

# Hit 65i datasheet



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# 1. Copyright

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## 2. Introduction:

HCP HIT is a new line of modems that enables data, fax, audio or SMS applications. Basically there are 2 different options. HIT modem can be with RS232 or USB interface connection.

### Specification for data transmission:

- HSDPA *max 3.6Mbps(DL),max 384kbps(UL)*
- UMTS *max 384kbps(DL),max 384kbps(UL)*
- EDGE *max 237kbps(DL),max 118kbps(UL)*
- GPRS *max 85.6kbps(DL),max 42.8kbps(UL)*

### **So next options are available:**

- **HIT 65i USB** is GSM/GPRS Quad band modem based on Cinterion **TC65i** (*GPRS multi-slot class 12, CSD up to 14.4kbps*) with USB interface
- **HIT 65i RS232** is GSM/GPRS Quad band modem based on Cinterion **TC65i** (*GPRS multi-slot class 12, CSD up to 14.4kbps*) with RS232

All types have push-push slot for SIM card, external SMA connector for GSM antenna, sync LED and internal hardware watchdog circuit that keeps the modem turned on.

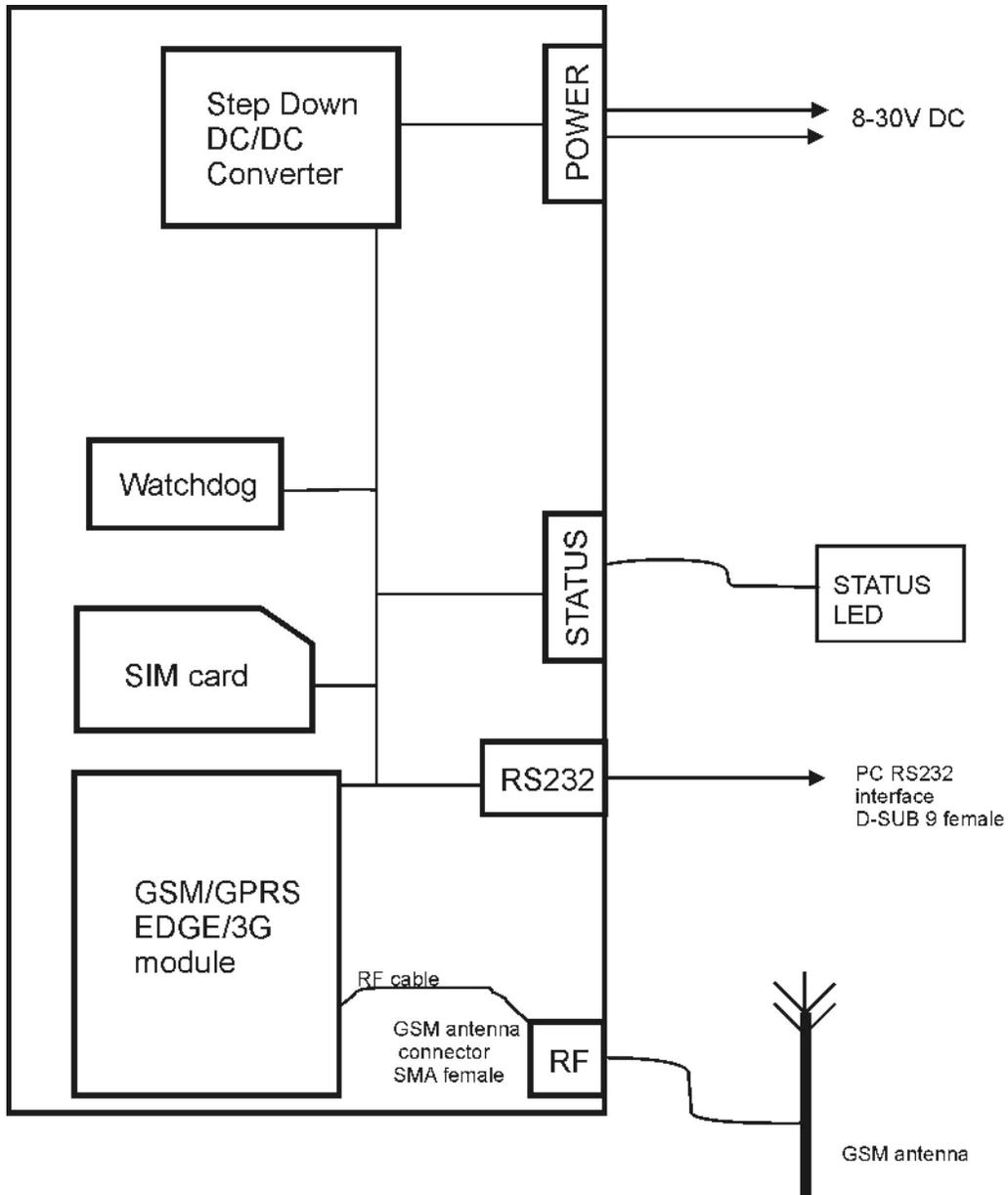
All these features packed in a robust metal housing makes HIT ideal solution for industrial as well as home appliances.

### **General features:**

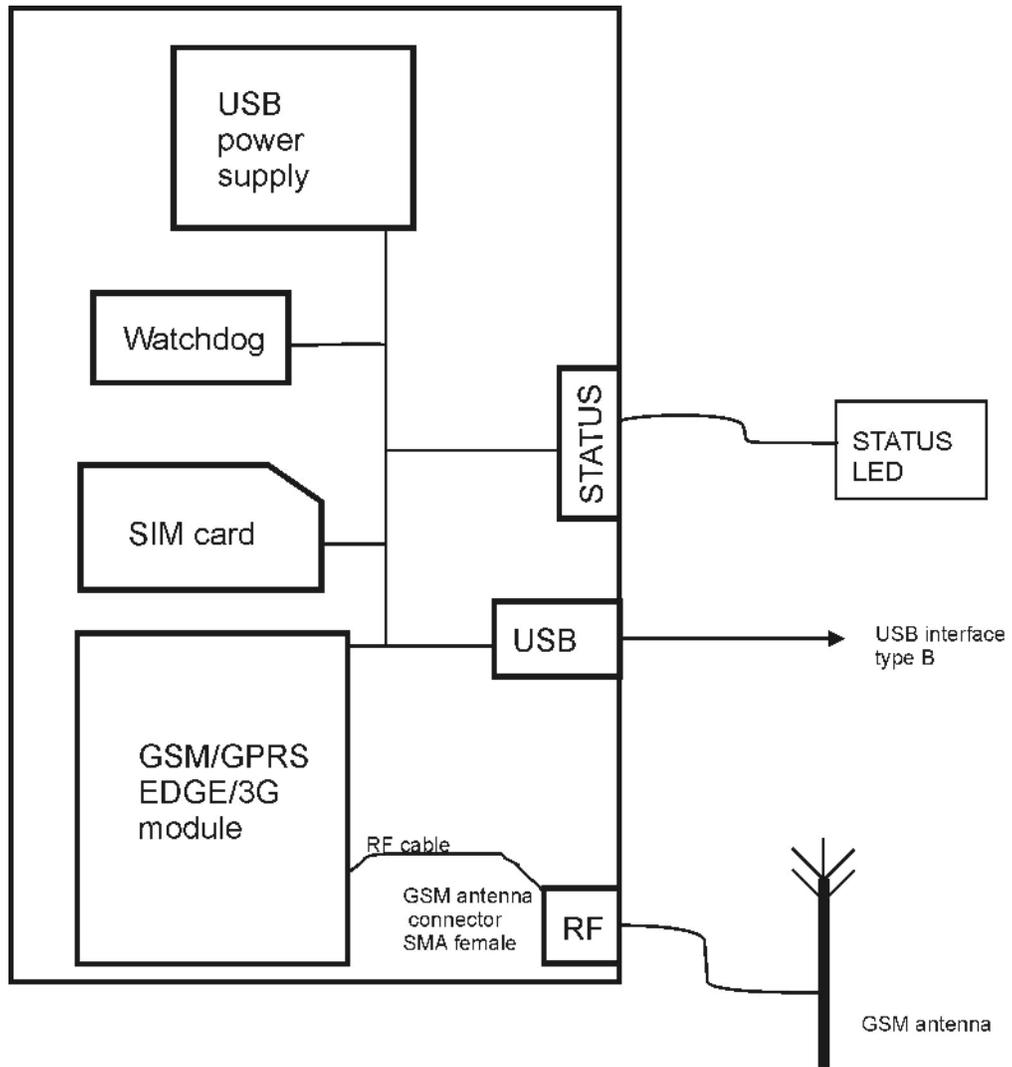
- Supply voltage range: 8 – 30 V (RS232 version)
- USB version is supplied from standard USB interface
- Robust industrial housing
- Dimensions: 78 x 54 x 26mm
- Wight approx. 170gr
- Ambient temperature range: -30 to +75 °C

### 3. Block diagram

#### Hit 65 RS232



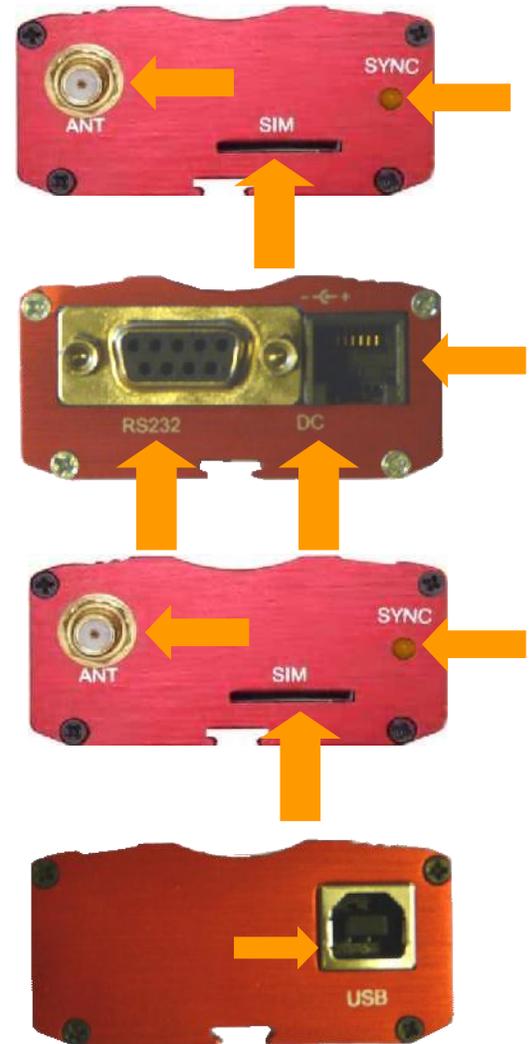
## Hit 65 USB



## 4. Connectors pin-out

**HIT RS232** front and back panel connectors:

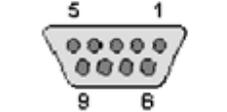
1. SMA antenna connector for GSM
2. SIM card push-push connector
3. Status LED diode
4. RS232 connector
5. Power supply connector



**HIT USB** front and back panel connectors:

1. SMA antenna connector for GSM
2. SIM card push-push connector
3. Status LED diode
4. USB connector



 <p>RS232 interface</p>	<ol style="list-style-type: none"> <li>1. DCD(output)</li> <li>2. RXD (output)</li> <li>3. TXD (input)</li> <li>4. DTR (input)</li> <li>5. GND</li> <li>6. DSR(output)</li> <li>7. RTS(input)</li> <li>8. CTS(output)</li> <li>9. RING(output)</li> </ol>
	<ol style="list-style-type: none"> <li>1. VCC</li> <li>2. DATA +</li> <li>3. DATA -</li> <li>4. GND</li> </ol>

## 5. Power supply ratings

HIT RS232

Parameter	Description	Min	Typ	Max	Unit
<b>V<sub>in</sub></b>	Supply voltage	+8	+12	+30	V
<b>I<sub>in</sub></b>	Max supply current V <sub>in</sub> =8V			1000mA	mA
	V <sub>in</sub> =12V			650mA	
	V <sub>in</sub> =30V			250mA	mA
<b>P<sub>tot</sub></b>	Supply power			3.2	W

HIT USB

Parameter	Description	Min	Typ	Max	Unit
<b>V<sub>power</sub></b>	Supply voltage	+4.75	+5	+5.25	V
<b>I<sub>power</sub></b>	Max supply current			500mA	mA
<b>P<sub>tot</sub></b>	Supply power			2.5	W

## 6. RS232 interface characteristic

Parameter	Description	Conditions	Min	Typ	Max	Unit
V <sub>OUT</sub>	Transmitter Output Voltage for /RXD, /CTS	@ 5kOhm load	±5	±5.4		V
R <sub>OUT</sub>	Transmitter Output Resistance /RXD, /CTS		300	50k		Ohm

$V_{IN}$	Input voltage range /TXD, /RTS, /DTR		-25		25	V
$R_{IN}$	Input resistance of /TXD, /RTS, /DTR		3	5	7	kOhm
$V_{RIHYS}$	Input Hysteresis			0.5		V
$V_{ilow}$	Input Threshold Low		0.6	1.1		V
$V_{Ihigh}$	Input Threshold High			1.5	2.4	V
Baudrate	RS232 baudrate depending of the module	Fixed bit rate	300	115200	460800	bps

## 7. USB interface description

For applications where RS232 connection is not available, USB modem version can be used.

USB modem is used in a similar manner as it is connected to the standard RS232 COM port because USB modem is installed as USB to serial converter.

Baud rates available apply as for RS232 interface.

HIT USB modem draws power from standard USB port.

## 8. Important remarks prior to the modem installation

Congratulations on and thanks for deciding to use the products of HCP d.o.o



### HCP HIT Modem

Before installing this product, make sure that the genuine HCP modem-box pack contains all the items as follows:

- HCP LC modem with antenna;
- Installation CD;
- Warranty form.

**Should any component be missing or damaged, do not hesitate to contact your local dealer.**

## Important remarks for safe handling

This section contains important information and instructions to help you handle the device efficiently and safely. You are kindly requested to read the Manual carefully before starting using the device.

### INSTALLATION

***Reading and following the instructions*** – MAKE SURE TO CAREFULLY read the instructions contained herein before starting using the modem and during the installation and using the device.

***Temperature range of application*** – You are kindly requested to use the device within the temperature range of application as described hereinafter in the section “Technical characteristics of the modem”. Should you fail to obey this instruction, the warranty SHALL NOT be valid.

***Keep it away from water*** - Do not use the device in the vicinity of sources of humidity or water, such as sinks, baths and water containers.

***Keep it away from sources of heat*** – such as cookers, hotplates, ovens, heaters.

***Do not cover the device in operation*** – The housing contains air vents for cooling the device. Covering these vents may cause malfunction and faulty operation of the device.

*SHOULD ANY OF THE ABOVE LISTED INSTRUCTIONS BE DISREGARDED  
, THE WARRANTY SHALL BE NULL AND VOID.*

## Compatible computers

### HCP HIT RS232

Minimum requirements for correct operation of the modems are:

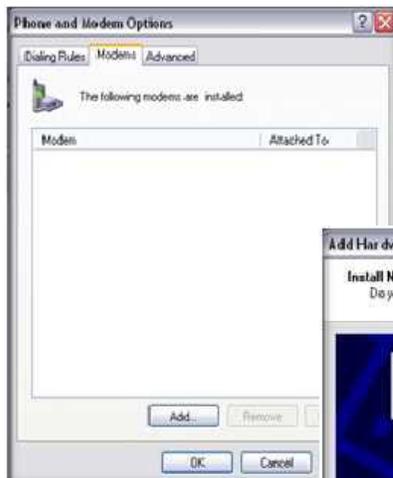
- Pentium I 100 MHz or a compatible PC with a free RS-232 port
- 16 MB internal memory
- Installed Microsoft Win 3.11/95/98/ME/NT/2000/XP/VISTA, Linux, Unix SCO, BSD ...

## 9. Modem Installation

### Installation to Win XP and Vista

Before you start installing, you are to connect the modem to AC/DC adapter. Then, connect it to the computer via RS-232 cable. Only when you make sure that all components are correctly connected, and that there is ON at the front side of the device, you can start installing.

**Start >Settings >Control Panel**, the following screen is displayed:



In the **Control Panel** select **modem and phone option**, then **Modems** presents the following display:



Then clicking the **Add** window starts adding a new modem into the system, and the following display is presented:



Tick the option: “Don’t detect my modem; I will select it from a list”. Then, in the next display select **Standard Modem Types** and **Standard 19200 bps Modem**.



Then select the free COM port to which the modem is connected:



Wait for the installation process to finish. Then, select **Properties**, as in the next Figure

- In the **Modem** option  
“**Maximum Port Speed**” selects 115200.
- Then **OK**.
- Whereby the modem installation has been successfully completed.



### **Recommendations**

*If you have chosen our device HC75 ,to take advantage of EDGE connection, when choosing a modem instead of standard modem, select an option HAVE DISC, and choose the file **MC75.inf**, install the modem and then optionally set a baud rate 430 600.*

### **Annotation**

*Max hardware PC port baud rate is limited to 115 200*

For USB version before you start installing, connect the device to the computer via USB cable. Only when you make sure that all components are correctly connected, and that there is ON at the front side of the device, you can start installing. After plugging the USB Device.

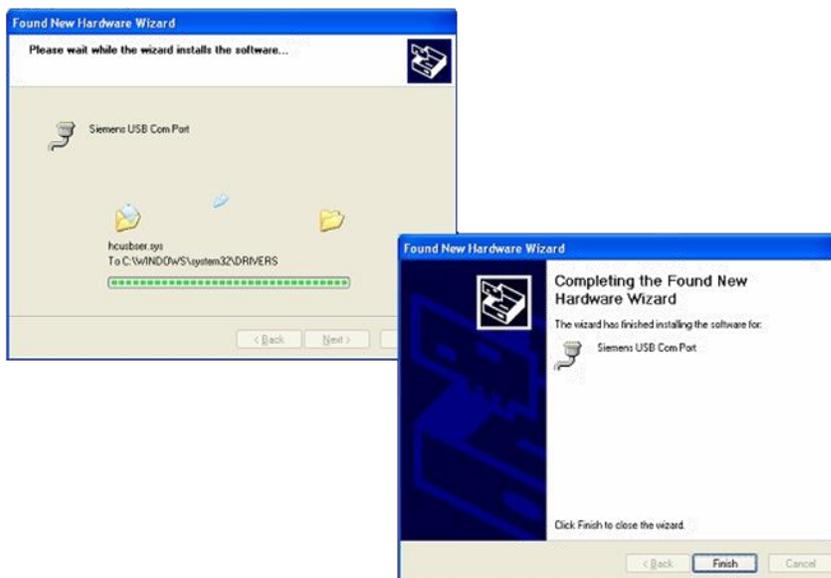
The *Found New Hardware Wizard* will start. Click *Next* to proceed with the installation of the “USB Com port”.



The progress of the driver is dedicated.

It is possible that there are up to 3 warning messages saying that the drivers are not digitally signed. please ignore messages and press *continue anyway*.

Click *Finish* to complete the installation of the “USB Com Port”.



Now the installation of the “HIT USB Modem” will start. Click *Next*.

The progress of the driver installation is indicated.

It is possible that there are up to 3 warning messages saying that the drivers are not digitally signed. Please ignore the messages and press *Continue anyway*.

Press *Finish* to complete the “HIT USB Modem” installation.

You can go on to the next Chapter - [11. Line Parameters and](#)

## [Connection Setting](#)

# 10. HIT Installation for other operating systems

Before you start installing, you are to connect the modem to AC/DC adapter. Then, connect it to the computer via RS-232 cable. Only when you make sure that all components are correctly connected, proceed with the installation. The installation process depends on the Operating system.

HCP\_HIT RS232 is fully compatible with AT commands.

# 11. Line paramaters and connection setting

Before any starting or setting the paramaters to access the Internet, insert the SIM card into the modem.

Line parameters vary, depending on the mobile operator, so make sure that you have got a complete Manual, and that you have read and studied it thoroughly.

This Manual contains the following data:

Parameters	Example Telekom Telenor
<ul style="list-style-type: none"><li data-bbox="280 474 545 510">• User name:</li><li data-bbox="280 575 578 611">• Access code:</li><li data-bbox="280 676 691 711">• Telephone number:</li><li data-bbox="280 777 423 812">• APN:</li></ul>	mts mobtel  064 internet  *99***1#  "internet"

**IMPORTANT NOTICE:** *before inserting the SIM card into the modem, make sure that the card is unblocked, ie. That it is not PIN protected. This can be easily checked by inserting the card into a mobile telephone.*

Once you have installed the modem, click the **Start>Settings>Control panel:**



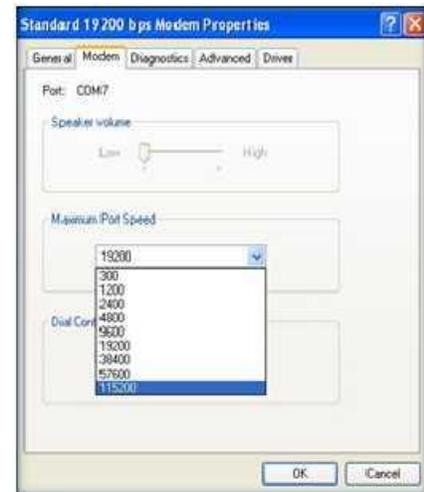
In the **Control Panel** select **Phone and Modem Option:**



In the resulting dialogue select the card **Modems**, and there select "**HCP GPRS Modem**", then the key **Properties**.



In the new dialogue select the card **Modem**, and in the descending menu select the maximum offered speed at **115200**. Then select the card **Advanced**.



In the card **Advanced** and the field **“Extra initialization commands”** enter the parameter depending on the mobile operator (for example: **Telekom: at+cgdcont=1,"IP","PAP:gprsinternet" or “CHAP:gprsinternet”**).

### Setting up connection:

Click on *Network* in *Start Menu* and *Add New Connection Wizard* will start. Click *Next* to proceed with the installation.





- Set up my connection manually
- Connect using a dial up modem
- ISP name



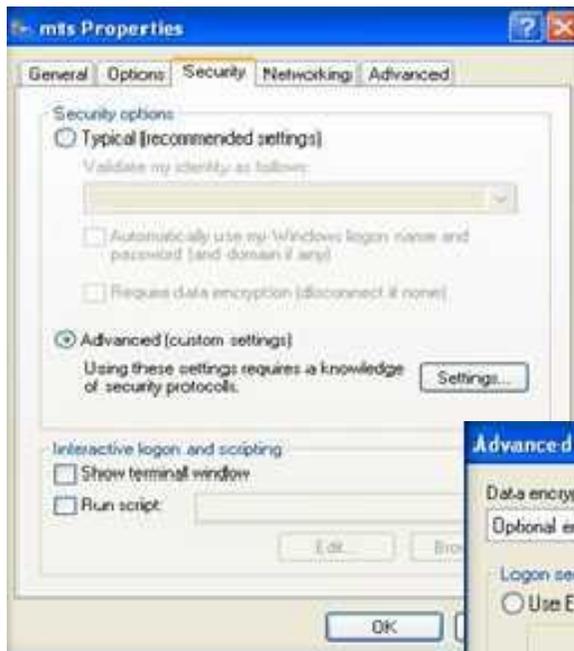
- Phone number
- And account



- Click Finish
- The installer will automatically finish the installation.



After successful installation, the devices press *Connect to*. You can use the *Properties Manager* to set up unnecessary settings. Check does all properly configure.



## 12. Terms and definitions

### **SIM**

SIM (Subscriber Identity Module) is a card containing all the relevant information on the GSM subscriber. SIM is actually the connection between the device and the network, and it has three primary functions. The first function is the control of connecting the network (authorization, logging in, receiving calls and calling). The second function is storing the basic data of the subscriber and personalization of the services, such as SMS and bill control. The third, a marginal one, is visual advertising and labeling the operator. The SIM card dimensions are 1 x 1.5 cm.

### **GSM**

**GSM** (Global System for Mobile communications) introduced as long ago as 1992, nowadays the most widespread system of mobile phone service based on the digital technology. It was the beginning of a new era of modern communication. Nowadays three frequency ranges for GSM mobile phone service are used worldwide.

**GSM900** in use in most of Europe and Asia.

**GSM1800 Digital Cellular System (DCS)**, developed some time later in the frequency range of 1,800 MHz, and nowadays it is used in Western Europe. It is often marked as **GSM1800**.

**GSM1900** Personal Communications Systems (PCS) in the range of 1,900 MHz, used in the territory of North America, ie. the USA and Canada, and some countries of Latin America and Africa.

### **GPRS**

GPRS (General Packet Radio Switching), as a standard of the European Telecommunication Standards Institute (ETSI), as a part of the GSM 2+ phase. GPRS is an implementation of the package data (voice) transfer – instead of sending a constant series of data via a permanent connection, GPRS optimizes the data to be transferred by grouping them into packages, when necessary.

Using the GPRS, the GSM users are allowed to download/upload the data at the theoretical speed of up to 171,2 kbit/s.

### **GSM-->GPRS-->EDGE-->WCDM(UMTS)-->HSDPA.**

**GSM:** 2G European standard and the first digital mobile system. It offers only circuit-switched traffic (i.e voice calls, SMS...etc) and data transfer at very low bitrates 9.6kbps.

GSM did not support packet data.

**GPRS:** also referred to as phase 2+. It offered packet-switched traffic with new network components integrated over the existant GSM core network. This allowed data bitrates to increase to 171kbps. It is also considered as the first step towards 3G networks.

GPRS supported packet data at 171.2 kbps theoretically with new network elements in Core network (SGSN and GGSN).

**EDGE:** It was made to cover the delay of delivery of 3G/UMTS network. It supported data rates upto 384kbps.

EDGE uses same network elements as GPRS but with new Modulations (8PSK) instead of GMSK in GSM/GPRS. EDGE supported 384 kbps theoretically.

**UMTS:** the first 3G European standard network. It is the optimal solution for GSM operators to support 3G services. The Air interface technique used for this network is WCDMA. This technique allowed data rates to reach 2Mbps.

WCDMA(UMTS) is a 3G evolution for GSM family. it supports 2Mbps on forward link. WCDMA uses different radio access network (node B and RNC) rather than BTS and BSC in GSM/GPRS/EDGE networks.

**HSDPA:** It is actually a software upgrade to the UMTS network using the same air interface technique used in UMTS (WCDMA) and supporting data rates up to 10Mbps.

HSDPA is nothing but the improved downlink packet data transfer on UMTS networks. IT supports up to 14.4 Mbps theoretically.

\*Note:- GPRS,EDGE and HSDPA are DATA networks only i.e. they do not support circuit switched voice. GSM supports circuit switched voice and circuit switched data both. UMTS supports circuit switched voice and packet data.

## 13. Warranty conditions

The warranty is valid for one year starting on the date of selling.

- In case of a defect, the Manufacturer shall remove the defect within thirty (30) days from the date the device has been brought to the service shop.

Should the Manufacturer fail to remove the defect within the period described above, the Manufacturer shall deliver a new product to the Buyer, ex works the central service shop or a local distributor nearest to the Buyer's office.

### THE WARRANTY IS NOT VALID IN THE FOLLOWING CIRCUMSTANCES

- If the defect is caused by inadequate handling, *force majeure* (electric discharge, defects of the supply line),
- In case of mechanical damage,
- If an unauthorized person repairs or modifies the device
- The adapter and the USB cable are not subject to the warranty.