Hit 65i datasheet





Contents

- 1. Copyright
- 2. Introduction
- 3. Block diagram
- 4. Connectors pin-out
- 5. Power supply ratings
- 6. RS232 interface description
- 7. USB interface description
- 8. Important remarks prior to the modem installation
- 9. Modem installation
- 10. Installation HCP HIT RS232 for other Operating Systems
- 11. Parameters for the connection setting
- 12. Identify items
- 13. Warranty conditions



1. Copyright

Copyright©2010, HCP Communication Products.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means without the prior permission of HCP Communication Products. HCP shall not be responsible for any damage caused by the use of the product contained herein.

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.

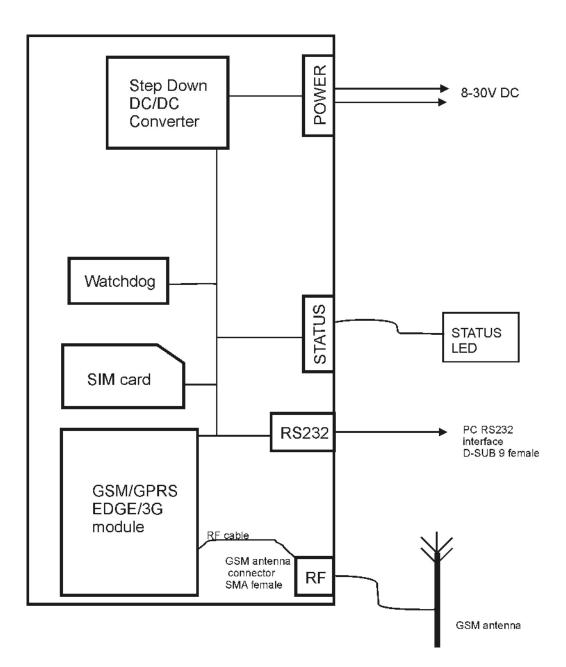
General features:

- 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

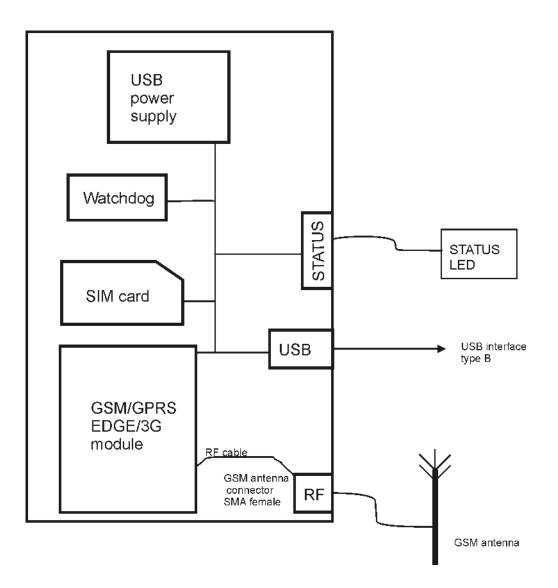


3. Block diagram

Hit 65 RS232



Hit 65 USB



4. Connectors pin-out

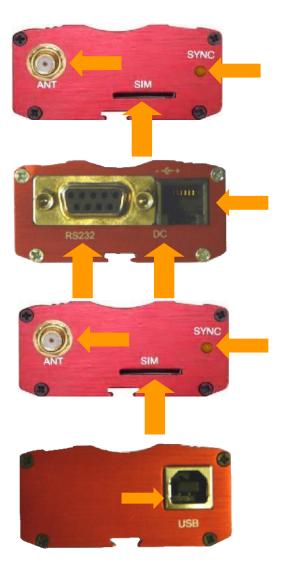
HIT RS232 front and back panel connectors:

- 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







<u>平</u>]	1
5 1 0000 9 6 RS232 interface	 DCD(output) RXD (output) TXD (input) DTR (input) GND DSR(output) RTS(input)
	8. CTS(output) 9. RING(output)
	1. VCC 2. DATA + 3. DATA - 4. GND



5. Power supply ratings

Parameter	Description	Min	Тур	Max	Unit
Vin	Supply voltage	+8	+12	+30	V
lin	Max supply current Vin=8V			1000mA	mA
	Vin=12V			650mA	
	Vin=30V			250mA	mA
Ptot	Supply power			3.2	W

HIT RS232

HIT USB

Parameter	Description	Min	Тур	Мах	Unit
Vpower	Supply voltage	+4.75	+5	+5.25	V
lpower	Max supply current			500mA	mA
Ptot	Supply power			2.5	W

6. RS232 interface characteristic

Paramet er	Description	Conditions	Min	Тур	Max	Unit
V _{OUT}	Transmitter Output Voltage for /RXD, /CTS	@ 5kOhm load	±5	±5.4		V
R _{OUT}	Transmitter Output Resistance /RXD, /CTS		300	50k		Ohm

F	lit	65
•	ιιc	00

V _{IN}	Input voltage range /TXD, /RTS, /DTR		-25		25	V
R _{IN}	Input resistance of /TXD, /RTS, /DTR		3	5	7	kOh m
V _{RIHYS}	Input Hysteresis			0.5		V
V _{ilow}	Input Threshold Low		0.6	1.1		V
V _{lhigh}	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:



< Back Next > Cancel

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

Instal New Modern		E.
Select the nervalacture have an inclativition do	er and model of your modern. If your modern is not list k, click Harve Disk.	ed, or il you
Manufacturer	Models	(*
(SRandard Modern Types)	Standard 19200 bps Modem	
Conservations (Sec)	Standard 20000 bps Modem Standard 30800 bps Modem Standard 56000 bps Modem	*

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



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.**

Add Hardware Wizard	
Install New Modem Select the port(1) you	want to install the modes on
	You have selected the following modern: Standard 19200 bp: Modern On which ports do you want to install #? All ports * Selected ports COMM COMM
	(Back Nest) Cancel





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.

(and)are	17200	bps Modern Proper ties	US
General	Modern	Diagnostics Advanced Driver	
For	COM1		
Spe	ket voke		
	Lave	Hist	
		E C	
-		2501	
Max	Num Poll	Speed	
	175	00 v	
Dal	Control		
		at in datura beox daleg.	
	_		-
		1001	Cance

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 he installation of the "USB Com port".

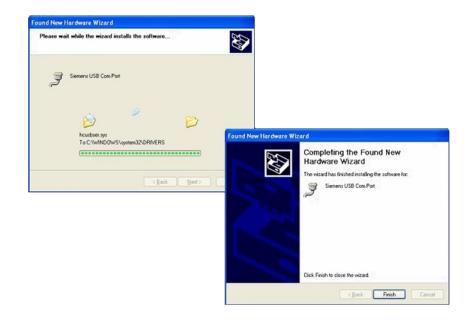




The progress of the driver is dedicated.

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
User name:	mts mobtel
Access code:	064
Telephone number:	internet
• APN:	*99***1#
	"internet"

<u>IMPORTANT NOTICE</u>: 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 resulting dialogue select the card **Modems**, and there select "HCP **GPRS Modem**", then the key **Properties.**



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

hone and Nodem O	ptions		2
Galing Rules Moderne	Advanced		
The following	gnodens are installed		
Modem		Attached 'o	
Standard 19200 p	gi Modern	COM7	
-	A51.	10	
		seriove Prop	entes
	01.	Cancel	Apply 1

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**.

ereral	Modem	Diagnostica	Advance	d Driver		
Extra	Settings					
Este	nitulizati	on command	la l			
AT	CGDCON	4T=1,'3P'',"a	psintemet"			
		G		10.0	-	
		10	harge Dela	ut Pieleien	cei,	

ienei al	loctern	Diagnostics	Advanced	Driver	
Port: CC	M7				
Speake	e woken				
	Los	0		dh	
		- 6			
M.gonu	a Due	Since 1			
S.FIGH	1. Salar	diana a			
	1926	0		-	
	300				
Dial Co	2400				
Unsto	9600				
	3840	0			
	5750	00			

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.

1	etwork Connection Type What do you werk to do?
	Connect to the Internet Connect to the Internet so you can broke the Who and read email
	Connect to the network, at my workplace Connect to a business network (using datup or VEN) to you can work from home, a field office, or another location.
	Set up a home or small office network.
	Connect to an existing home or small office network or set up a new one.
	O Set up an advanced connection
	Connect dencity to another computer using your cerial, parallel, or inhared port, or set up their computer so that other computers can connect to it.
	(Back Net) Carcel

Getting Ready	A
The wizard is preparing to set	t up your Internet connection.
How do you want to connect	to the Internet?
Choose from a list	of Internet service providers (ISPs)
Set up my connect	tion manually
	ion, you will need your account name, password, and a x ISP. For a broadband account, you won't need a phone
O Use the CD I got I	rom an ISP



w Connection Wizard Internet Connection How do you want to correct to the Internet?	Set up my connection manually
	Connect using a dial up moder
Connect using a dial-up modem	ISP name
This type of connection uses a modern and a regular or ISDN phone line.	
 Connect using a broadband connection that requires a user mane password) and
This is a high-speed connection using either a DS8, or cable modern. Your ISP refer to this type of connection as PPPoE.	nay
O Connect using a broadband connection that is always on	
This is a high-speed connection using either a cable modern, DSL ex LAN	w Connection Wazard
connection. It is always active, and doesn't sequer you to sign in.	Connection Name
	What is the name of the service that provides your internet connection?
	Type the name of your ISP in the following box.
(Back Next)	ISP Name
	nei
	The name you type here will be the name of the connection you are creating.
New Connection Wizard	
Phone Number to Dial What is your ISP's phone number?	C Back Next Cancel
Type the phone number below	
Phone number	Phone number
199718	And account
You might need to include a "1" or the area code, or both. If you you need the extra numbers, dial the phone number on your telep	
hear a modern sound, the number dialed is correct.	
	New Connection Wizard
	Internet Account Information
	You will need an account name and password to sign in to your Internet account.
	Type an ISP account name and password, then write down this information and store it in a safe place. (If you have togotten an existing account name or password, contact your ISP.)
(Back Nex	0
	User name nži
	Panword
Connection Wizard	Confirm password •••
Completing the New Connection Wizard	Use this account name and pastword when anyone connects to the Internet from this computer This computer Wake this the default Internet connection
You have successfully completed the steps needed to create the following connection	
nts Make this the default connection	
Share with all users of this computer Use the same uper name & pastword for everyone	(Back Next) Cancel
out the same discrimination endpoint	
The connection will be sayed in the Network	
Connections folder.	Click Finish
Add a shortcut to this convection to my desktop	
To create the connection and close this wizard, click Finish.	 The installer will automatical finish the installation.
(Back Finish Canc	



onnect mis 🛛 🛛 🔀			
6			
User manue:			
Password	[To change the saved password, click here]		
O Me ank	ster name and password for the following users:		
Diak	~99***1# 🗸		
Dial	Cancel Properties Help		

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

- mts Properties	2 🔀
General Options Security Networking Advance	a
Security options O Typical [recommended settings]	
Valdate my identity as tallow:	
Automotically use my Windows legan nene paceword (and doman'il any)	and the second s
🖂 Require data encryption (disconnect if none	6
Advanced (custom settings)	
Using these settings requires a knowledge of security protocols.	Settings
Interactive logon and scripting	Advanced Security Settings
Show terminal window	Data encryption:
[[a.] []	Optional encryption (connect even if no encryption)
	Logon security
OK	O Use Extensible Authentication Protocol (EAP)
	Properties
	 Allow these protocols
	Unencrypted pastword (PAP)
	Shiva Pacaword Authentication Protocol (SPAP)
	Challenge Handshake Authentication Protocol (CHAP)
	Microsoft CHAP (MS-CHAP)
	Allow older MS-CHAP version for Windows 35 servers
	Microsoft CHAP Version 2 (MS-CHAP v2)
	For MS-CHAP based protocols, automatically use my Windows logon name and password (and domain if any)
	OK Cancel



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 to171,2 kbit/s.

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

GSM: 2G Europian 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 reffered 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 Europian 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.