

## Entering Function Menu

### Engine System

Read Fault Memory

Clear Fault Memory

Read Data Stream

Component Activation

Version No.

### Transmission System

Read Fault Memory

Clear Fault Memory

Version No.

### Antilock Brake System

Read Fault Memory

Clear Fault Memory

Read Data Stream

Version No.

### Air Bag

Read Fault Memory

Clear Fault Memory

Version No.

### Air Conditioning/Heater

Read Fault Memory

Clear Fault Memory

Read Data Stream

Version No.

### Instrument Panel

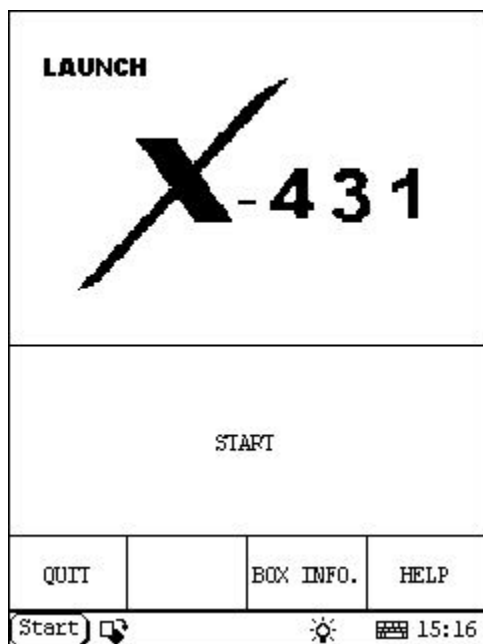
Read Fault Memory

Clear Fault Memory

Service Reset

Version No.

Manual Service Reset



## Entering Function Menu [HOME](#)

After connection, press [POWER] key to start X-431. After starting the main unit, press [HOTKEY] (or click [Start] button on the main menu, and select [GAG] [GD Scan] on the pop-up menu), the screen will display the home page of vehicle diagnosis as shown in figure to left.

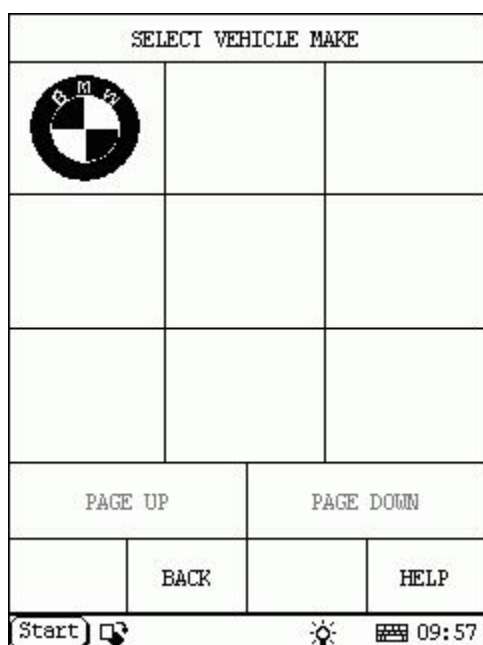
### Button descriptions:

[START]: to perform next operation

[QUIT]: to exit the diagnostic program

[BOX INFO.]: to display SMARTBOX version No.

[HELP]: to display help information



Click [START] button, the screen will display the vehicle make menu as shown in figure to left.




### Button descriptions:

[BACK]: to return to the upper interface.




[PAGE UP]: to display the previous page, it is inactive if the current page is the first page.

[PAGE DOWN]: to display the next page, it is inactive if the current page is the last page.

[HELP]: to display the help information.

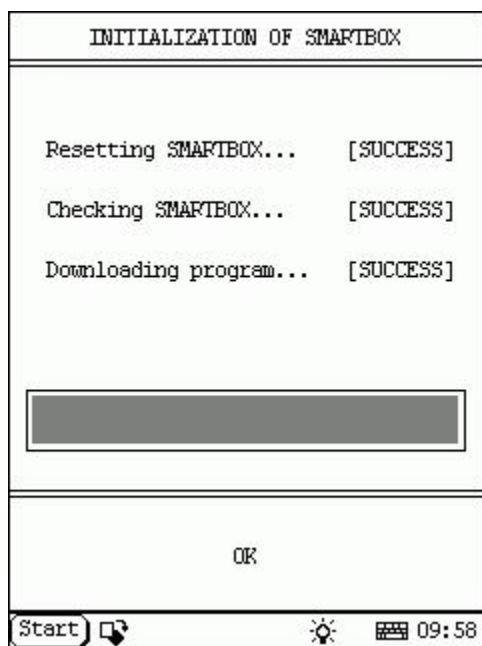
SELECT DIAG. SOFTWARE VER.			
BMW V13.07 All Systems			
-----			
-----			
PAGE UP	PAGE DOWN	OK	
	BACK		HELP
<span>Start</span>  <span style="float: right;">  09:57</span>			

Click the icon of BMW on the vehicle make menu, the screen will display as shown in figure to left.

SELECT DIAG. SOFTWARE VER.			
BMW V13.07 All Systems			
-----			
The software can diagnose the elec. control sys. of BMW up to 2003, include ENGINE/CHASSIS/BODY and other parts. The operation is the same as the original scan tool.			
-----			
PAGE UP	PAGE DOWN	OK	
	BACK		HELP
<span>Start</span>  <span style="float: right;">  09:57</span>			

Click [BMW V13.07 All Systems], the screen will display as shown in figure to left.

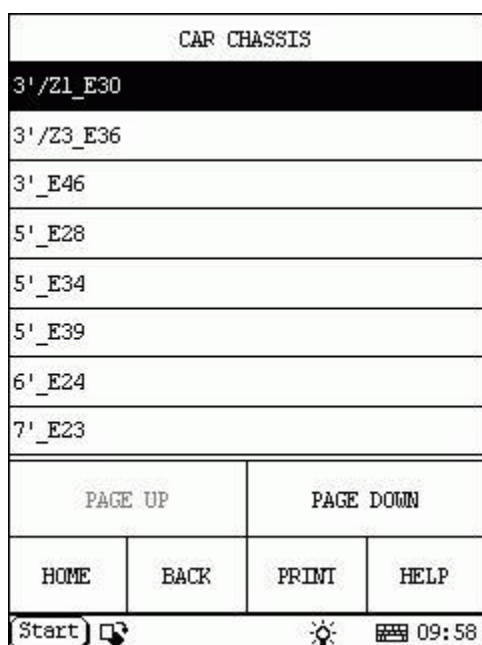
The software can diagnose the electronic control systems of BMW up to 2003, including ENGINE/CHASSIS/BODY and other parts.



Click **[OK]** button, X-431 begins reset and check the SMARTBOX, and download the diagnostic program from the CF cartridge. After download, the screen will display as shown in figure to left.

#### Button descriptions:

**[OK]**: to go on test.



Click **[OK]** button, the screen will display the menu of chassis type. See figure to left.

#### Button descriptions:




**[BACK]**: to return to the upper interface.

**[PAGE UP]**: to display the previous page, it is inactive if the current page is the first page.




**[PAGE DOWN]**: to display the next page, it is inactive if the current page is the last page.

**[HOME]**: to return to the home page of vehicle diagnosis.




**[HELP]**: to display the help information.

CAR CHASSIS			
7' _E32			
7' _E38			
7' _E65			
8' _E31			
X5_E53			
Z8_E52			
MINI_R50			
Diagnostic Socket Location			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
<div> <div>Start</div> <div>    10:00 </div> </div>			




Click [**PAGE DOWN**] button, the screen will display as shown in figure to left.

CAR CHASSIS			
3' /Z1_E30			
3' /Z3_E36			
3' _E46			
5' _E28			
5' _E34			
5' _E39			
6' _E24			
7' _E23			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
<div> <div>Start</div> <div>    09:58 </div> </div>			

Click [**PAGE UP**] button, the screen will display as shown in figure to left.

SELECT DIAG. SYSTEM			
DME (Engine)			
EGS (Transmission)			
ABS (Antilock brake)			
SRS (Air bag)			
IHKA/IHKB (AC/heater)			
IKE/IKI/KOMBI			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    10:07			




Click [3 /Z1\_E30] button, the screen will display as shown in figure to left.

ECU IDENTIFY	
DME M1.7 M40	
BOCSH H/W No.	0261200410
BOCSH S/W No.	1267350603
BMW H/W No.	1727493
BMW S/W No.	000
PRODUCT No.	466
OK	
Start    10:08	




## Engine System

[HOME](#)

Click [DME (Engine)] button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Component activation			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start 		  10:13	




Click **[OK]** button, the screen will display as shown in figure to left.

TROUBLE CODE	
No Fault Code	
OK	PRINT
Start 	
  10:13	




### Read Fault Memory

[HOME](#)

Click **[Read fault memory]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Component activation			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start 		  10:13	

Click **[OK]** button, the screen will display as shown in figure to left.

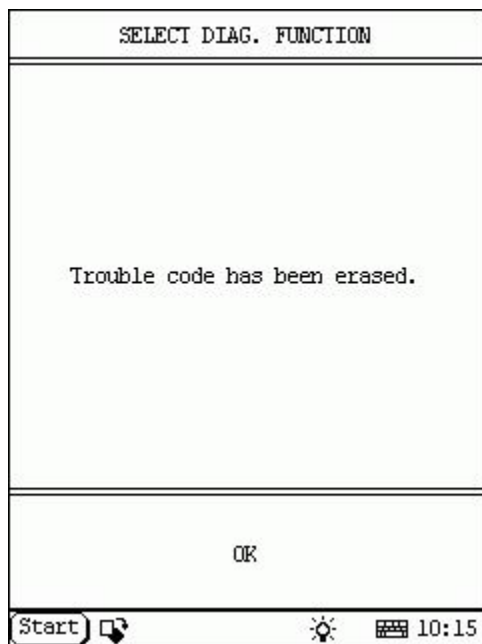
SELECT DIAG. FUNCTION	
Are you sure to clear fault memory?	
YES	NO
Start    10:14	

### Clear Fault Memory

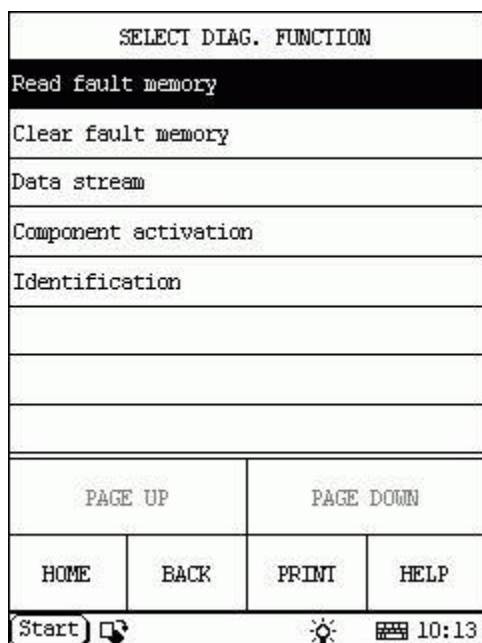
[HOME](#)

Click **[Clear fault memory]** button, the screen will display as shown in figure to left.





Click [YES] button, the screen will display as shown in figure to left.






Click [OK] button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Engine Speed			
Ignition timing			
Coolant temp.			
Intake air temp.			
Injection signal cylinder 1			
Close loop control			
O2 sensor heater			
O2 sensor voltage			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start		10:16	

## Read Data Stream

[HOME](#)

Click **[Data stream]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Load signal			
Airflow sensor signal			
CO potentiometer			
Vehicle speed			
Battery voltage			
Fuel pump relay			
DWA switch			
Tank ventilation			
PAGE UP		PAGE DOWN	
OK			
HOME	BACK	PRINT	HELP
[Start] 		  10:17	

Click **[PAGE DOWN]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Cylinder detection			
TPS switch			
TPS sensor			
Ignition timing intervention			
Driving position			
AC compressor			
AC switch			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start		10:17	

Click [**PAGE DOWN**] button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Load signal			
Airflow sensor signal			
CO potentiometer			
Vehicle speed			
Battery voltage			
Fuel pump relay			
DWA switch			
Tank ventilation			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start		10:17	

Click [**PAGE UP**] button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Engine Speed			
Ignition timing			
Coolant temp.			
Intake air temp.			
Injection signal cylinder 1			
Close loop control			
O2 sensor heater			
O2 sensor voltage			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start		10:16	

Click **[PAGE UP]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Engine Speed			
Ignition timing			
Coolant temp.			
Intake air temp.			
Injection signal cylinder 1			
Close loop control			
O2 sensor heater			
O2 sensor voltage			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start		10:47	

Click the items you want to see, e.g. **Engine speed**, **Ignition timing**, **Intake air temp.** and **Injection signal cylinder 1**. The screen will display as shown in figure to left.

DATA STREAM			
Engine Speed		0 rpm	
Ignition timing		108 °	
Intake air temp.		193.0 ℃	
Injection signal cylinder 1		131.1 ms	
PAGE UP		PAGE DOWN	
		GRAPHIC-1	
HOME	BACK	PRINT	HELP
Start		10:48	

Click [OK]. The screen will display the real-time values of the selected items, as shown in figure to left.

**Button descriptions:**

[GRAPHIC-1]: to display the waveform of an active data.

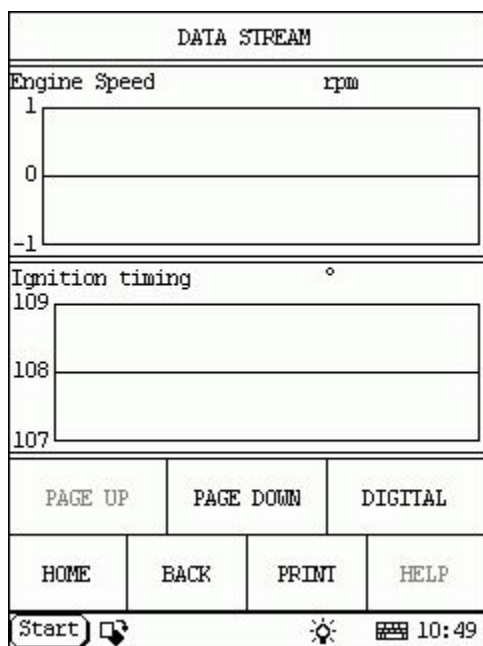
[PRINT]: to print out the test result.

DATA STREAM			
Engine Speed		rpm	
<div>1</div> <div>0</div> <div>-1</div>			
PAGE UP		PAGE DOWN	
GRAPHIC-2			
HOME	BACK	PRINT	HELP
Start		10:49	

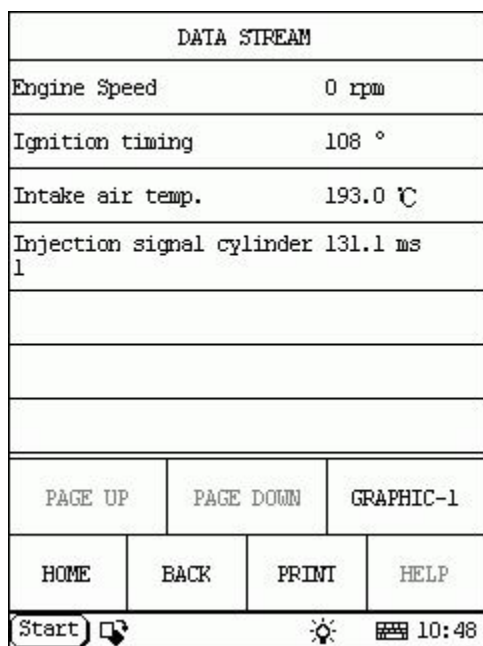
Click **GRAPHIC-1**. The screen will display the waveform for one data stream item. See figure to left.

**Button descriptions:**

[GRAPHIC-2]: to display two data stream waveforms.



Click **GRAPHIC-2** to display waveforms of two data stream items. It is convenient to make comparison between two correlative data stream items. See figure to left.



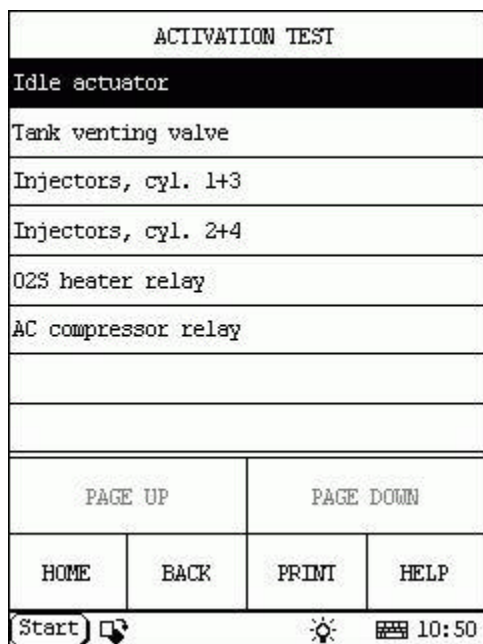
Click **DIGITAL** in the interface, the screen will display the real-time value of the data stream again, as shown in figure to left.

SELECT DATA ITEM			
Engine Speed			
Ignition timing			
Coolant temp.			
Intake air temp.			
Injection signal cylinder 1			
Close loop control			
O2 sensor heater			
O2 sensor voltage			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
<div> <div>Start</div> <div> </div> <div>10:16</div> </div>			

Click **[BACK]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Component activation			
Identification			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
<div> <div>Start</div> <div> </div> <div>10:13</div> </div>			

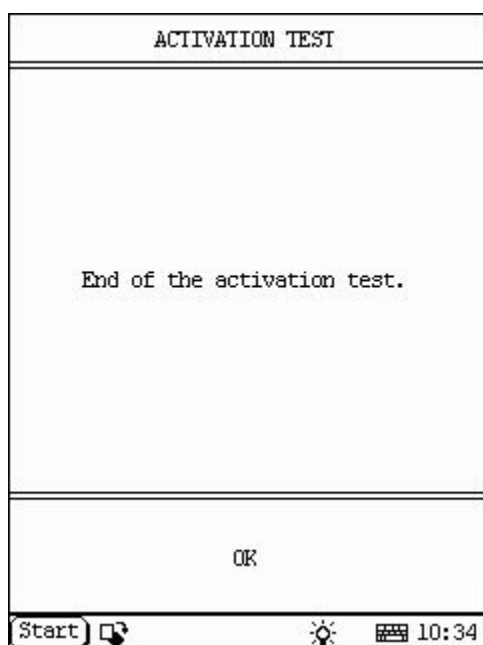
Click **[BACK]** button, the screen will display as shown in figure to left.



## Component Activation

[HOME](#)

Click **Component activation**. The screen will display a list of items for activation test, as shown in figure to left.



Click one item in the list to perform the test.

Now we take **Idle actuator** as example to explain the test steps:

Click **Idle actuator**. X-431 starts testing idle actuator.

When the test is successful, the screen will display the message as shown in figure to left.

### Button description:

**[OK]**: to return to the upper level interface.

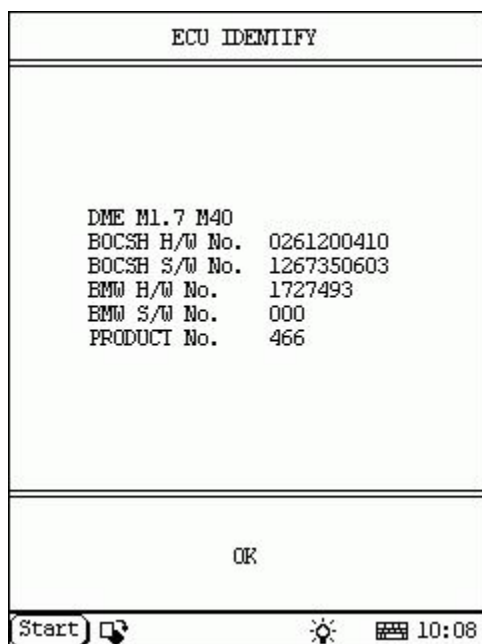


ACTIVATION TEST			
Idle actuator			
Tank venting valve			
Injectors, cyl. 1+3			
Injectors, cyl. 2+4			
O2S heater relay			
AC compressor relay			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
<div> <div>Start</div> <div></div> <div></div> <div></div> <div>10:50</div> </div>			

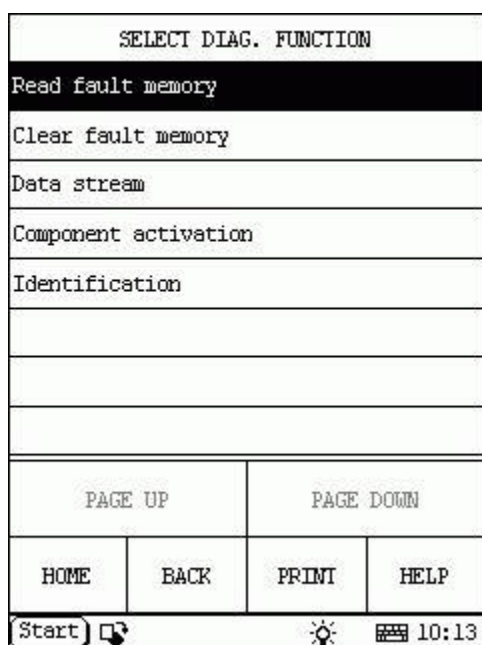
Click **[OK]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Component activation			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
<div> <div>Start</div> <div></div> <div></div> <div></div> <div>10:13</div> </div>			




Click **[BACK]** button, the screen will display as shown in figure to left.

**Version No.**[HOME](#)




Click **[Identification]** in the function menu. The screen will display the information on ECU version of engine system, as shown in figure to left.



Click **[OK]** button, the screen will display as shown in figure to left.

SELECT DIAG. SYSTEM			
DME (Engine)			
EGS (Transmission)			
ABS (Antilock brake)			
SRS (Air bag)			
IHKA/IHKB (AC/heater)			
IKE/IKI/KOMBI			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    10:07			




Click **[BACK]** button, the screen will display as shown in figure to left.

ECU IDENTIFY	
<p>Jecs 5-speed trans.  ASS 300J(Jatco PLA)  Jatco NO.        000000000  ROM NO.        000000000  Version NO.     000000000  BMW H/W NO.</p>	
OK	PRINT
Start    11:52	




## Transmission System

[HOME](#)

Click **[EGS (Transmission)]** button. The screen will display the information on ECU version of transmission system, as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start 		  12:03	




Click **[OK]** button. The screen displays the function menu of the transmission system, as shown in figure to left.

SELECT DIAG. FUNCTION	
No Fault Code	
OK	PRINT
Start 	
  16:37	




### Read Fault Memory

[HOME](#)

Click **[Read fault memory]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start 		  12:03	

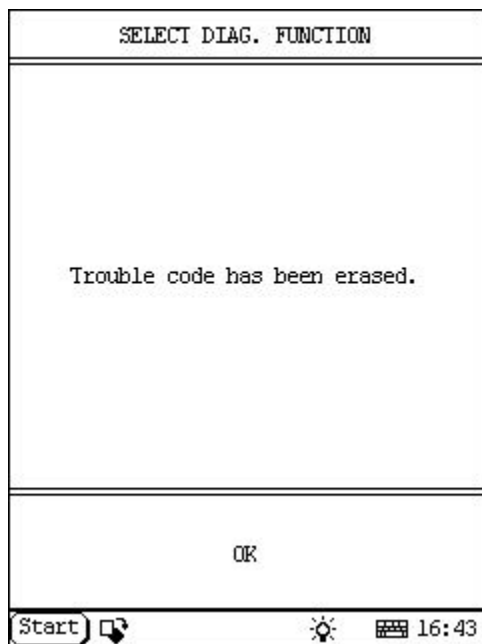
Click **[OK]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION	
Are you sure to clear fault memory?	
YES	NO
Start 	
  16:40	

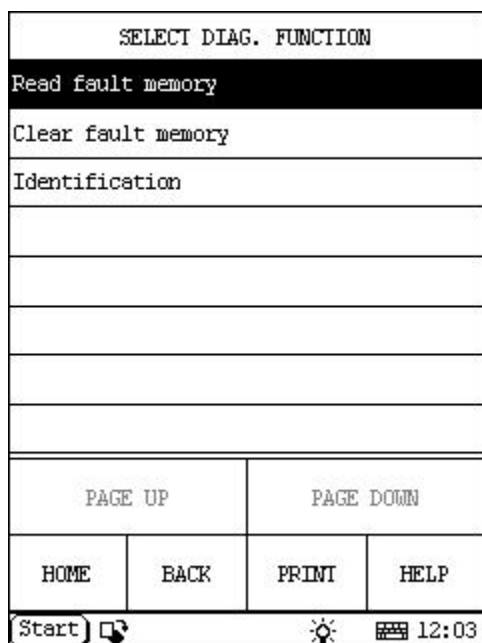
### Clear Fault Memory

[HOME](#)

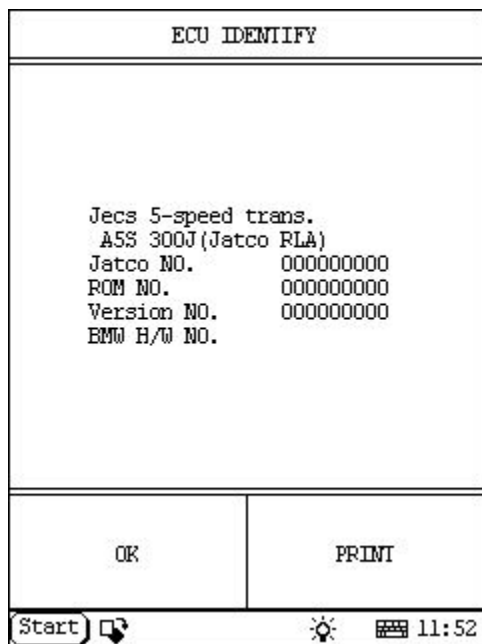
Click **[Clear fault memory]** button, the screen will display as shown in figure to left.



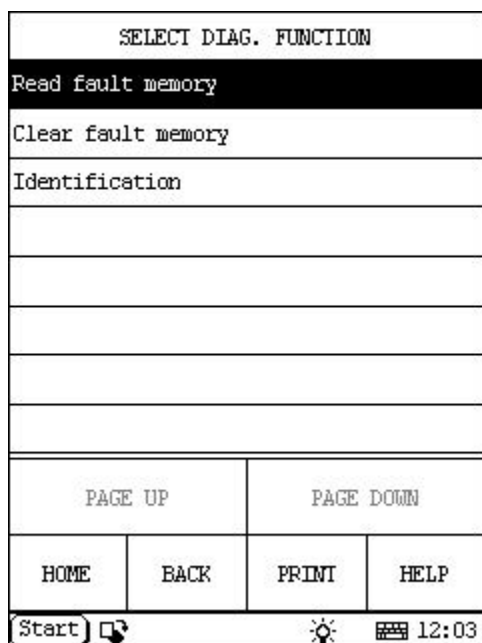
Click [YES] button, the screen will display as shown in figure to left.



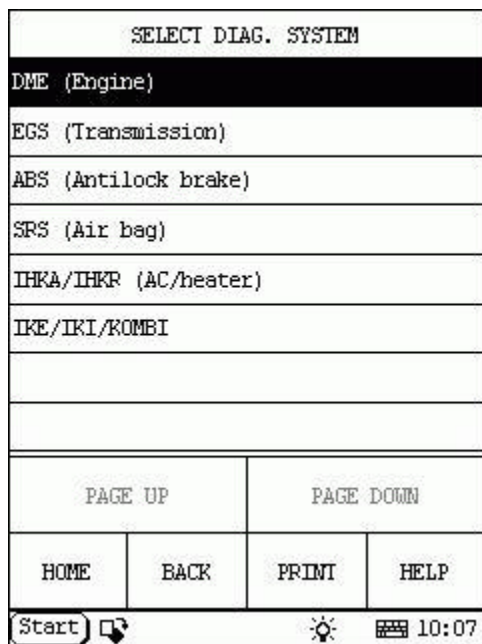
Click [OK] button, the screen will display as shown in figure to left.

**Version No.**[HOME](#)

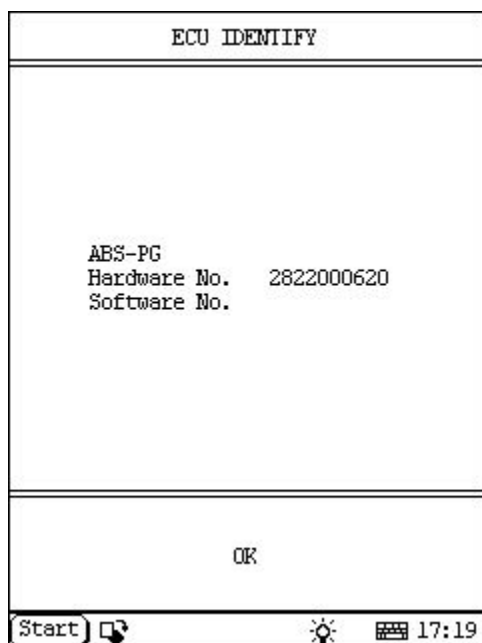
Click **[Identification]** in the function menu. The screen will display the information on ECU version of transmission system, as shown in figure to left.



Click **[OK]** button, the screen will display as shown in figure to left.



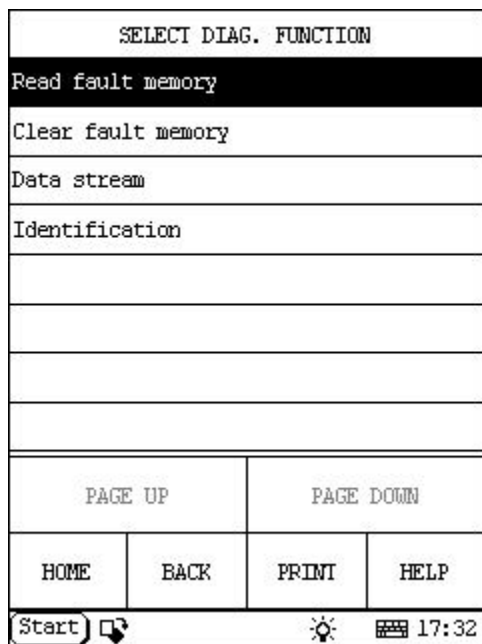
Click **[BACK]** button, the screen will display as shown in figure to left.



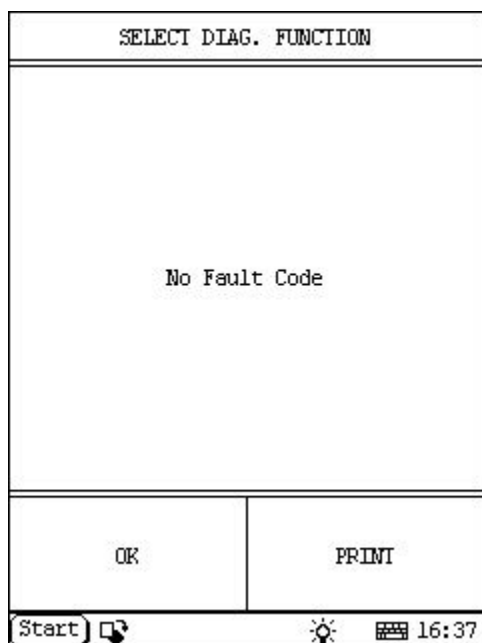
## Antilock Brake System [HOME](#)

Click **[ABS (Antilock brake)]** button. The screen will display the information on ECU version of antilock brake system, as shown in figure to left.








Click **[OK]** button. The screen displays the function menu of the antilock brake system, as shown in figure to left.






### Read Fault Memory

[HOME](#)

Click **[Read fault memory]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start 		  17:32	

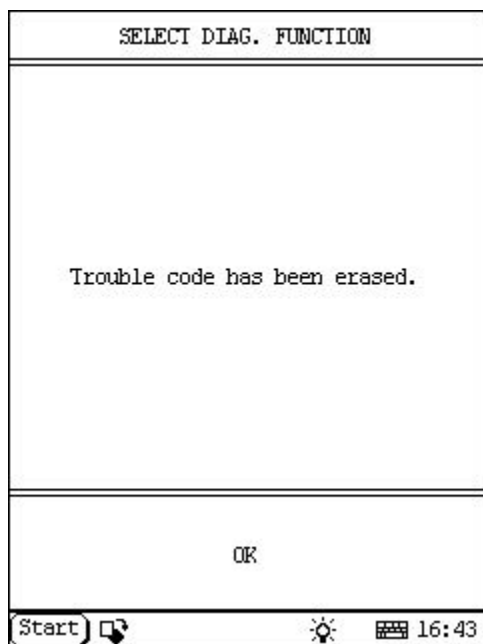
Click **[OK]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION	
Are you sure to clear fault memory?	
YES	NO
Start 	
  16:40	

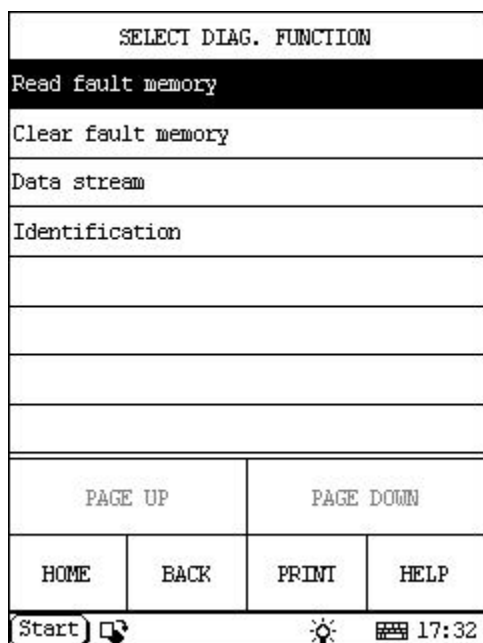
### Clear Fault Memory

[HOME](#)

Click **[Clear fault memory]** button, the screen will display as shown in figure to left.



Click [YES] button, the screen will display as shown in figure to left.



Click [OK] button, the screen will display as shown in figure to left.




**Read Data Stream**[HOME](#)

Click **[Data stream]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Wheel speed:Teeth:48/96 Front left			
Wheel speed:Teeth:48/96 Front right			
Wheel speed:Teeth:48/96 Rear left			
Wheel speed:Teeth:48/96 Rear right			
Brake-light switch			
return pump:			
Valve-relay voltage			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start		17:30	

SELECT DATA ITEM			
Wheel speed:Teeth:48/96 Front left			
Wheel speed:Teeth:48/96 Front right			
Wheel speed:Teeth:48/96 Rear left			
Wheel speed:Teeth:48/96 Rear right			
Brake-light switch			
return pump:			
Valve-relay voltage			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start		18:07	

Click the items you want to see, e.g. **[Wheel speed:Teeth:48/96 front left]**, **[Wheel speed:Teeth:48/96 front right]**, **[Wheel speed:Teeth:48/96 rear left]**, **[Wheel speed:Teeth:48/96 rear right]**, **[Brake-light switch]**, **[return pump:]** and **[Vavle-relay voltage]**. The screen will display as shown in figure to left.




DATA STREAM			
Wheel speed:Teeth:48/96 Front left		0.0/0.0 km/h	
Wheel speed:Teeth:48/96 Front right		0.0/0.0 km/h	
Wheel speed:Teeth:48/96 Rear left		0.0/0.0 km/h	
Wheel speed:Teeth:48/96 Rear right		0.0/0.0 km/h	
Brake-light switch		INACTIVE	
return pump:		Off	
Valve-relay voltage		12.0 V	
PAGE UP		PAGE DOWN	
		GRAPHIC-1	
HOME	BACK	PRINT	HELP
[Start] 			 17:57

Click **[OK]**. The screen will display the real-time values of the selected items, as shown in figure to left.

Button descriptions:

**[GRAPHIC-1]:** to display the waveform of an active data.

**[PRINT]**: to print out the test result.

DATA STREAM			
Valve-relay voltage		V	
12.1			
12.0			
11.9			
PAGE UP		PAGE DOWN	
HOME		GRAPHIC-2	
BACK		PRINT	
HELP			
[Start] 		  18:00	

Click **GRAPHIC-1**. The screen will display the waveform for one data stream item. See figure to left.

**Button descriptions:**

[GRAPHIC-2]: to display tow data stream waveforms.

DATA STREAM	
Valve-relay voltage	V
12.1	
12.0	
11.9	
PAGE UP	PAGE DOWN
DIGITAL	
HOME	BACK
PRINT	HELP
Start	17:12

Click **GRAPHIC-2** to display waveforms of two data stream items. It is convenient to make comparison between two correlative data stream items. See figure to left.

DATA STREAM	
Wheel speed:Teeth:48/96	0.0/0.0 km/h
Front left	
Wheel speed:Teeth:48/96	0.0/0.0 km/h
Front right	
Wheel speed:Teeth:48/96	0.0/0.0 km/h
Rear left	
Wheel speed:Teeth:48/96	0.0/0.0 km/h
Rear right	
Brake-light switch	INACTIVE
return pump:	Off
Valve-relay voltage	12.0 V
PAGE UP	PAGE DOWN
GRAPHIC-1	
HOME	BACK
PRINT	HELP
Start	17:57

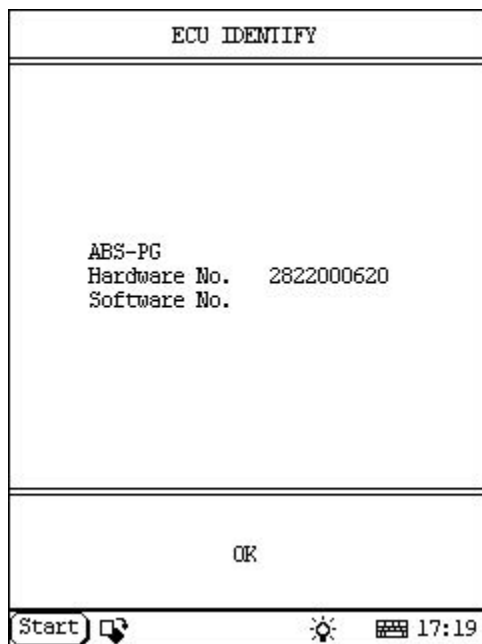
Click **DIGITAL** in the interface, the screen will display the real-time value of the data stream again, as shown in figure to left.

SELECT DATA ITEM			
Wheel speed:Teeth:48/96 Front left			
Wheel speed:Teeth:48/96 Front right			
Wheel speed:Teeth:48/96 Rear left			
Wheel speed:Teeth:48/96 Rear right			
Brake-light switch			
return pump:			
Valve-relay voltage			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
<div> <div>Start</div> <div></div> <div></div> <div></div> <div>17:30</div> </div>			

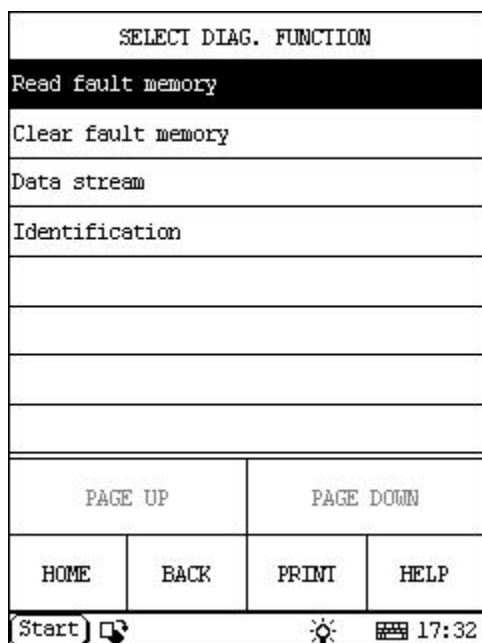
Click **[BACK]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Identification			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
<div> <div>Start</div> <div></div> <div></div> <div></div> <div>17:32</div> </div>			

Click **[BACK]** button, the screen will display as shown in figure to left.




**Version No.**[HOME](#)

Click **[Identification]** in the function menu. The screen will display the information on ECU version of antilock brake system, as shown in figure to left.






Click **[OK]** button, the screen will display as shown in figure to left.



SELECT DIAG. SYSTEM			
DME (Engine)			
EGS (Transmission)			
ABS (Antilock brake)			
SRS (Air bag)			
IHKA/IHKB (AC/heater)			
IKE/IKI/KOMBI			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start 		  10:07	




Click **[BACK]** button, the screen will display as shown in figure to left.

ECU IDENTIFY	
Airbag [ZAE] system	
Part Number	8352763
Hardware Number	01
Software Number	46
Diagnosis index	01
Coding index	01
Bus index	00
Data	50/92
OK	PRINT
Start 	
  17:31	




## Air Bag

[HOME](#)

Click **[SRS (Air bag)]** button. The screen will display the information on ECU version of air bag system, as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    17:27			




Click **[OK]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION	
No Fault Code	
OK	PRINT
Start    16:37	




### Read Fault Memory

[HOME](#)

Click **[Read fault memory]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    17:27			

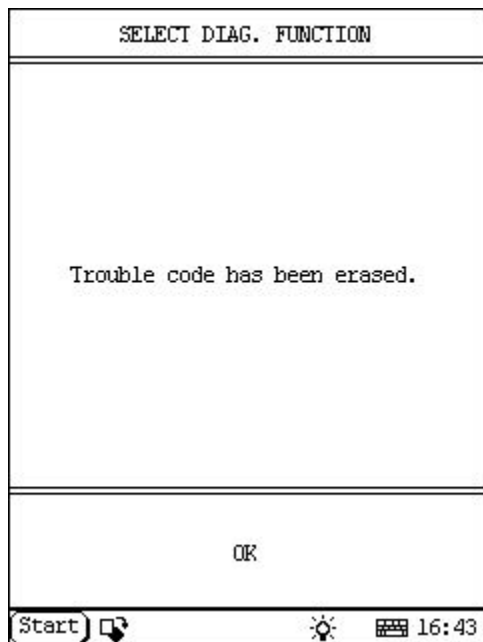
Click **[OK]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION	
Are you sure to clear fault memory?	
YES	NO
Start    16:40	

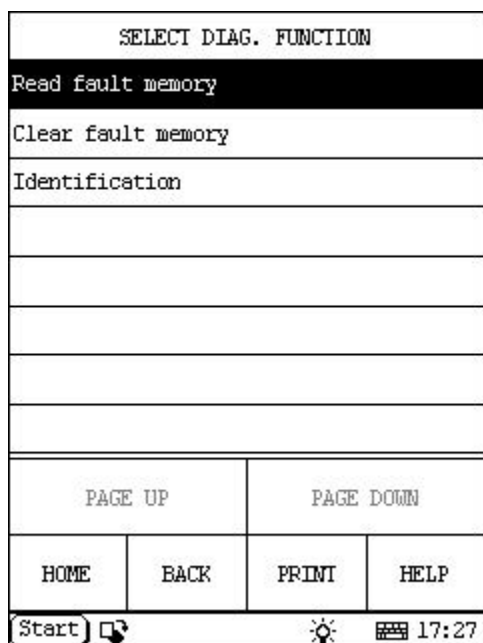
### Clear Fault Memory

[HOME](#)

Click **[Clear fault memory]** button, the screen will display as shown in figure to left.



Click **[YES]** button, the screen will display as shown in figure to left.



Click **[OK]** button, the screen will display as shown in figure to left.




ECU IDENTIFY	
Airbag [ZAE] system	
Part Number	8352763
Hardware Number	01
Software Number	46
Diagnosis index	01
Coding index	01
Bus index	00
Data	50/92
<div>OK</div> <div>PRINT</div>	
<div>Start</div> <div>17:31</div>	

**Version No.**[HOME](#)




Click **[Identification]** in the function menu. The screen will display the information on ECU version of air bag system, as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
<div>Start</div> <div>17:27</div>			

Click **[OK]** button, the screen will display as shown in figure to left.




SELECT DIAG. SYSTEM			
DME (Engine)			
EGS (Transmission)			
ABS (Antilock brake)			
SRS (Air bag)			
IHKA/IHKB (AC/heater)			
IKE/IKI/KOMBI			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    10:07			

Click **[BACK]** button, the screen will display as shown in figure to left.

ECU IDENTIFY	
IHKA E38	
Part Number	3353432
Hardware Number	31
Software Number	36
Diagnosis index	00
Coding index	00
Bus index	37
Data	30/31
OK	PRINT
Start    09:57	

## Air Conditioning/Heater [HOME](#)




Click **[IHKA/IHKB (AC/Heater)]** button. The screen will display the information on ECU version of air conditioning/heater system, as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
(Start)    09:57			




## Read Fault Memory

[HOME](#)




Click [OK] button, the screen will display as shown in figure to left.

TROUBLE CODE			
6 Stratification flap motor, left, IHKA			
ID 5 1 0 59 undefined.			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
(Start)    09:57			

Click [Read fault memory] button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    09:57			

Click **[BACK]** button, the screen will display as shown in figure to left.

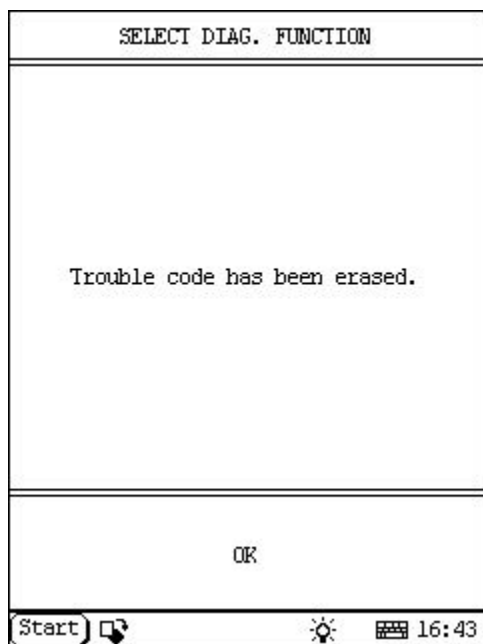
SELECT DIAG. FUNCTION	
Are you sure to clear fault memory?	
YES	NO
Start    16:40	

### Clear Fault Memory

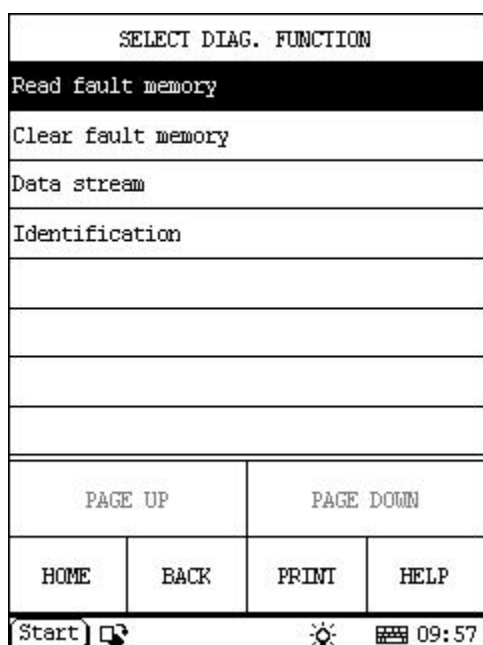
[HOME](#)

Click **[Clear fault memory]** button, the screen will display as shown in figure to left.





Click **[YES]** button, the screen will display as shown in figure to left.



Click **[OK]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Outside temperature sensor (Via K-bus)			
Engine temperature (Via K-bus)			
Inner temp. sensor			
Evaporate sensor			
Ventilation temperature sensor Left			
Ventilation temperature sensor Right			
Heat exchanger sensor Left			
Heat exchanger sensor Right			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start		09:57	




## Read Data Stream

[HOME](#)

Click **[Data stream]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Stratification potentiometer Front			
Stratification potentiometer Rear			
Blower Left			
Blower Right			
Blower control volt.			
AUC heating			
AUC sensor			
Clamp 30			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start		09:57	

Click **[PAGE DOWN]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Sensor supply			
Sensor blower			
Rear compartment switch			
Outside temperature sensor (Via K-bus)			
Inner temp. sensor			
Temperature control Left			
Temperature control Right			
Guided control Left			
PAGE UP		PAGE DOWN	
HOME		OK	
BACK		PRINT	
HELP			
Start    09:57			

Click **[PAGE DOWN]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Guided control Right			
Engine speed			
Heat exchanger sensor Left			
Heat exchanger sensor Right			
Heat exchanger rated temp. Left			
Heat exchanger rated temp. Right			
Heat exchanger set value Left			
Heat exchanger set value Right			
PAGE UP		PAGE DOWN	
HOME		OK	
BACK		PRINT	
HELP			
Start		09:57	

Click **[PAGE DOWN]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Clamp 58g (Via K-bus)			
Temperature set Left			
Temperature set Right			
AC switch			
AUC			
Air circulation			
Rear window defogger			
Rest heating			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
<div> <div>Start</div> <div> </div> <div> </div> <div>  09:57 </div> </div>			

Click [**PAGE DOWN**] button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Defrost			
Above			
Center, left			
Below, left			
Auto, left			
Center, right			
Below, right			
Auto, right			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
<div> <div>Start</div> <div> </div> <div> </div> <div>  09:57 </div> </div>			




Click [**PAGE DOWN**] button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Fresh air flap			
Defrost flap			
Air circulation flap			
Rear compartment flap			
Stratification flap, Left			
Stratification flap, Right			
Ventilation flap, Left			
Ventilation flap, Right			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
<div> <div>Start</div> <div></div> <div></div> <div></div> <div>09:57</div> </div>			




Click **[PAGE DOWN]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Footwell flap Left			
Footwell flap Right			
Defogger relay			
Rear defogger relay			
DME-AC signal			
DME-KO signal			
AC compressor			
Auxiliary fan pos.1			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
<div> <div>Start</div> <div></div> <div></div> <div></div> <div>09:57</div> </div>			

Click **[PAGE DOWN]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Water valve, Left			
Water valve, Right			
Auxiliary water pump			
Park heating Wake up line			
Locking valve			
Safety car			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start    09:57			

Click **[PAGE DOWN]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Identification			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start    09:57			




Click **[BACK]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Outside temperature sensor (Via K-bus)			
Engine temperature (Via K-bus)			
Inner temp. sensor			
Evaporate sensor			
Ventilation temperature sensor Left			
Ventilation temperature sensor Right			
Heat exchanger sensor Left			
Heat exchanger sensor Right			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start		09:57	

Click **[Data stream]** button, the screen will display as shown in figure to left.

SELECT DATA ITEM			
Outside temperature sensor (Via K-bus)			
Engine temperature (Via K-bus)			
Inner temp. sensor			
Evaporate sensor			
Ventilation temperature sensor Left			
Ventilation temperature sensor Right			
Heat exchanger sensor Left			
Heat exchanger sensor Right			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
Start		09:58	

Click the items you want to see, e.g. **[Outside temperature sensor (Via K-bus)]**, **[Engine temperature (Via K-bus)]**, **[Inner temp. sensor]** and **[Evaporate sensor]**. The screen will display as shown in figure to left.

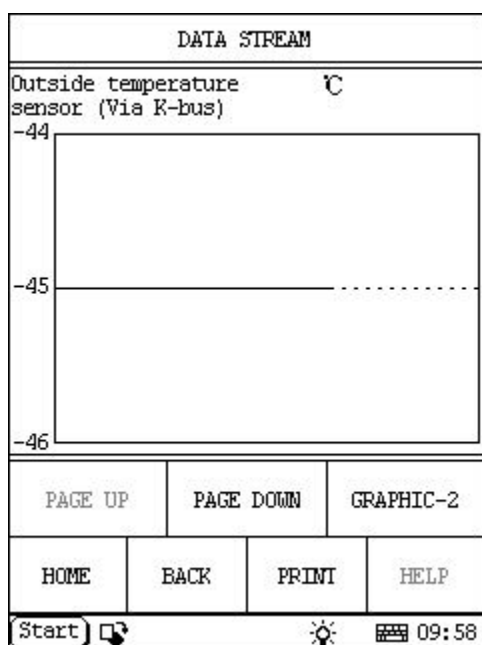
DATA STREAM			
Outside temperature sensor (Via K-bus)		-45 °C	
Engine temperature (Via K O-bus)		10.0 °C	
Inner temp. sensor		10.0 °C	
Evaporate sensor		10.0 °C	
PAGE UP		PAGE DOWN	GRAPHIC-1
HOME	BACK	PRINT	HELP
Start			 09:58

Click **[OK]**. The screen will display the real-time values of the selected items, as shown in figure to left.

#### Button descriptions:

**[GRAPHIC-1]**: to display the waveform of an active data.

**[PRINT]**: to print out the test result.



Click **GRAPHIC-1**. The screen will display the waveform for one data stream item. See figure to left.

#### Button descriptions:

**[GRAPHIC-2]**: to display tow data steam waveforms.



DATA STREAM			
Outside temperature sensor (Via K-bus)		℃	
-44			
-45			
-46			
Engine temperature (Via K-bus)		℃	
1			
0			
-1			
PAGE UP		PAGE DOWN	
DIGITAL			
HOME	BACK	PRINT	HELP
Start		09:58	

Click **GRAPHIC-2** to display waveforms of two data stream items. It is convenient to make comparison between two correlative data stream items. See figure to left.

DATA STREAM			
Outside temperature sensor (Via K-bus)		-45 ℃	
Engine temperature (Via K-bus)		0 ℃	
Inner temp. sensor		10.0 ℃	
Evaporate sensor		10.0 ℃	
PAGE UP		PAGE DOWN	
GRAPHIC-1			
HOME	BACK	PRINT	HELP
Start		09:58	

Click **DIGITAL** in the interface, the screen will display the real-time value of the data stream again, as shown in figure to left.

SELECT DATA ITEM			
Outside temperature sensor (Via K-bus)			
Engine temperature (Via K-bus)			
Inner temp. sensor			
Evaporate sensor			
Ventilation temperature sensor Left			
Ventilation temperature sensor Right			
Heat exchanger sensor Left			
Heat exchanger sensor Right			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
<div> <div>Start</div> <div></div> <div></div> <div></div> <div>09:57</div> </div>			

Click **[BACK]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Identification			
PAGE UP		PAGE DOWN	
HOME		BACK	
PRINT		HELP	
<div> <div>Start</div> <div></div> <div></div> <div></div> <div>09:57</div> </div>			

Click **[BACK]** button, the screen will display as shown in figure to left.




ECU IDENTIFY	
IHKA E38	
Part Number	3353432
Hardware Number	31
Software Number	36
Diagnosis index	00
Coding index	00
Bus index	37
Data	30/31
<div>OK</div> <div>PRINT</div>	
<div>Start</div> <div>09:57</div>	

**Version No.**[HOME](#)




Click **[Identification]** in the function menu. The screen will display the information on ECU version of air conditioning/heater system, as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Data stream			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
<div>Start</div> <div>09:57</div>			

Click **[OK]** button, the screen will display as shown in figure to left.

SELECT DIAG. SYSTEM			
DME (Engine)			
EGS (Transmission)			
ABS (Antilock brake)			
SRS (Air bag)			
IHKA/IHKB (AC/heater)			
IKE/IKI/KOMBI			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    10:07			




Click **[BACK]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Auto Diagnosis			
Manual Service			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    15:06			




## Instrument Panel

[HOME](#)




Click **[IKE/IKI/KOMBI]** button, the screen will display as shown in figure to left.

ECU IDENTIFY	
KOM instrument cluster, Basis CAN	
Part Number	6914913
Hardware NO.	19
Software NO.	18
Diagnosis index	36
Coding index	07
Bus index	12
Data	47/01
CAN index	05
Modification	42
<div>OK</div> <div>PRINT</div>	
<div>Start</div> <div>    15:06         </div>	

Click **Auto Diagnosis** button. The screen will display the information on ECU version of instrument panel system, as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Service Reset			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
<div>Start</div> <div>    15:06         </div>			




Click **[OK]** button, the screen will display as shown in figure to left.

TROUBLE CODE			
5	Coolant temperature sensor		
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    15:06			

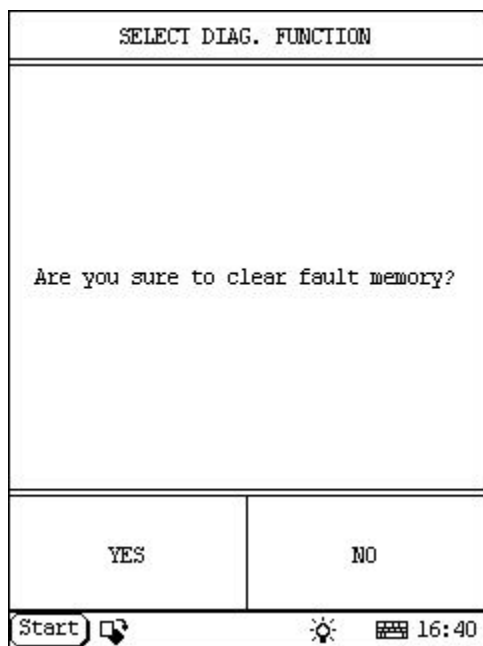
## Read Fault Memory

[HOME](#)

Click **[Read fault memory]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Service Reset			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    15:06			

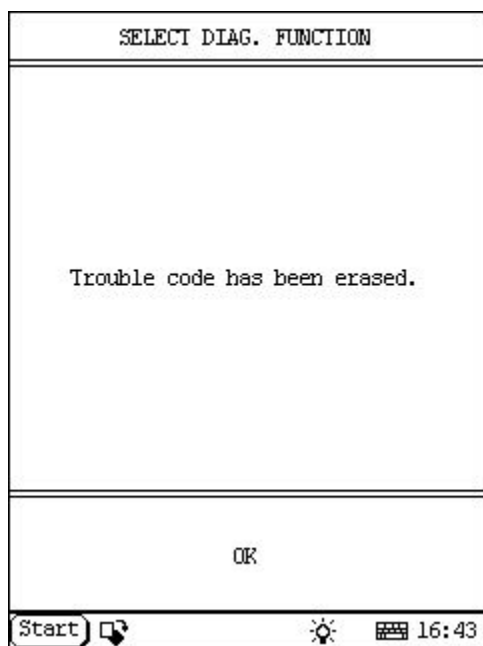
Click **[BACK]** button, the screen will display as shown in figure to left.






## Clear Fault Memory

[HOME](#)




Click **[Clear fault memory]** button, the screen will display as shown in figure to left.



Click **[YES]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Service Reset			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    15:06			

Click **[OK]** button, the screen will display as shown in figure to left.

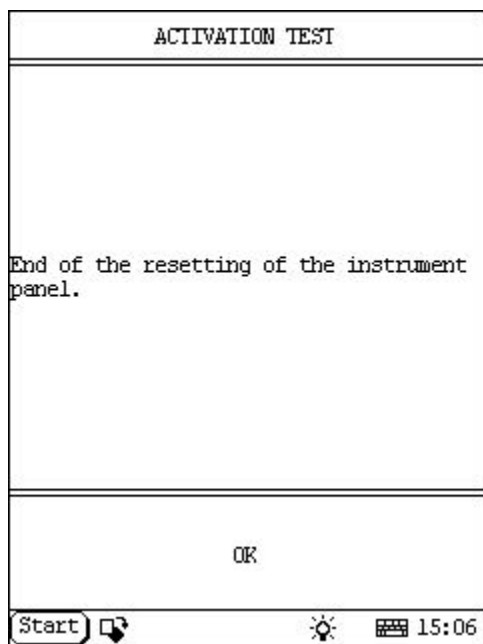
ACTIVATION TEST			
Oil service			
Time inspection			
Distance inspection			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    15:06			

### Service Reset

[HOME](#)

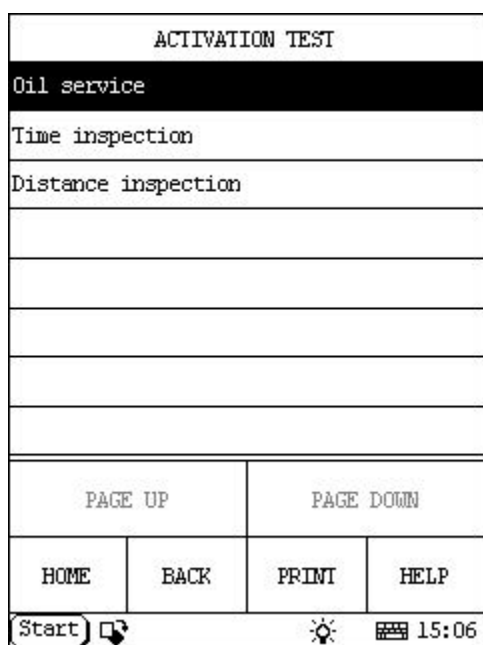
Click **[Service Reset]** button, the screen will display as shown in figure to left.








The operation procedures for the above three items are the same. Now we take **[Oil service]** as an example to describe the procedure.




Click **[Oil service]**. X-431 starts to reset the oil service indicator. When the resetting is completed, the screen will display the message as shown in figure to left.



Click **[OK]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Service Reset			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    15:06			




Click **[BACK]** button, the screen will display as shown in figure to left.

ECU IDENTIFY	
KOM instrument cluster, Basis CAN Part Number      6914913 Hardware NO.     19 Software NO.     18 Diagnosis index   36 Coding index     07 Bus index        12 Data              47/01 CAN index        05 Modification     42	
OK	PRINT
Start    15:06	




### Version No.

[HOME](#)




Click **[Identification]** in the function menu. The screen will display the information on ECU version of instrument panel system, as shown in figure to left.

SELECT DIAG. FUNCTION			
Read fault memory			
Clear fault memory			
Service Reset			
Identification			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start 		  15:06	




Click **[OK]** button, the screen will display as shown in figure to left.

SELECT DIAG. SYSTEM			
DME (Engine)			
EGS (Transmission)			
ABS (Antilock brake)			
SRS (Air bag)			
IHKA/IHKB (AC/heater)			
IKE/IKI/KOMBI			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start 		  10:07	

Click **[BACK]** button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Auto Diagnosis			
Manual Service			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    15:06			

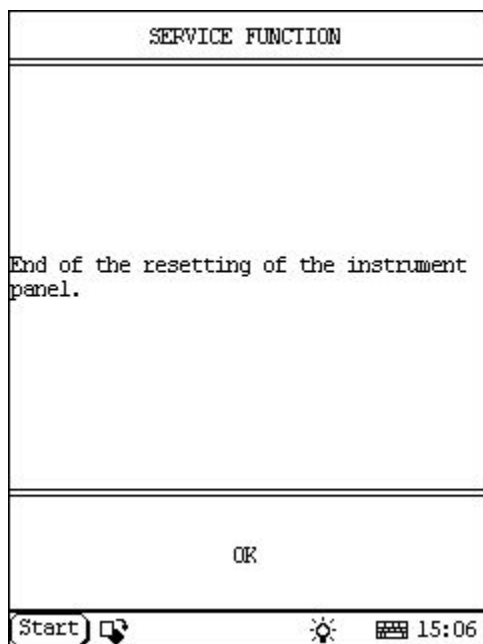
Click [IKE/IKI/KOMBI] button, the screen will display as shown in figure to left.

SELECT DIAG. FUNCTION			
Oil Reset			
Service Reset			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start    15:06			

### Manual Service Reset

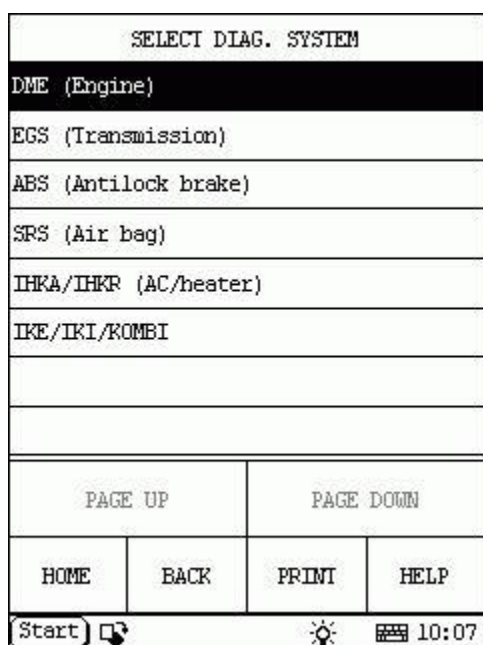
[HOME](#)

Click [Manual Service] button, the screen will display as shown in figure to left.





The operation procedures for the above two items are the same. Now we take **[Oil Reset]** as an example to describe the procedure.

Click **[Oil Reset]**. X-431 starts to reset the oil service indicator. When the resetting is completed, the screen will display the message as shown in figure to left.



Click **[OK]** button, the screen will display as shown in figure to left.

CAR CHASSIS			
3' /Z1_E30			
3' /Z3_E36			
3' _E46			
5' _E28			
5' _E34			
5' _E39			
6' _E24			
7' _E23			
PAGE UP		PAGE DOWN	
HOME	BACK	PRINT	HELP
Start	  09:58		

Click **[BACK]** button, the screen will display as shown in figure to left.