

Operation Guide for GNOV1N GSM/GPRS/EDGE Device

1. Product Overview

GNOV1N is a GSM/GPRS/EDGE - capable device for use within automotive environment to provide wireless connectivity within a vehicle. The device will be installed behind the radio panel of a commercial vehicle during the car factory assembly process. The device has no user interface and will not be assessable without special tools.

- On-board quad-band GSM modem
- Class 4 (2W) @ 850/900 MHz
- Class 1 (1W) @ 1800/1900 MHz
- EDGE/GPRS Class 10
- 3GPP release R4
- MT SMS. Binary SMS only is recognized by application
- Heroshi RF connector
- On-board SIM card connector for 3 V SIM cards
- Automotive-grade system-level connector
- Input Voltage 14V nominal, 9 to 16 V range
- Average current during data call is <350 mA @ 14V

2. Device Installation and User Manual

The GNOV1N device is a proprietary product designed and manufactured by Temic Automotive North America, brand name Continental, for use by an automotive OEM. Because the GNOV1N is not intended for sale as a stand-alone device or offered for sale to general public, the user's manual and sales brochure are not applicable to this product.

Figure 1. Assembled GNOV1N product



3. FCC Note

This device complies with Part 22 and 24 of the FCC Rules. The FCC ID for this device is LHJGNOV1N. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications to this system by other than an authorized service facility could void authorization to use this equipment.

The device must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

5. Test Set-up Description

Figure 2. An assembled test set-up.

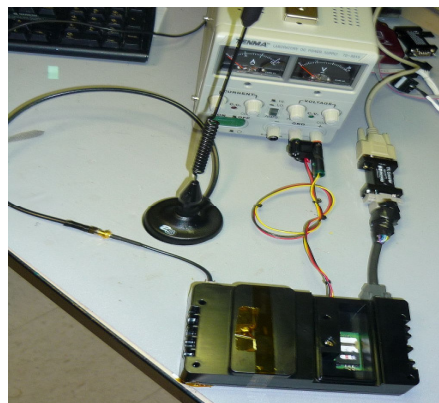
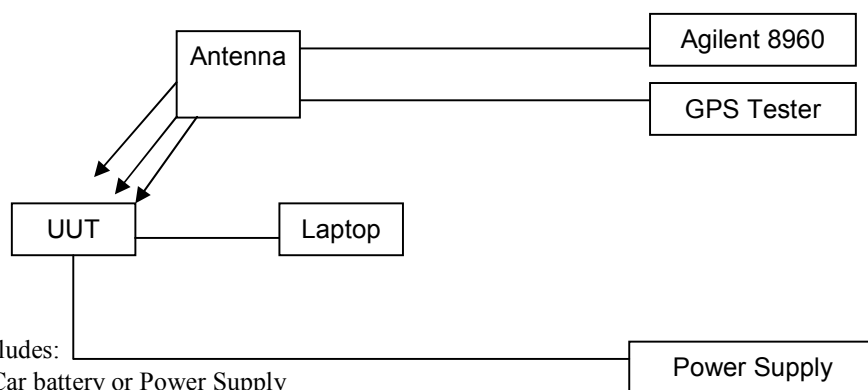


Figure 3: GNOV1N Test Setup Diagram



This set-up includes:

- 13.5V Car battery or Power Supply
- Laptop PC with HyperTerminal

- Antenna (for testing modules with internal GSM antenna) or RF cable
- Agilent 8960 Test Set/ equivalent
- Serial Port Cable
- TTL to RS232 level shifter
- HyperTerminal, Hyper Access or another communication tool for use with HyperTerminal baud rate needs to be set to 57.6Kbits, 8 bits, no parity, no stop bits, and hardware flow control

Quick Start Communication Guide

The following procedure should be followed to communicate with the GNOV1N Module:

- 1) Set the power supply to 12.5V and the current limit to 2.0A.
- 2) Connect Main Wire Harness to the power supply and the module (Power and Ignition High)
- 3) Connect the unit's RS232 – DB9 Breakout to the laptop IO/UART port (COM 1) through a TTL level shifter.
- 4) Turn on the power supply output.
- 5) The module should power on. A banner will appear in the Hyper Terminal window.
- 6) Use the primary UART to communicate with the SVT module using HyperTerminal, Hyperaccess etc. “Normal>” message will appear when module powers on, see screen shot below.
- 7) Type **AT+XNADPIDCTRL=0** to enter test mode (minimize interference from the application SW). To re-enable PID, a NAD power cycle should be performed
- 8) Type AT commands to communicate with the GSM modem. Please follow these at the beginning of certification testing to insure successful continuous test session:
 - a. Enter **AT+xl1set="psvoff"** to insure that the SVT module does not enter a power save mode - Recommended
 - b. **AT+CMEE=2** to enable text Error reporting – Recommended
 - c. **AT+CMGF=1** to enable test SMS test mode – Recommended. AT+ CMGF=0 is to enable PDU mode.
- 9) Execute AT command tests.
- 10) To turn the module off, turn off the power supply output.

Quick Start GPRS Call Guide

- 1) Insure that the GPRS is attached (CGATT is set to 1 when sending AT+CGATT?). If not then send the command: **AT+CGATT=1**
- 2) In order to establish a GPRS call, tester needs to send the following command in order to specify specific PDP context parameter values for a PDP context, like in the example below:
AT+CGDCONT=1,"IP","xxx.xxx"
- 3) Where is [xxx.xxx] is an APN. This can vary based on the carrier.
- 4) Make sure that the PC modem baud rate settings are the same as the SVT baud rate setting which is 57600 bps during normal test cycle. The dial up menu properties (modem setting) should be set to the same baud rate as well.
- 5) Start GPRS call using the PC Dial up connection with the right user name, password, and dial number.
Example:
 - o User Name: WAP@xxxxxxxGPRS.COM
 - o Passcode: Passcode1
 - o Dial Number: *99***1#
- 6) To turn the SVT module off, turn off the power supply output.
- 7) It is recommended to refer to “How to Setup GPRS Call.doc” for more information about making GPRS calls and browsing using the PC

Figure 4: Screen Shot of HyperTerminal while in communication with GNOV1N.

```
*****
* NISSAN_CHINA_DCM *
* *
* (C) Continental AG 2003-2011 *
* SW Version: NISSAN_CHINA_DCM_01.01R *
* SW Date : 14082009 1 *
* SW Build : Aug 14 2009 17:13:38 *
* *
* Startup : Normal (after key on) *
*****
BGT_TEST> switch to NORMAL>

NORMAL>
0004.958:GPS:Rha:4: GpsAntennaDiag: GPS Antenna Tampering Check STATE
0010.245:IMM:Rha:4: ImmoApp: IPC did not response to initial ImmoRequest before
timeout!at
OK
at
OK
at+xnadpidctrl=0
OK
at+xL1set="psvoff"
OK
at+cgmi
+CGMI: Continental Automotive Systems
OK
at+cgmr
+CGMR: "NISSAN_CHINA_DCM_01.01R_34R_V1
```