Nissan Diagnostic Centre

CONSULT-III plus

Foreword

The information in this Training Manual should not be interpreted as a basis for warranty or goodwill claims against Nissan Motor Co. (Australia) Pty. Ltd. (NMA) unless so designated.

This Technical Training Manual is intended for use by NMA & Nissan Dealership Technical Personnel. It is not designed for the use by press or for customer distribution.

Before quoting any specifications be sure to check the relevant Service Manual and Technical Bulletins.

Right for alteration to data and specifications at any time is reserved. Any such alterations will be advised by Nissan through Technical and Sales Bulletins.

Ref: Technical Training Department.

History of CONSULT

Computerised **ON**-board **S**ystem **U**niversa**L** **T**ester

| CONSULT I | CONSULT II | CONSULT III |

History of CONSULT

Computerised **ON**-board **S**ystem **U**niversa**L** **T**ester

CONSULT I was introduced in 1989 to support the release of the U12 Pintara (KA24E models only) & the Z32 300ZX. Manufactured by Canon in Japan.

CONSULT II was introduced in 1999 to support the release of A33 Maxima, N16 Pulsar & Y61 Patrol ZD30. Manufactured by Vetronix in the USA. **MUST NOT BE USED ON CURRENT MODEL VEHICLES** – system can be damaged.

CONSULT III introduced to support the release of 2008 Model Year vehicles. Manufactured by Panasonic in Japan. Sold & Serviced by SPX Australia.

CONSULT-III plus

CONSULT-III plus was introduced to support the release of 2012 Model Year vehicles.

Nissan Diagnostic Centre

Advantages of NDC

- The NDC is designed to be a "1 Stop Shop" for Nissan Technicians to access Nissan service information as well as carry out general work, repair & trouble diagnosis activities on NISSAN vehicles.
- It's entirely contained within a large, lockable, robust & easily maneuverable steel cabinet. Cabinet is powder coated for easy cleaning & good appearance.
- Includes a convenient docking station for CONSULT-III plus.
- Includes a printer for the easy printing of ESM pages & recorded graphs etc.
- Includes a wireless keyboard & optical mouse.
- Includes a convenient single power connection point which is linked to an internal power distribution board (4 x outlets).
- Includes a network connection point so that CONSULT-III plus can be linked to TechLine (iNISCOM).
- Includes a wireless router so that the CONSULT-III plus can communicate to the dealerships IT network via a wireless network. The cabinet then remains free to move around the workshop as it will only require to a power outlet to operate.
- Includes an OTC Digital Multimeter.
- Includes a set of Trim panel removal tools.

CONSULT-III plus Kit (Basic)

1. CONSULT-III
2. Vehicle Interface (VI)
3. Measurement Interface (MI)
4. Power supply
5. DVD drive
6. Security card
7. Cables
8. Probes
9. Crocodile clips

Advantages of CONSULT-III plus

- Developed for Model Year 2012 onwards vehicles
  - Necessary to communicate with more on-board modules than older vehicles.
- Developed specifically for new vehicle control systems
  - CAN is now a common place electrical system technology in Nissan vehicles.
- Developed to reduce diagnosis time
  - All DTC reading (& delete) function. More than 1 system is able to be monitored on the same screen at once.
- Improved total design
  - Wireless communication & easy to read large coloured screen.
- Panasonic Toughbook has a durable & reliable reputation
  - However the tool is NOT indestructible!!
- Has the convenience of a Vehicle Data Recorder function
  - Previously the NVR was an expensive tool for Nissan Motor Co. technical staff only.
- Graph print outs are simple to produce & easier to read
  - Laid out on A4 paper and image files can be added to the TechLine contact!

Advantages of CONSULT-III plus

- It has the multi purpose convenience of a Laptop Computer (PC), yet it can be powered & operated in a vehicle (**BUT NOT BY THE DRIVER!**) whilst driven.

- CONSULT-III plus Software upgrades are Quick & Simple to carry out.
  - General diagnosis, NATS & Reprogramming updates are all in the 1 operation & will be required every 3 ~ 4 months.

- Can play Nissan Technical Training CD-R's & DVD's.

- Can be easily linked to iNISCOM for communication to Nissan & access to Nissan service documents etc.

- Can easily operate Nissan Electronic Service Manuals (ESM's). The addition of a printer provides the quick & easy printing of service manual pages.

Please Do <u>NOT</u>…

- Load non Nissan approved software in the machine. It will more than likely corrupt the CONSULT-III plus software. Repair costs will be at the dealers expense if this is the case.
- Load gimmick screen savers & mouse cursers onto the machine. It will more than likely corrupt the CONSULT-III plus software. Repair costs will be at the dealers expense if this is the case.
- Load another vehicle manufacturers scan tool software on the machine (including Renault). It will more than likely corrupt the CONSULT-III plus software. Repair costs will be at the dealers expense if this is the case.

  The Nissan supplied CONSULT-III plus Panasonic PC is for the use of Nissan Technicians servicing & repairing Nissan vehicles ONLY.

- Load on the Dealer Business system. It is for use in the Nissan workshop by Nissan Technicians servicing & repairing Nissan vehicles only. It is NOT for the convenience of Service Advisors processing R/O's.
- "Surf the net". Bugs ultimately will find there way onto the machine & corrupt the CONSULT-III plus software. Repair costs will be at the dealers expense if this is the case.

Please Do <u>NOT</u>…

- Load "Windows VISTA" or "Windows 7" operating software on the machine. It is STRONGLY RECOMMENDED that the machine be left running the Windows XP SP-2 or SP-3.
- Leave the **<u>NATS security card</u>** in the machine. Once the NATS servicing / repair operation has been carried out, remove the security card & store in a separate & secure location.
- Operate the machine in a WET environment.
- Operate the machine in an extremely HOT environment.
- Touch the screen with a screw driver, pen or other sharp objects. ONLY use the stylus that is provided or preferably avoid touching the screen at all. Use the mouse provided instead.
- Use the stylus on the screen if it is dirty &/or dusty.
- Expect that the machine is un-breakable. It can be easily **<u>DAMAGED</u>** so PLEASE treat the machine carefully.
- Leave the VI unit plugged into the vehicles diagnostic link. It may flatten the vehicles battery.
- **<u>LEAVE THE VI UNIT IN THE VEHICLE ONCE ANY WORK OPERATIONS HAVE BEEN COMPLETED.</u>**

Please <u>DO</u>…

- Use it to play Nissan Technical Training CD-R's & DVD's (Such as the YD25 HP Fuel Pump / Fuel Injector R & R DVD. However do not play the 1999 R50 Pathfinder CD-R, it installs some software which may corrupt).
- Use it to view Nissan Service Publications & PRINT OFF RELEVANT PAGES in the interest of IMPROVING TECHNICIAN EFFICIENCY.
- Connect it EXCLUSIVELY to iNISCOM for communication with TechLine & viewing / printing of Nissan STB's.
- Get your dealership's IT specialist involved with it's set-up, care & operation.
- Familiarise yourselves with STB GI07-009.

Other sources of INFORMATION for CONSULT-III plus

Recommended Desk Top Layout

Use only if it is connected to the InTRAnet (iNISCOM)

Double Click to Start CONSULT-III plus

ADDITIONAL SOURCE OF C-III plus INFORMATION . Look for updates on the C-III plus Software Upgrade Disc.

CONSULT-III icons

Do **NOT** add any other software, screensavers, games etc. to the machine!!!

Otherwise machine repair warranty may be void!

Contents of the NDC

Cloth to wipe screen

Panasonic Toughbook software discs & user manuals

Cord for Stylus, additional carry strap, USB extension

CONSULT-III plus

Power Cord to be installed into cabinet

12V power supply kit

DVD / CD-R player, software disc, user manual

Take Note

The actual screen is a touch screen. Ideally the stylus can be used instead of fingers. Do NOT use the stylus on a dirty screen.

From time to time, Screen Calibration will need to be conducted.
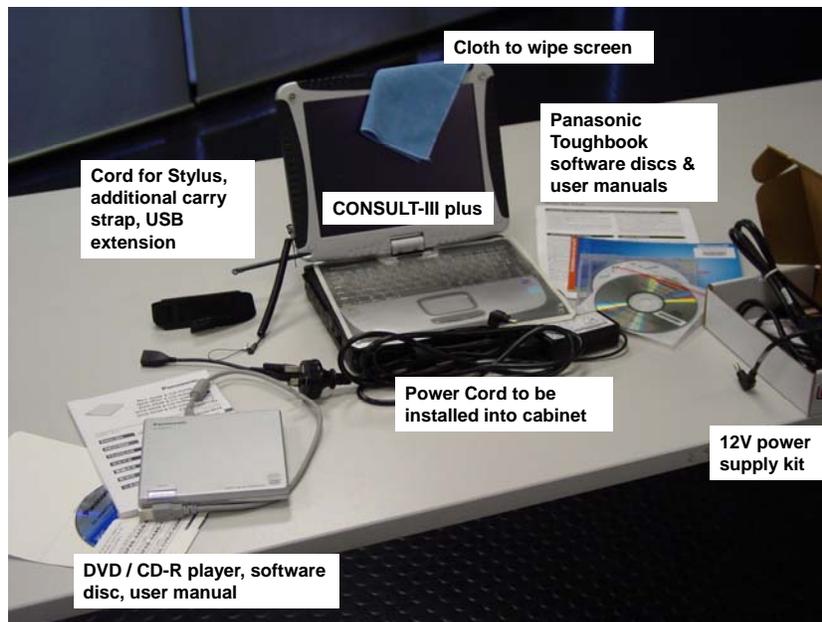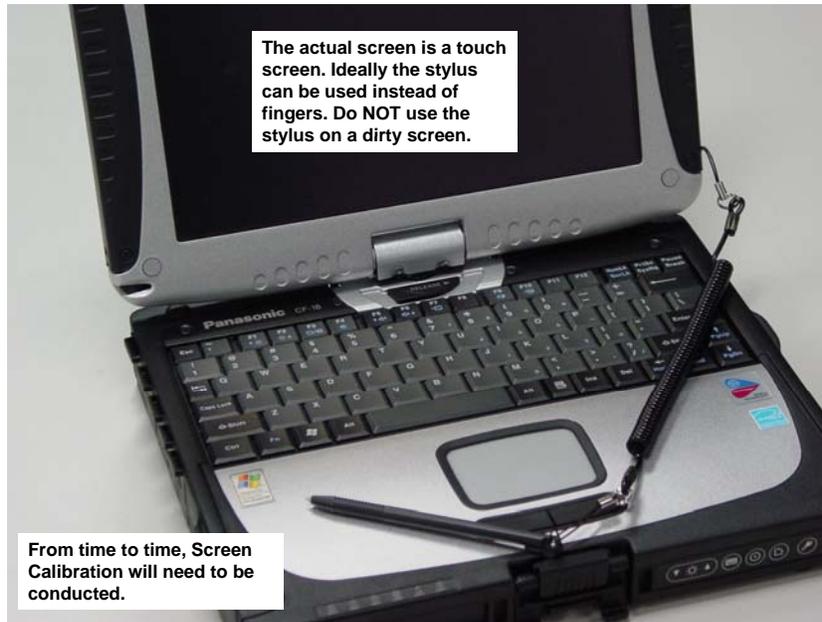
Contents of the NDC

CONSULT-III plus Vehicle Interface (VI)

USB Cable

USB cable is required for initial registration of C3plus VI

New VI unit

240V Power Supply

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Contents of the NDC

* VI self test adapter

* VI to C-III USB cable link

Trigger unit for recording during road tests

* Coloured rings to identify VI

•External power adapter for VI

DLC I to DLC II adapter

CONSULT-III Vehicle Interface (VI)

* These items are not needed for typical day to day use

Contents of the NDC

Printer with software CD, user manual & power cable & USB cable

Contents of the NDC

Wireless keyboard

Keyboard antenna & user manual

Mouse

Top of the NDC

Cabinet layout

CAUTION! Ensure that top of Trolley is clear of Obstructions before closing Lid. Turn Monitor OFF before Closing Lid. Close Lid Gently.

CONSULT III - Accessories

Take Note

Slide open the little panel door prior to docking

Remove the protective boot prior to docking

Cupboard of the NDC

Toughbook docks onto the sliding shelf

CONSULT III - Accessories

Electronic Diagnostic Equipment

Lower shelves can store printer paper, manuals etc.

Top Drawer of the NDC

CONSULT-III and CONSULT-III plus Accessories

Top Drawer of the NDC

CONSULT-III and CONSULT-III plus Accessories, continued

1. Shintaro Wireless Keyboard and Mouse

2. Toughbook 12V Portable power supply

3. Panasonic Lumix Digital Camera

4. Panasonic Lumix Battery Charger

5. Panasonic Lumix Battery Charger power cord (240V)

6. CONSULT-III *plus VI 2 (Vehicle Interface)*

7. CONSULT-III VI (Vehicle Interface)

8. Sync VI/MI USB cables, USB Fly Lead, DLC1 Convertor Cable.

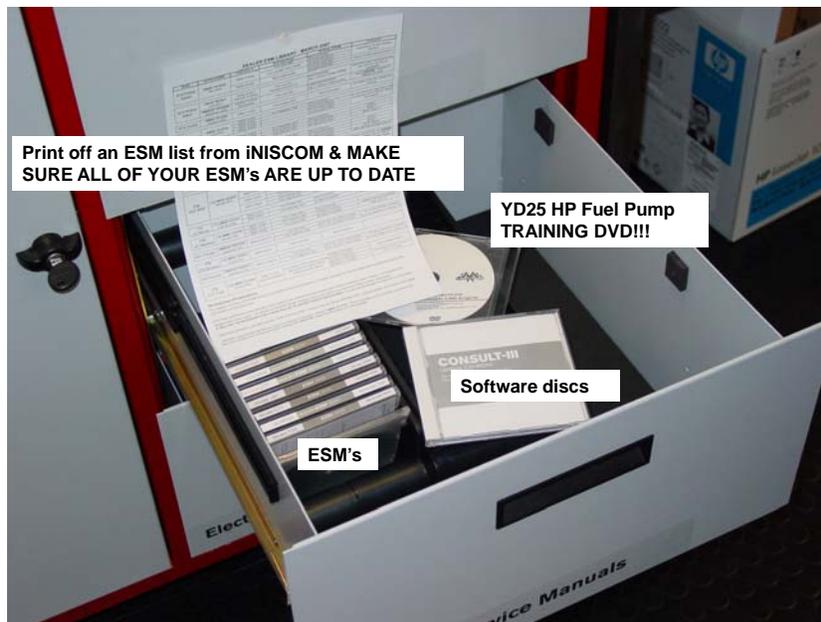9. MI (Measurement Interface)

10. VI / MI Trigger & Cable Tester.

2nd Drawer of the NDC

Panel / Trim removal tool set

OTC Digital Multimeter

The new "Test Lead" SST kit also belongs in here too!

Part # ; 00001 68100

3rd Drawer of the NDC

Print off an ESM list from iNISCOM & MAKE SURE ALL OF YOUR ESM's ARE UP TO DATE

YD25 HP Fuel Pump TRAINING DVD!!!

Software discs

ESM's

Bottom Drawer of the NDC

CONSULT II storage

Bottom cupboard of the NDC

WARNING! The MI charger unit can get HOT. Do NOT enclose it in the cabinet whilst it is on charge.

Ensure the cabinet is free from flammable debris etc.

Power board can accommodate 4 x devices. INCLUDING the charger for CONSULT II & the MI charger

Rear of the NDC

Network access port

Power inlet
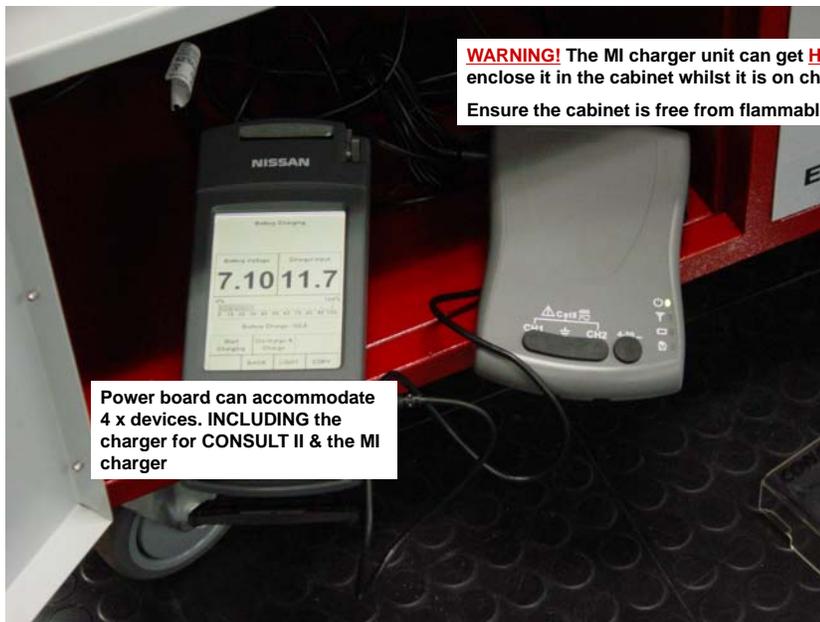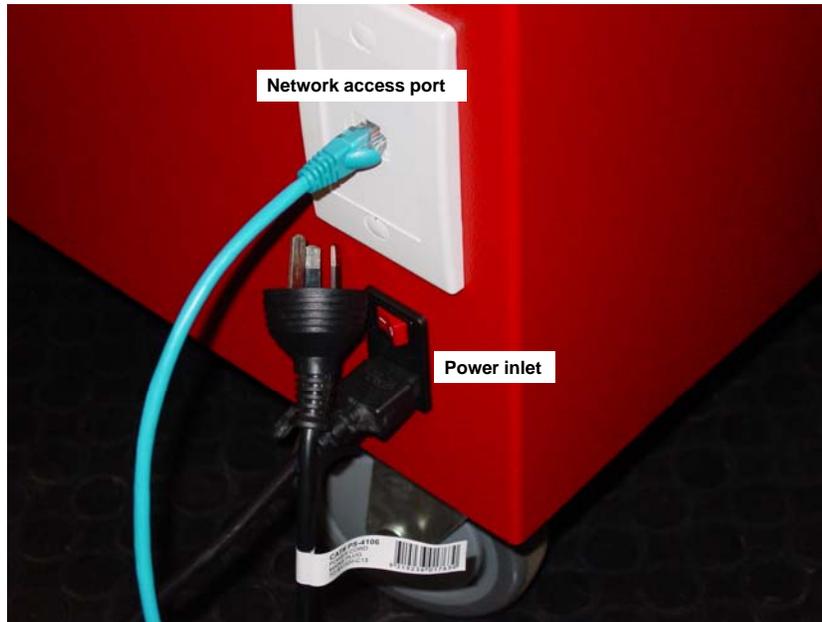
Keep Separate from the NDC

Do NOT leave these near the NDC. They are to be stored in a separate & secure location

C-III and C-III plus security card. Required for NATS servicing & reprogramming operations

The Purpose of CONSULT

- It's an additional source of information. It supports information found in the Service Manual, STB's & what the customer has described.

- CONSULT is a tool that can display information for Technicians to interpret whether the system is OK or NOT.

- It display's in a readable format what the associated Control Unit (CU) is doing as well as what it is seeing.

- It has the ability to relay overriding instructions from the technician to the CU under limited circumstances.

- It has the ability to record data (good or bad) & then display it for further analysis

- It is NOT the responsibility of CONSULT to determine if there is a fault or not, It simply displays any faults the CU has detected. The CU has the ability to detect Fault's. NOT the CONSULT.

- Detected Faults typically are either OPEN or SHORT circuits. However there are some cases where a "Logic Mis-Match" can be regarded as a fault. BUT It depends on how the Control Unit was programmed.

Wireless communication

CONSULT-III/plus

Wireless Range

5 m or less
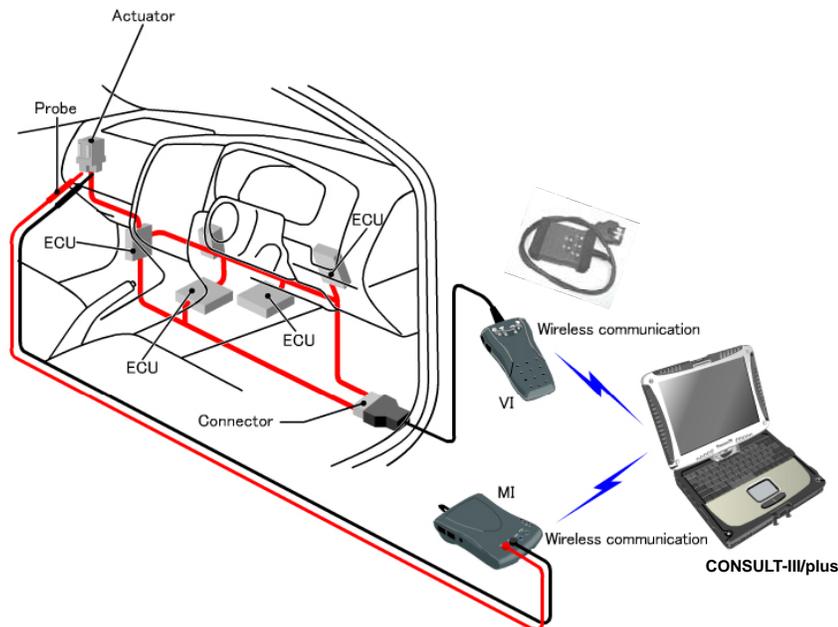
Do NOT allow obstructions, particularly metal ones between the CONSULT-III plus & the VI or MI

Wireless Precautions

Does the wireless communication exert any harmful effect on electronic devices?

Onboard electronic device

Bluetooth is a common wireless communication method.
It has almost no adverse effect on the onboard electronic devices.

Except above

Example: automatic door, fire alarm, other automatic control devices
The Bluetooth radio waves may affect these automatic control devices, resulting in accidents due to malfunctions. Do not use any Bluetooth device near these devices.

Example: pacemaker and defibrillator
The Bluetooth radio waves may affect the operation of a defibrillator.
Make sure to keep the CONSULT–III and associated components away from these devices by at least 22 cm (8.7 in).

Occasional Error Possibility
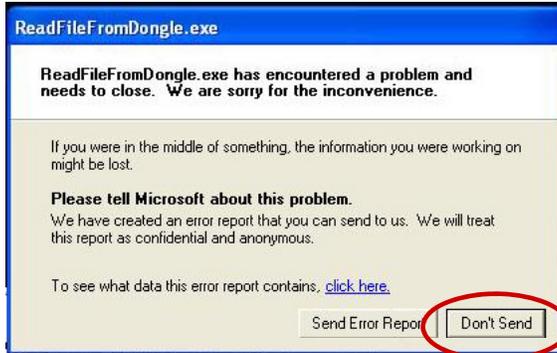
Signal Interference / Dropping out / Crashing Issues:

• **Bluetooth function of mobile phones close by.**

• **Bluetooth equipped wheel alignment machines.**

• **Poorly installed wireless routers (weak signal dropping in / out).**

• **Other Toughbooks with the Bluetooth activated.**

• **Vehicles battery power too low.**

• **Keep software up to date.**

ReadFileFromDongle.exe

ReadFileFromDongle.exe has encountered a problem and needs to close. We are sorry for the inconvenience.

If you were in the middle of something, the information you were working on might be lost.

Please tell Microsoft about this problem.
We have created an error report that you can send to us. We will treat this report as confidential and anonymous.

To see what data this error report contains, click here.

[Send Error Report] [Don't Send]

Only ever click on "DON'T SEND"

From time to time software errors may occur. Typically a window as shown above may appear.

Click on "Don't Send." It will be necessary to disconnect / re-connect the VI & restart the C-III/plus program again

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Controller Area Network (CAN)

TCM | Data link connector | Combination meter | VDC/TCS/ABS | ECM
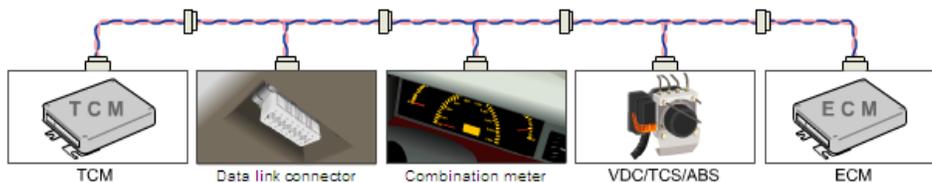
Vehicle CAN Identification

The following pages detail the selection of "CAN TYPE".

If a "CAN COMM" fault is detected it is important to know what control units are fitted to the vehicle as part of the "CAN Line" and then find out why CONSULT has been unable to communicate with them.
To ensure this happens correctly, the technician connecting CONSULT must be aware which "CAN TYPE" is in the vehicle and input the vehicle details correctly.
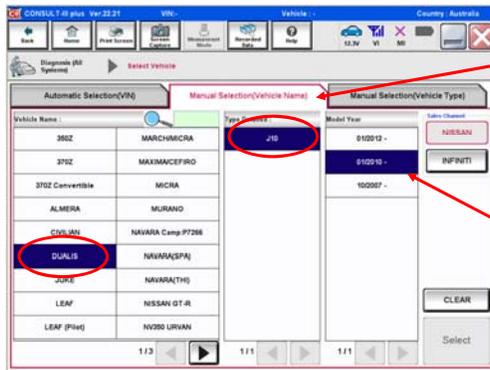
Using "Manual Selection (Vehicle Name)", select vehicle type and confirm vehicle build date (Actual build date, NOT the Australian compliance date).

Select the applicable "Model Year".

Vehicle CAN Identification

From the "All DTC" screen select "CAN Diag".

CONSULT then runs around checking on all the modules it can find on the vehicle.
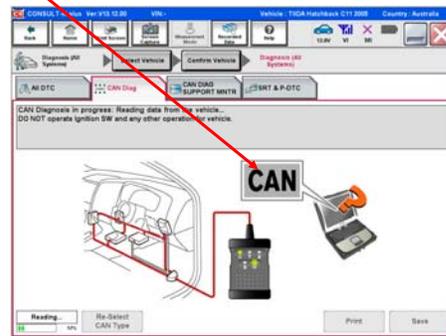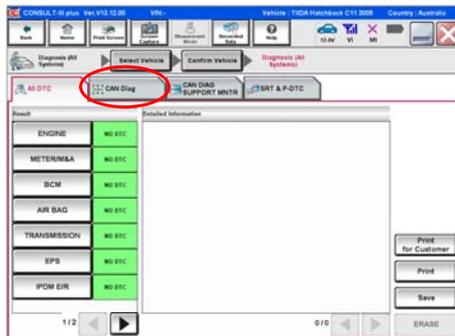
Vehicle CAN Identification

Select the CAN type number if known or input the 18 character Model code which is located on the Factory ID plate (In engine bay or on A pillar / B pillar drivers side.)
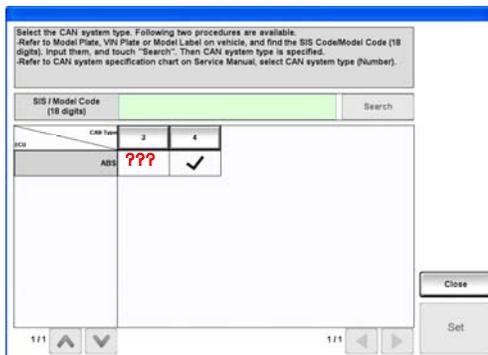**This ONLY applies to the following models;**
C11 / T31 / J10 / Z51 / J32 / Z34 / K13 / N17 (and is expected on future new platform models).
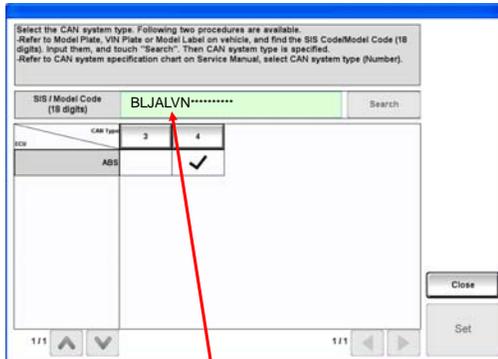
Type the Model code in UPPER CASE
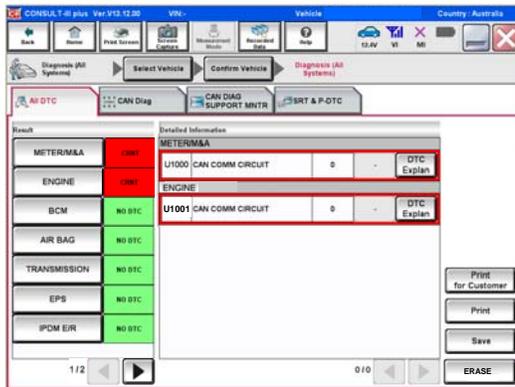here and include all the dashes !!!

Vehicle CAN Identification
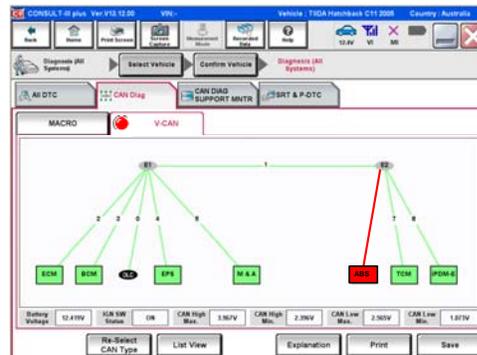
This example shows an ABS C/U fault (it's not communicating).
CONSULT is unable to communicate with the C/U and therefore needs clarification of the "CAN TYPE" in the vehicle.

CAN Type 4 is selected & the "Spider Web" indicates the C/U which is not communicating to the vehicle network.

Vehicle CAN Identification

In this example the CONSULT is unable to communicate with the ABS C/U so the ABS will be not be displayed in this screen.

Engine displays U1001 and METER / M&A displays U1000

but neither control unit has an actual fault of it's own!

They are confirming that they are unable to communicate with another control unit (the ABS control unit).

NOTE:
2005 ~ 2009MY R51 / Spain D40 M/T: U1000 in Meter is normal due to missing Transmission C/U

For models with the "Old Type" CAN (such as D40 or K12), the only way to determine if a C/U is not communicating is to see that it does not appear on the "All DTC" screen.

Match the illuminated Warning lights on the instrument cluster (METER) with the systems listed on the "All DTC" screen.

Vehicle CAN Identification

Below is the entire wiring diagram for the ABS.
The first item to check is the power supply followed by the ground connection.
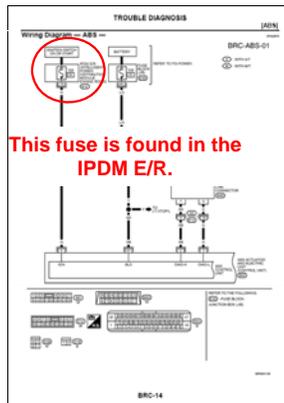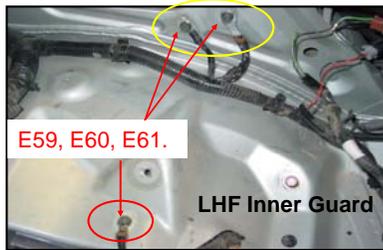

This fuse is found in the IPDM E/R.

E60
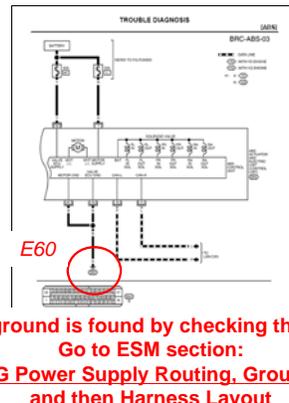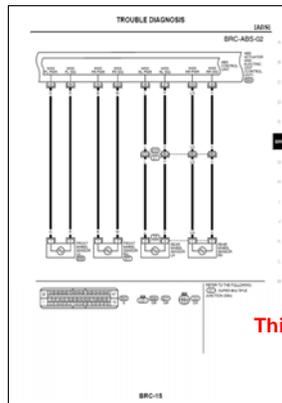
This ground is found by checking the ESM.
Go to ESM section:
PG Power Supply Routing, Ground,
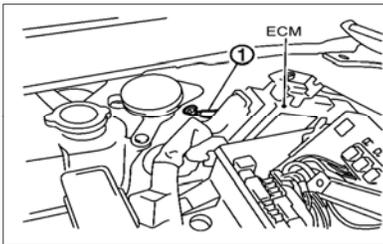and then Harness Layout

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R51 / D40 Ground Locations

LHF Guard under air filter box

E59, E60, E61.

LHF Inner Guard

Behind the battery next to RH strut tower (F7).

RH Inner Guard

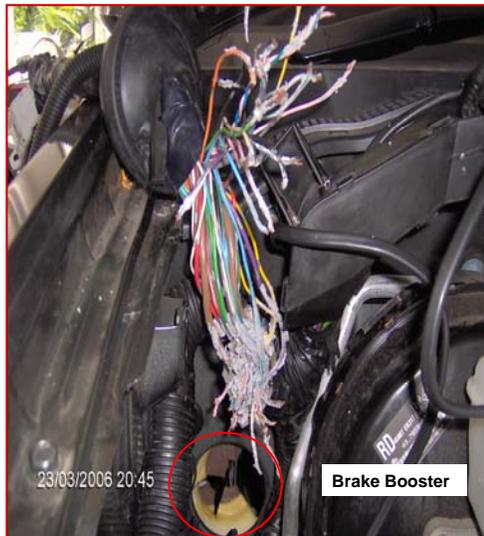**Battery Cradle area**

E41

> Remove Bolt.   > Clean any corrosion at terminal.

> Using emery paper take back to bare metal.   > Refit and tighten bolt.

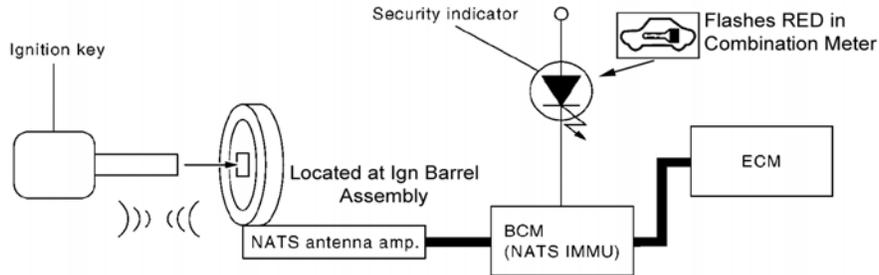**R51 that had a aftermarket trailer brake assembly fitted, with it being plumbed through the drivers side firewall**

23/03/2006 20:45   Brake Booster

23/03/2006 20:44

Main engine loom runs through the firewall to the right of the brake booster assy.

NATS Key Registration
(**N**issan **A**nti **T**heft **S**ystem)

You will find several version's of "NATS" fitted to vehicles coming into your workshop. The above example incorporates the "IMMU" within the "BCM".

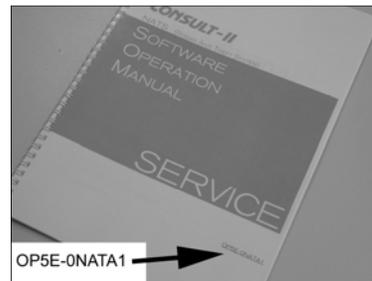The main components of the NATS system are;
-Transponder *(Chip in Ignition Key. Requires no battery. Can withstand water).*
- Receiver *(Wrapped around Ignition Barrel).*
- IMMU *(**IMM**obilizer control **U**nit. Located in the BCM. If no BCM, IMMU forms part of Antenna Amp).*
- ECM.

NATS Key Registration
(**N**issan **A**nti **T**heft **S**ystem)

This Software Operation Manual was distributed to dealers in June 2005

To ensure you know what version of NATS you are working on, it is important to refer to the following:
- NATS Application Chart *(which is regularly updated and posted on the Intranet),*
- Software Operation Manual – for older models *(located within your dealership or inside the C-III machine).*

NATS Key Registration

(**N**issan **A**nti **T**heft **S**ystem)

CONSULT II NATS card

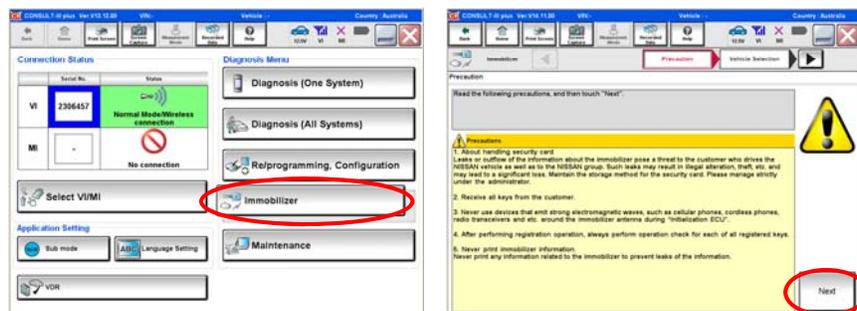**CONSULT-III/plus smart Media and adapter cards**

The "NATS" card is a security card and needs to be kept in a location away from the CONSULT unit. The Software Operation Manual should also be kept secure.

NATS Key Registration

(**N**issan **A**nti **T**heft **S**ystem)

NATS on CONSULT-III plus

To access the correct area for key programming, from the Home screen select "Immobilizer", then follow the on-screen prompts.

NOTE: You won't be able to proceed from the Home screen unless you have the NATS card installed.

NATS Key Registration

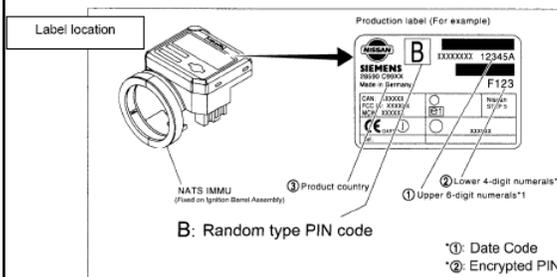(**N**issan **A**nti **T**heft **S**ystem)
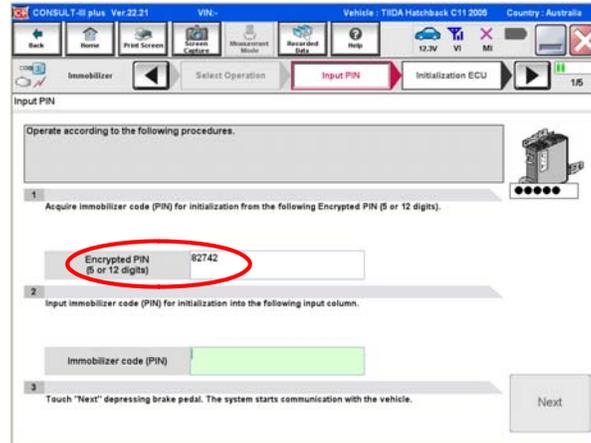
CONSULT will automatically conduct a PIN READ - supplying a 5 digit code that will need to be decrypted on the Nissan Intranet (iNISCOM)

The 5 digit code needs to be converted in a 4 digit number which then needs to be entered into CONSULT-III plus ("C/U INITALIZATION")
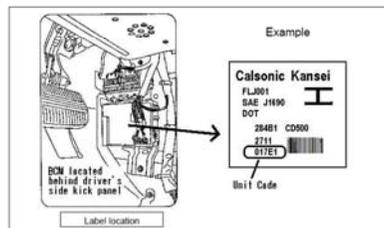

NATS Key Registration

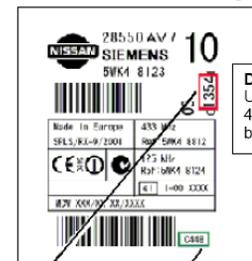(**N**issan **A**nti **T**heft **S**ystem) – older non-PIN read systems

A33 / T30 / N16 Hatch - Cable Throttle

N16 Hatch - Electric Throttle

Z33 if PIN READ not possible

NATS Key Registration

(**N**issan **A**nti **T**heft **S**ystem)

An up to date NATS Application chart can be downloaded from here
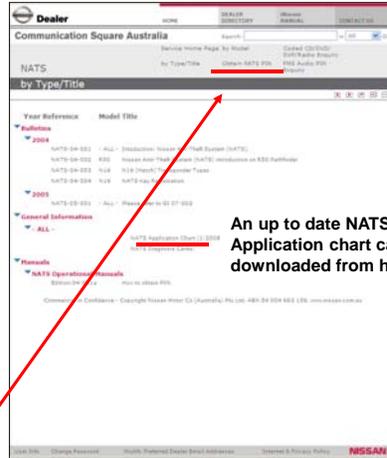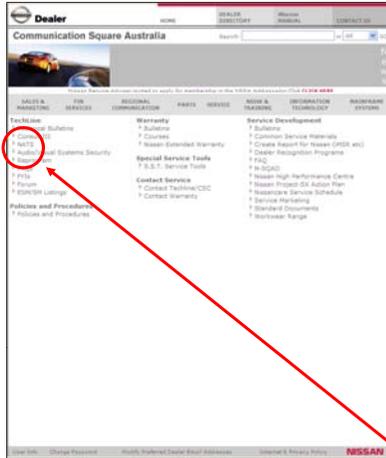
To decrypt the PIN click on the "NATS" link in the "SERVICE" Home page and then "Obtain NATS PIN"

NATS Key Registration

(**N**issan **A**nti **T**heft **S**ystem)

Reference must be made to <u>STB GI09-014</u>

Due to changes of BCM NATS PIN software, if a 5 digit "PIN READ" code is decrypted in Z34, the code will be different to a code decrypted as the other PIN READ models.

Example:

<u>J10 Built Dec 2007 ~ early 2009</u>. Decrypt PIN READ code in J10.

<u>J10 built as of July 2009</u>, decrypt PIN READ code in Z34.

<u>If a pre 2009 vehicle </u>is fitted with a new post 2009 BCM, the PIN READ code will need to be decrypted as a Z34.

After selecting "Obtain NATS PIN" select the model type from the drop down lists.

Vehicle Build		
Up to end 2008	**2009**	**2010 onwards**
Obtain your model vehicle's PIN	Obtain **BOTH** your model PIN AND Z34 PIN	Obtain Z34 PIN
Use your model PIN	**Use Z34 PIN first**	Use Z34 pin **only**
	Excludes: • Y61 CRD • Z51 • T31	Excludes: • Y61 CRD • Z51 • T31

NATS Key Registration
(**N**issan **A**nti **T**heft **S**ystem)

Clicking on this link will offer more details about locating PIN Data

After selecting "Obtain NATS PIN" select model type, input the code obtained from "PIN READ", click "Get NATS PIN" and the decrypted 4 digit PIN is displayed.
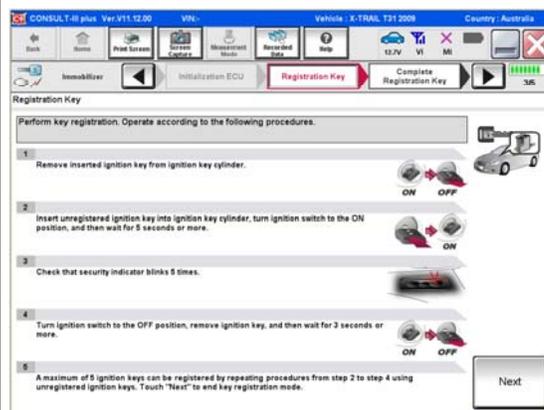
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NATS Key Registration
(**N**issan **A**nti **T**heft **S**ystem)
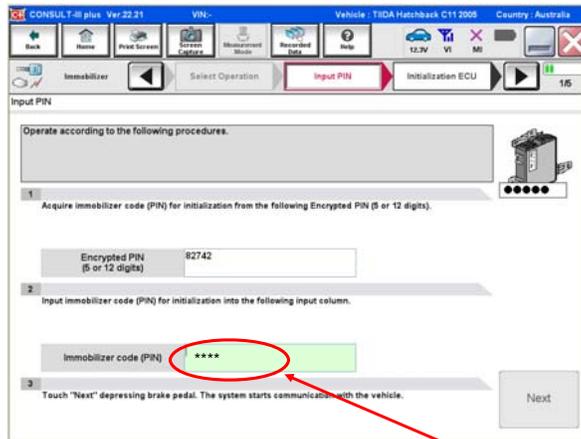
Once the correct PIN has been sourced, input the number obtained from the Intranet and click "Next".

NATS Key Registration
(**N**issan **A**nti **T**heft **S**ystem)

Perform the Key Registration process as per the on-screen instructions.
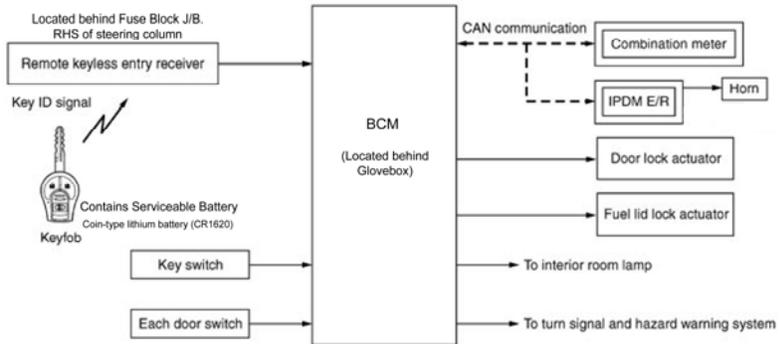
Remember to select "**End**" at the conclusion of the key training process.

INITIALIZATION NOT COMPLETE:
 - Wrong PIN (no DTC's)
 - Faulty Key Head (will log DTC)
 - Other faults (check for DTC's)

"Keyless Entry" Operation

This is NOT a security system. It provides a convenient way to unlock the doors.

The main components of the Keyless Entry system are,
 - Transponder *(key fob or ignition key)*
 - Receiver unit *(independent unit or BCM)*
 - Power door lock system *(Controlled by the BCM)*

The above example is T31 X-TRAIL or K12 Micra