. Unscrew four lower screws from CCB
6. Unscrew two upper screws from CCB
7. Gently ease out the ICC (connected by six clips to the instrument panel). - taking care to gently disengage the Large Multi-pin connector at rear of ICC as it is being removed. The centre console may also interfere with the removal of the ICC and care must be taken not to damage either part during removal.
8. Once ICC is removed ensure multi-pin connector socket, now visible in the CCB, is latched ready for re-insertion of the ICC.
9. Remove the Bluetooth Phone Module (BPM) if fitted.


AUS05549



Installation

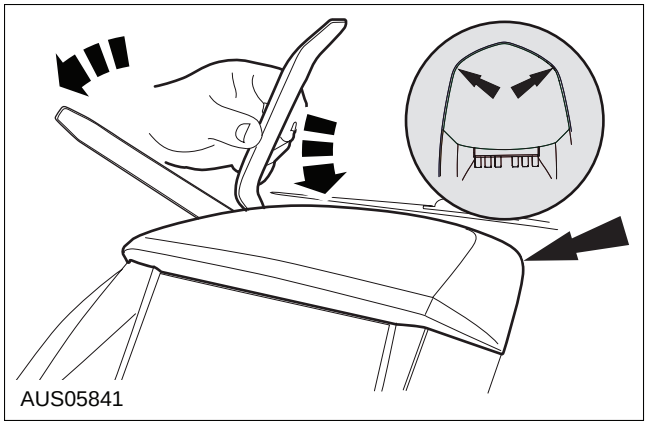
1. Install in reverse of removal procedure.

Interior Command Centre (ICC) Cap

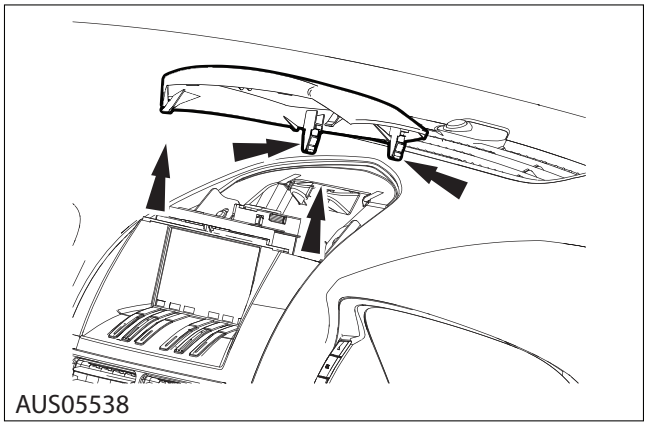
Removal

NOTE: The instructions below for the ICC cap removal are written with the technician performing the process from the driver's seat.

1. Using the wedge shaped, right angle end of Special Tool No. 4489-3, slip it under the ICC cap, right up to the angled bend on the passenger side of the ICC cap first (as shown).
   Caution: ⚠ Care must be taken not to pierce or crush the instrument panel skin as tool is inserted.
2. Lever the tool by pulling toward the passenger door until the ICC cap clip disengages.
   Warning: ⚠ Do not disengage only one clip and then lever the ICC cap up to disengage the other clip. Damage to the ICC cap may result and the retaining clip will dislodge and fall into the instrument panel causing a rattle.
3. Repeat step 1 on the driver's side and lever the tool by pulling toward the driver's door until the clip disengages.


AUS05841

4. Lift the ICC cap and remove.


AUS05538

Installation

1. Engage the front posts of ICC cap with the top edge of the ICC .
   Caution: ⚠ Ensure the ICC cap is located correctly, failure to do so may damage the ICC or the ICC cap.
2. Push down the ICC cap firmly to engage the retaining clips at the rear of the ICC cap.