

Programmes After Market Services NPE-4 Series Cellular Phones

1 - General Information

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The Product

The NPE-4 (Nokia 6310) is a dual band handportable mobile telephone for the E-GSM 900 and GSM 1800 networks, automatically switching between bands. It is both GSM 900 phase 2 power class 4 transceiver (2W) and GSM 1800 power class 1 (1W) transceiver.

The NPE-4 (Nokia 6310) has additional features as defined below:

- Integrated Bluetooth
- Wallet for mobile commerce
- GPRS (General Packet Radio Service)
- WAP including the new version 1.2.1
- Voice commands and recording features
- PC suite version 4.5
- To-do list
- Stopwatch
- Countdown Timer
- Games

Technical specification

General Specifications of NPE-4	
Temperature range	-10C to +55C
Size (L x W x D)	129 x 47 x 17 ... 21 mm
Weight	111 g
Display	96 x 65 pixels
Volume	97 cc
Standard battery	BPS-2 1100 mAh, Li-Polymer
Standby Time	Up to 18 days (without Bluetooth and GPRS being activated)
Talk time	3 h - 5 h 30 min
Operating time	Variation will occur depending on SIM card, network and usage settings, style and environments. Bluetooth module will consume power when turned on, reducing the phone's operating times.

Electrical Specifications		
Parameter	GSM 900	GSM 1800
Cellular system	EGSM	PCN
RX frequency	925 - 960 MHz	1805 - 1880 MHz
TX frequency	880 - 915 MHz	1710 - 1785 MHz
Output power	+5 .. +33 dBm / 3.2 mW .. 2 W	+0 .. +30 dBm / 1.0 mW .. 1 W
Duplex spacing	45 MHz	95 MHz
Number of RF channels	174	373
Channel spacing	200 kHz	200 kHz
Number of TX levels	15	16
Sensitivity, static channel	-102 dBm/BER <2.439%	-100 dBm/BER <2.439%
Frequency error, static channel	< 0.1 ppm	< 0.1 ppm
RMS phase error	< 5°	< 5°
Peak phase error	< 20°	< 20°

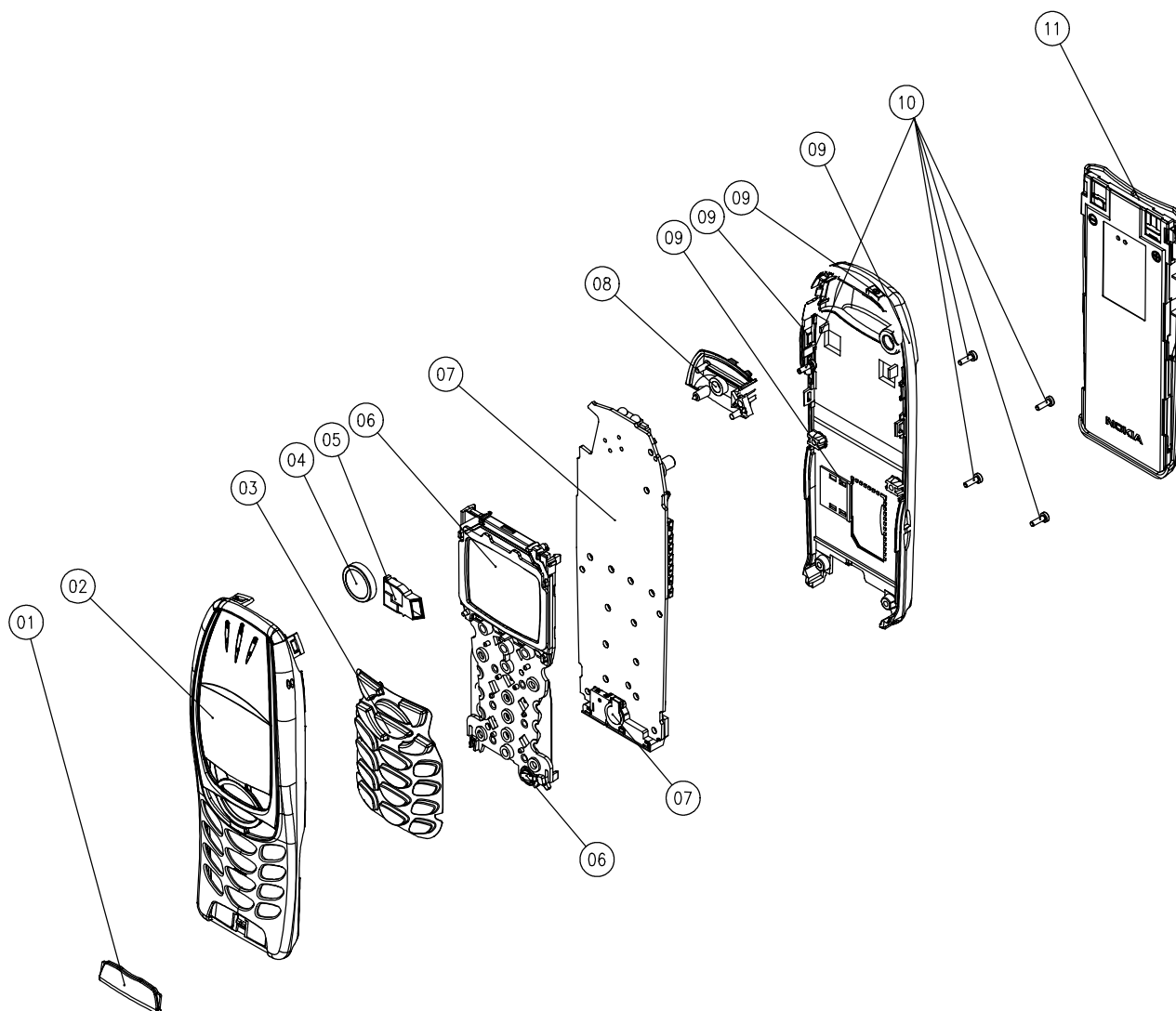


Figure 1 Exploded view of NPE-4

Table 1: List of main components

Item	Description	NMP code
01	Logo Badge	9430274
02a	A-cover Assembly Jet Black	9451928
02b	A-cover Assembly Sirocco Bronze	9452191
02c	A-cover Assembly Mistral Beige	9452190
03	Keymat	979.....
04	Speaker	5140233
05	Buzzer Assembly	5140209

Table 1: List of main components

Item	Description	NMP code
06	Lightguide Assembly,	4850163
07	Microphone + Boot Assembly	5140225
08	Antenna – Internal Antenna Plated	0660231
09a	B-cover Assembly	9458087
09b	Sim slide	9510467
09c	On/off key	9790412
09d	Volume key	9790385
10	Screw M1.6 x 5.5	6150025
11	Battery BPS-2	0670354

Integrated BLUETOOTH

Bluetooth is a global standard for wireless connectivity. Bluetooth technology is based on a low-cost, short-range radio link that operates in the globally available ISM (Industrial Scientific Medical) frequency band at 2.4 GHz.

As a widely adopted open standard, Bluetooth is intended for use in mobile phones, laptops, printers, digital cameras and other devices.

Bluetooth in the NPE-4 (Nokia 6310)

The integrated Bluetooth module (containing a Bluetooth transmitter and receiver) allows the user to connect wirelessly to other Bluetooth devices within a range of 10 meters. The main uses of the Bluetooth module in the NPE-4 (Nokia 6310) are:

- Synchronisation of phonebook and calendar information between the NPE-4 (Nokia 6310) and a compatible PC. Calendar synchronisation works between the phone and, for example, Microsoft Outlook or Lotus Notes using Nokia PC Suite.
- Wireless data (dial-up) connections. Laptop users can access the Internet and handle e-mail by connecting the laptop to a computer network via Bluetooth and the NPE-4 (Nokia 6310). The phone will work as a wireless modem.
- Wireless audio based on Bluetooth, allowing users to be wireless with Nokia Bluetooth audio accessories (headset and car kit).
- Sending of business cards and calendar notes to e.g. another NPE-4 (Nokia 6310).

WALLET

The new wallet feature in the NPE-4 (Nokia 6310) enables users to make on-line transactions via a WAP browser, using your credit card to pay for books and tickets, for instance. The wallet is a password-protected "locker" in your phone containing your credit card information and other private information. When you want to buy something via WAP and are asked for your credit card data, you only need to select wallet and give your password, instead of keying in all of the information manually.

Benefits

- Fast, convenient and secure on-line transactions via WAP
- Secure storage for your personal information inside the phone, e.g. for user names, passwords and numbers
- Protected storage inside the phone using the Wallet code for access
- Easy-to-use
- One step towards a Personal Trusted Device

GPRS (GENERAL PACKET RADIO SERVICE)

Mobile on-line

GPRS is a new feature in the existing GSM network. GPRS sends and receives your data in 'packets' - small packages of data that are sent across the network and then reassembled at the destination.

GPRS is different from traditional circuit switched services because the information is broken down into IP (Internet Protocol) packets. IP Packet data is more efficiently routed across the network and uses less network resources, which reduces the cost to the end user.

GPRS enables users to have an always online mobile access to operator services and the Internet. The main use for GPRS in the beginning will be as a bearer for WAP services, but GPRS can also be used for data (dial-up) connections and for SMS messaging.

The charging (billing) will be based on how much data you send and receive and not on how long time you have been connected.

Benefits with GPRS

- you can be always online
- data are more efficiently routed across the network
- you are charged according to the amount of data that you send and receive
- immediate access to WAP services

Before you can use GPRS

- you need to subscribe to GPRS (for availability and subscription to GPRS, contact your network operator or service provider)
- set up your phone and/or PC to use GPRS

GPRS data speeds

The data transfer speed of a GPRS connection can (at the moment) be up to 40.2 kbps. The speed depends on the network capacity and may change from moment to moment.

Comparisons: Normal WAP connection: 9.6 or 14.4 kbps

Normal GSM data conn.:9.6 or 14.4 kbps

High speed data conn.:up to 43.2 kbps

GPRS WAP connection:up to 40.2 kbps

GPRS data connection:up to 40.2 kbps

WAP

WAP IN THE NPE-4 (Nokia 6310)

The WAP feature in the NPE-4 (Nokia 6310) is very much like the WAP feature seen in previous Nokia phones like the Nokia 6210. Main differences are

- GPRS - a new feature that can be used as a data bearer for WAP
- The WAP version is new (version 1.2.1) and it includes new functions

THE NEW FEATURES IN WAP

Push Service message indicator

The NPE-4 (Nokia 6310) can receive a service message with a short header and a link to a specific WAP service. The type of messages that you want to subscribe to can be selected from operators or service providers according to personal interest.

WAP push messages are stored in a dedicated service inbox. This inbox is found in the Services menu. While online, the service inbox is found under the Options. You can any-time connect to the link that is included in a service message.

When a new WAP push message (with priority high or medium) is received, a notification "New service message received" is displayed. You can read the message or discard the notification. You can save 10 messages in the service inbox.

WAP push message is automatically removed from the service inbox when expiry time (set by the content provider) is reached.

Direct calling (WTAI - Wireless Telephony Applications Interface)

WTAI enables interaction between the WAP browser and other parts of the mobile phone. For example it will be possible to call directly from a phone book on a WAP page by selecting the number to call. The WAP page must be designed to support this feature.

Cookies

Works similarly to the Internet cookies. A server can store a text-string in the phone, making it possible for a WAP-service to recognise the user from time to time, creating a more personal and easier browsing. The NPE-4 (Nokia 6310) has memory for 20 cookies, that will be outdated starting from the last used ones.

Downloadable Calendar (vCal) and Contact (vCard) items

Calendar appointments and business cards can be saved to the phone's calendar or phone book. E.g. while browsing you can select a calendar event or a business card on a WAP page to be saved into the phone's memory.

Direct editing

When the cursor is on top of a link to an input box, pressing the numeric keypad will immediately start inputting into the editor. There is no need to press the select key to get to the editor.

Voice commands and recording features

The voice features have been extended with voice commands and a voice recorder.

With voice commands you can operate up to five features (e.g. change profile) by speaking a voice tag of your choice.

The NPE-4 (Nokia 6310) has a voice recorder that can hold a total of 3 minutes of recordings. The recorder can e.g. be used for making spoken memos.

For voice dialling ten phone numbers in the phone book can have a voice tag attached.

Accessories

Accessory		Type No.
Chargers	Multivoltage (Travel)	ACP-8
	Multivoltage (Travel)	ACP-9
	Standard	ACP-7
	Mobile	LCH-9
Batteries	Li-Pol 1100 mAh Ultra Slim	BPS-2
	LI-Ion 1050 mAh Slim	BLS-2N
	Ni-MH 900 mAh Standard	BMS-2S
Desktop Stand		DCH-9
Car Accessories	Advanced HF Car kit	CARK-91
	Phone Holder	MBC-1
	Handset (E & A) / Privacy Handset (APAC)	HSU-1
	Antenna Set NMT/GSM	AMD-2
	Headset	HDC-9P
Personal	Leather pouch	CBL-5, CSP-1
	Mobile Inductive Loopset	LPS-1
	RS-232 Adaptive (data) Cable	DLR-3P
	Nokia PC Suite	Ver. 4.5
	External Antenna Cable	XRC-1
	Headset	HDW-1
	Wireless Car Kit	CARK-112
Nokia PC Connectivity Card		DTL-4