

# User Guide



NOVACOM *wireless*

**GNS-30CR**

# 1. Safety information

Radio device have limitations in the vicinity of electronic devices:

- Switch the Modem off when you are in a hospital or near medical devices like pacemakers. The Modem may interfere with the operation of these devices.
- Switch the Modem off when flying. Secure it so that it cannot be switched on inadvertently.
- Switch the Modem off when you are near petrol station, fuel depots, chemical plants or blasting operations. The Modem can disturb the operation of technical equipment.
- Interference can occur if the device is used near televisions, radios.
- In order to avoid possible damage, we recommend that you only use the specified accessories. These have been tested and shown to work well with the Modem.

**Note: The warranty does not apply in the event of improper use.**

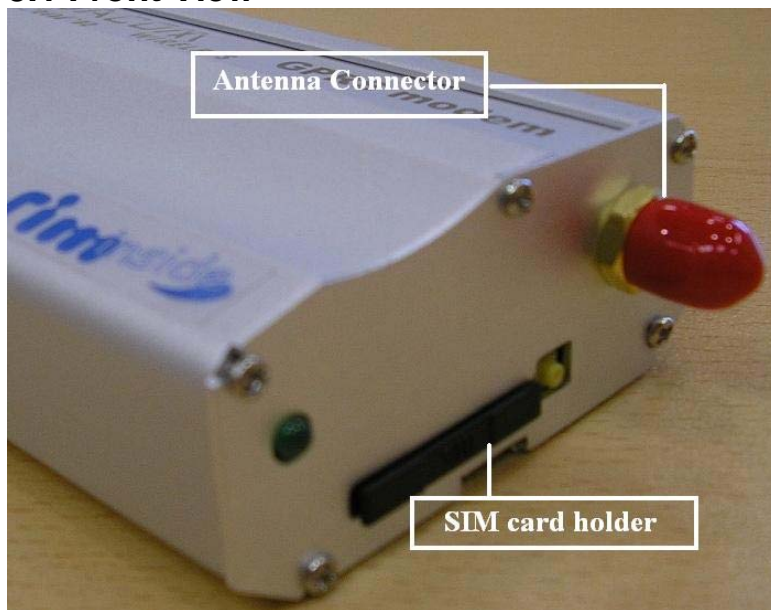
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## 2. Contents

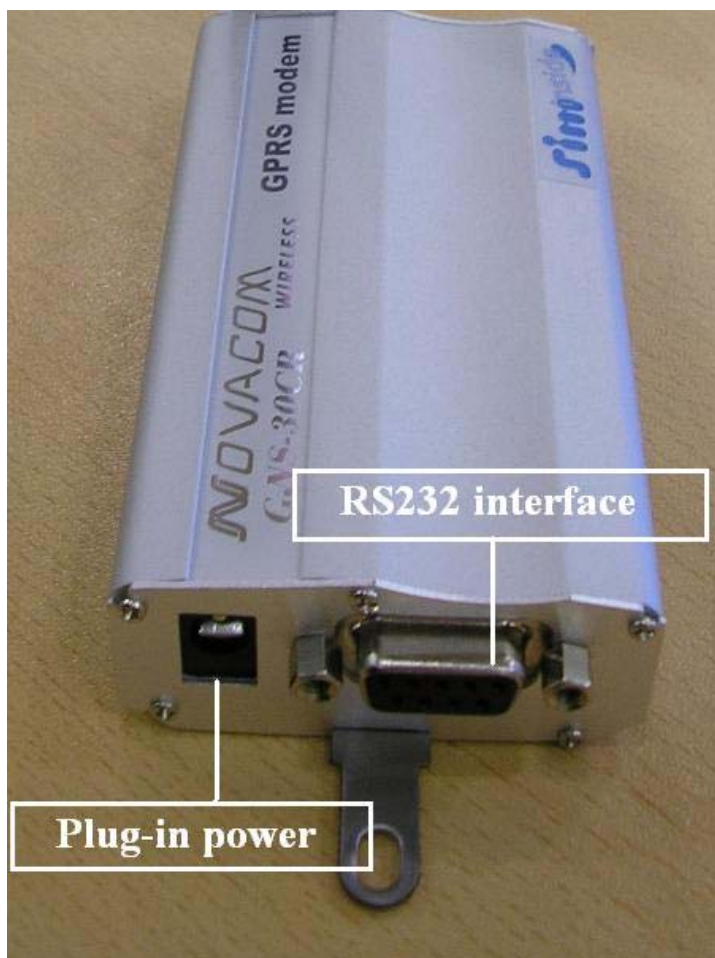
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## 3. Overview

### 3.1 Front View



### 3.2 Rear View



## 4.Product description

The **NOVACOM *wireless*** Modem makes integration as simple as possible, primarily for users in the M2M market segment: a stand-alone device, the Modem is fitted with standard interfaces for a power supply, an antenna, a PC, and a handset, with its plug & play technology making it very easy to put into operation. Thanks to its robust case, the **NOVACOM *wireless*** Wireless Modem is ideal for use in many different business segments, such as in measurement and remote maintenance, traffic systems, transportation and logistics, vending machines, security, and building technology.

## 4.1 Highlights

- Support band:  
GNS-30CR: EGSM900/DCS1800/PCS1900 Data,  
voice, SMS and fax
- Easy to integrate
- Standard Industrial interfaces
- LED display
- Wide input voltage range
- Highly compact, light and powerful
- Integrated SIM card holder
- SIM application toolkit
- Extended AT commands for industrial applications
- Simple integration via plug&play
- Net support:  
GNS-30CR: GSM/GPRS

## 4.2 Applications

- Security systems
- Traffic system
- Fleet management
- Teleservice
- Telematics
- Telemetry
- Remote monitoring
- Remote control
- Remote meter reading
- Mobile office
- Vending/POS

# 5. Features

## 5.1 Product data

- Support band:  
GNS-30CR: EGSM900/DCS1800/PCS1900  
Certified in accordance with GSM phase 2/2+
- Output performance:
  - Class4(2W) for GSM850/EGSM900
  - Class1(1W) for DCS 1800/PCS 1900
- Control via AT commands
- Input voltage range DC+6..... +30V
- Dimensions: 122 × 68 × 21.6mm
- Weight: approx.165g
- SIM card: 3V or 1.8V
- Data interface: 9pinRS232
- GPRS multi-slot class 10
- EDGE multi-slot class 12
- GPRS mobile station class B



## 5.2 SMS

- Point-to-point MT and MO
- SMS cell broadcast
- Text and PDU mode

## 5.3 Data

- CSD up to 14.4kbps
- USSD
- Non-transparent mode
- GPRS: max.85.6kbps (downlink)  
max.42.8kbps (uplink)
- Coding scheme CS 1,2,3,4
- PPP-stack, TCP/IP protocol

## **5.4 Fax**

- Group 3, classes 1

## **5.5 External interfaces**

- Connector for plug-in power supply unit
- Handset audio interface (optional)
- Mini-SIM card holder
- Antenna connector SMA (female)
- RS232 interface

## 6. Installation

### 6.1 Package contents

- NOVACOM *wireless* GNS-30CR
- NOVACOM *wireless* GNS-30CR user guide
- Antenna
- Power supply adapter
- RS232 cable

### 6.2 Safety and installation information

- The Modem should be installed and set up only by qualified personal.
- Connect at fast 1.25 A fuse to the incoming line for the positive supply voltage to protect the Modem.
- The maximum permissible connection length between the Modem and the supply source is 3m.

## 7. Interface description

The following interfaces are available on the Modem:

- Connector for the plug-in power supply unit
- Handset connector
- SIM card holder
- Antenna connector SMA(female)
- RS232 interface

## 7.1 Plug-in power supply units

- The Modem receives its power supply in a wide voltage range (+6V.... +30V) via the power supply connectors,

power interface: internal + / external –supply

adaptor:

Object	Description	Current	Parameter	
Input	Adaptor Input	AC	220V(100~240V)	50Hz
Output	Adaptor Output	DC	6V(±5%)	2A

## 7.2 SIM card holder

The connector is intended for 1.8V or 3V SIM cards in accordance with GSM 11.12 phase 2 to operate the Modem.

The SIM card must be inserted in the card holder to put the Modem into operation.

- 1) Make sure that there is no voltage applied to the Modem.
- 2) Operate the eject mechanism (yellow pin next to the card holder) to open the card holder by pressing it down with a pen, for example
- 3) Insert the SIM card holder and push it back into the housing. **Note: The SIM card only be replaced when no voltage applied to the Modem. SIM card pin assignments:**

Signal	Pin No.	Input/Output	Description	Parameter
<b>GND</b>	<b>1</b>	x	Gnd	
<b>VPP</b>	<b>2</b>	x	N.C	
<b>I/O</b>	<b>3</b>	Input/Output	Input/Output interface	Input: $R_i \geq 1M\Omega$ Output: $R_o = 220\Omega$
<b>CLK</b>	<b>4</b>	Output	Clk	$R_o = 220\Omega$
<b>RST</b>	<b>5</b>	Output	Reset signal	$R_o = 220\Omega$
<b>VCC</b>	<b>6</b>	x	Power	1.8V: ( $VCC = 1.8V \pm 2\%$ ) 3V: ( $VCC = 3V \pm 2\%$ )

## 7.3 Antenna connector SMA (female)

A quad band antenna (GSM850/EGSM900/DCS1800/PCS1900) can be connected to the RF interface. The connection is implemented as a 50  $\Omega$  SMA (female) coaxial jack.

### Pin assignments:

Signal name	Pin	Function
RF	Input	RF Input/Output
GND	Output	Frame connecting

## 7.4 RS232 interface

The RS232 interface is the interface for the application software and the connection to the PC. The customer application communicates with the Modem by AT cellular commands. The RS232 interface is implemented as a 9-pin D-Sub socket with two screws fitting.

### Pin assignments:

Signal	Pin	Input/Output	Description
DCD	1	Output	Serial port V.24 protocol(for reference)
<b>RXD</b>	2	Input	
<b>TXD</b>	3	Output	
<b>DTR</b>	4	Output	
<b>GND</b>	5		
<b>DSR</b>	6	x	
<b>RTS</b>	7	Output	
CTS	8	Input	
<b>RI</b>	9	Input	

## **Use and operation**

In order to control the Modem and Transfer data, the customer application (e.g. host computer) is connected via the RS232 cable.

**Note: NOVACOM *wireless* GNS-30CR Modem must be connected via a RS232-USB**

**converter which baud rate can support at least 230400bps.**



## 8. Startup

Before startup, the components required for your application must be connected. The SIM card must be inserted into SIM card holder.

The Modem is ready for operation when supply voltage is applied and the ignition line is activated. If the recommended plug-in power supply unit is used, the ignition line is already connected to the supply voltage line, and the Modem is thus immediately switched to the active state. It starts the network search and registers with network operator.

## **Operating states/LED**

The LED display the following states of the Modem:

### **State in GSM network**

Note: Usually, the net work search takes only a few seconds till the Modem is registered, if the flashing every 0.85 seconds continues, this means that no SIM card is inserted, no PIN number is entered or no GPRS network is available.

## **9. AT command control**

The Modem is controlled and programmed by means of AT commands. The AT commands structure corresponds to the SIM module used. For obtain the AT commands or more help, please contact our FAE.

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