

# CCS Technical Documentation NHL-2NA Series Transceivers

## General Information

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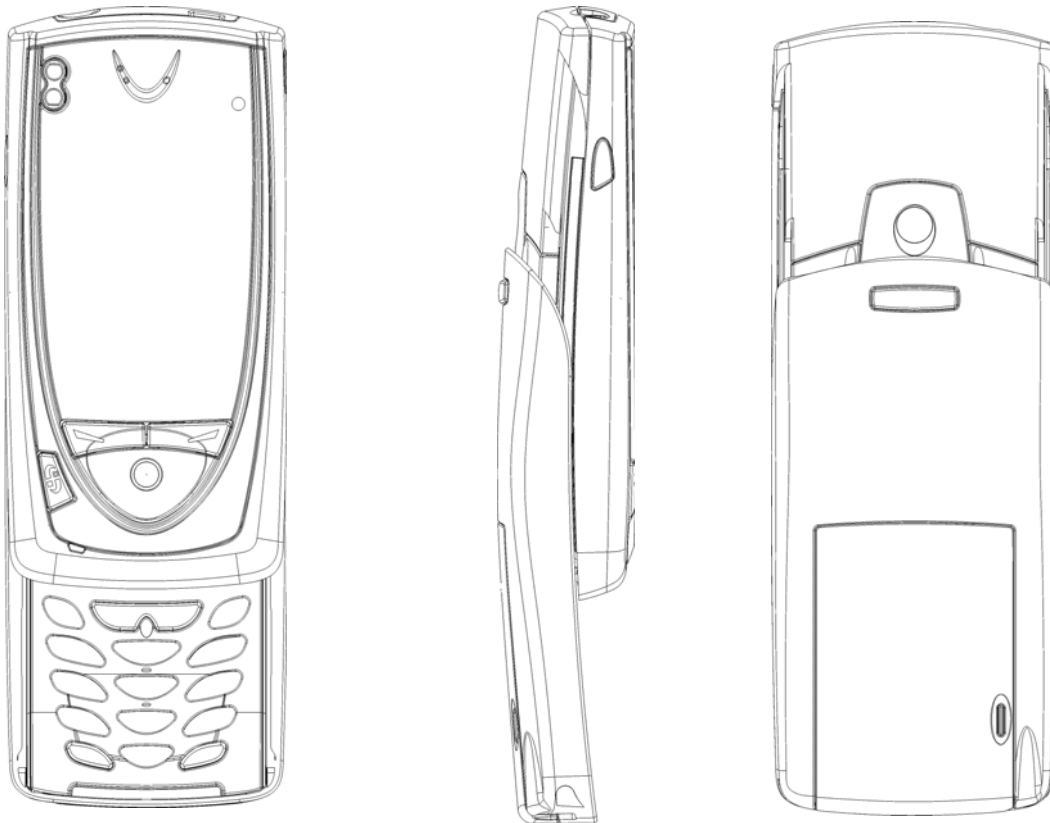
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## Product Selection

### Handportables

The NHL-2NA (Nokia 7650) is a handportable mobile imaging telephone for GSM900/ GSM1800 and EGSM900/GSM1800 networks.

Figure 1: NHL-2NA Phone, slide opened



Item	Name:	Type code:	Material code:
1.	Transceiver	NHL-2NA	(See variant Appendices)

## Product and Module List

Product:

Unit/type:	Type des.	Code:
Transceiver	NHL-2NA*	0630369
Battery 750 mAh Li-Ion	BLB-2	0670246

For further information refer to section Product Variants of this manual.

### Modules

The NHL-2NA consist of a Main Module LG4 (Display, Main PWB, RF, Navigation Key , BLUETOOTH, Audio etc) and a Grip Module LS4 which includes Battery, Keyboard, Charger connector and Vibra. These two parts are connected together through Flex.

ITU-T variant modules are listed below

Transceiver NHL-2NA:	Sub-assembly	Module type.	Code:	Note
Grip module		LS4	0257003	ITU-T keyboard variant
	PWB module	LS4	0201711	
	Assembly parts	MLS4	0262595	Not a spare part
RF/BB module		LG4	0201707	
	Grip flex module	L4	0201759	Hot bar soldered to LG4
	Assembly parts	MLG4		Not a spare part

For more information about modules refer to sections System module and User Interface of this service manual.

## General Specifications of NHL-2NA

### Mechanical Dimensions

Unit	Dimensions (W x H x D) (mm)	Weight (g) Typ.	Volume (cc)	Notes
Transceiver with BLB-2 Li-Ion battery	57 x 115 x 26	155	138	

### Operating time

Talk time with standard battery	Data call (HSCSD 2+2) talk time with standard battery	Standby time	Charging time with ACP-12
2 to 6 h	2h to 4h	7 d (without BT connection)	1h 25 min

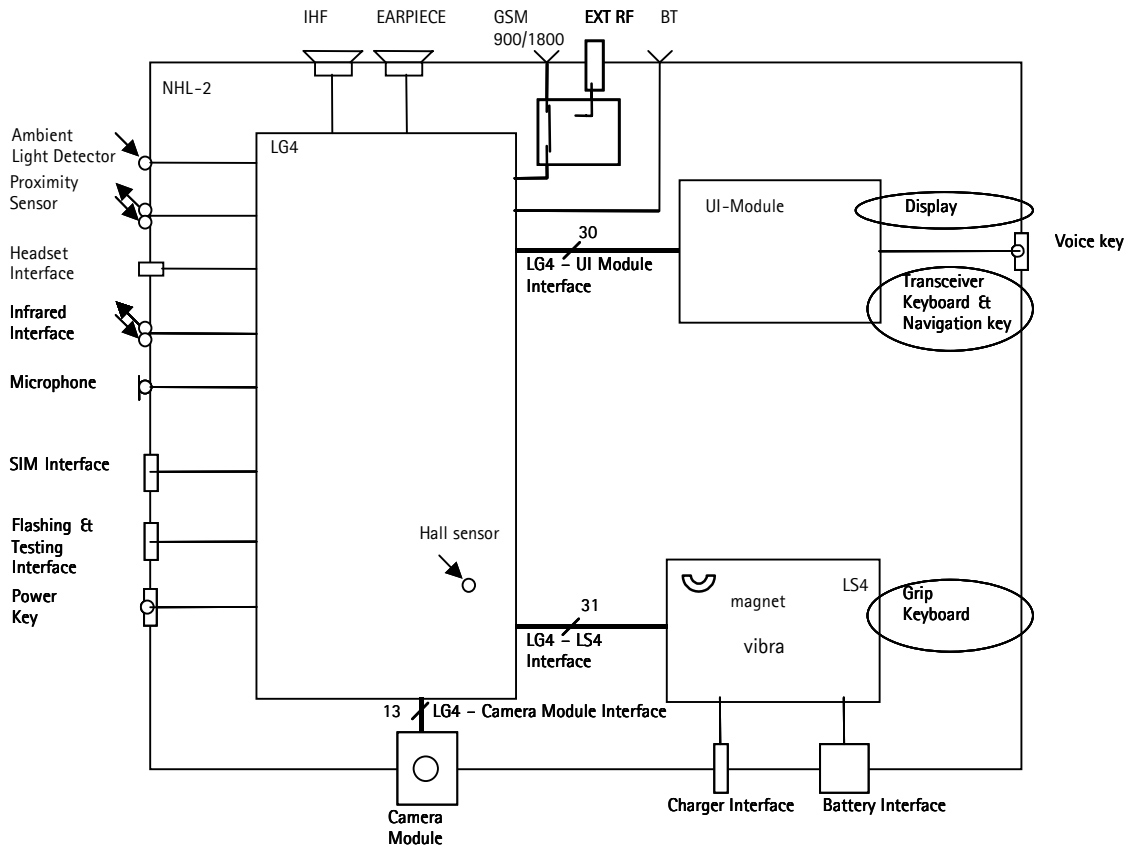
Figures mentioned above are approximate and depend on circumstances.

### Transceiver

Parameter	Unit
Cellular system	EGSM900 and GSM1800
RX frequency band	EGSM: 925 ... 960 MHz GSM900 935 ... 960 MHz GSM1805 ... 1880 MHz
TX frequency band	EGSM 880 ... 890 MHz GSM900 890 ... 915 MHz GSM1800 1710 ... 1785 MHz
Output power	GSM900 * +5 ...+33 dBm / 3.2 mW ... 2 W GSM1800 +0 ...+30 dBm / 1.0 mW ... 1 W
Duplex spacing	GSM900 * 45 MHz GSM1800 95 MHz
Number of RF channels	EGSM 50 GSM900 174 GSM1800 374
Channel spacing	200 kHz
Number of TX power levels	GSM900 * 15 GSM1800 16

## Interconnection Diagram

Figure 2: NHL-2NA interconnection diagram



## Features

### Display and user interface

- Illuminated full graphic colour display
- Graphical user interface
- Joystick with 5-way navigation

### Memory

- 4MB dynamic memory for images, phonebook, calendar, messages, add-on applications

### Integrated digital camera

- Resolution 640x480
- Phone display used as viewfinder

- Photo album

#### **Wireless connectivity**

- IR link
- Bluetooth RF interface
- Wirelessly phone to phone or phone to PC
- Send/receive pictures, graphics, play games

#### **Operating system**

- Symbian OS

#### **Messaging, data**

- GPRS (up to 64.2 kbits/sec, 21.4 kbit/s per timeslot)
- HSCSDC (up to 43.2 kbits/sec)
- Email protocols: STMP, POP3, IMAP4, POP3-SSL/TLS, IMAP4-SSL/TLS
- WAP 1.2.1

#### **Voice features**

- Voice dialling
- Voice recorder
- Integrated handsfree speaker



## Accessories

Accessories, Unit/type:	Type des.	Code:
Battery, Li-Ion	BLB-2	several variants
PC connectivity SW		
Other Accessories, Unit/type:	Type des.	Code:
Desk Stand	DCC-1	0675288
Double Mono Headset	HDD-1	0694066
Headset with remote control	HDC-5	0694059
Stereo Headset	HDE-2	0694075
Mobile inductive loopset	LPS-3	0630244
Carrying case		
Chargers, Unit/type:	Type des.	Code:
Performance Travel Charger (EUR) 90-264 Vac	ACP-8E	0675195
Performance Travel Charger (US) 90-264 Vac	ACP-8U	0675196
Performance Travel Charger (ARG) 90-264 Vac	ACP-8AR	0675248
Fast Travel Charger (EUR) 90-264 Vac	ACP-9E	0675149
Fast Travel Charger (EUR) 90-264 Vac	ACP-9U	0675151
Fast Travel Charger (EUR) 90-264 Vac	ACP-9X	0675150
Fast Travel Charger (EUR) 90-264 Vac	ACP-9A	0675152
Fast Travel Charger (EUR) 90-264 Vac	ACP-12	
Cigarette Lighter Charger	LCH-9	0675120

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