1 — General Information

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■ RM-84/RM-99 product selection

Nokia N70 is a WCDMA/GSM dual mode handportable phone, supporting WCDMA 2000 (UMTS) (RM-84) and EGSM 900/1800/1900 (RM-99) bands.

RM-99 is an EDGE variant of the RM-84 WCDMA phone. From the mechanical point of view, RM-99 is lacking the VGA front camera. Also the following RF components are not included in the phone engine:

- WCDMA Tx SAW (Filter)
- WCDMA Rx SAW (Filter)
- WCDMA PA (Power Amplifier)
- WCDMA Duplexer
- WCDMA Isolator
- WCDMA PA DCDC Converter

According to GSM standard 05.05 it responds to class 4 (max. 2 W) in EGSM 900, class 1 (1 W) in GSM 1800 and class 1 in GSM 1900. The device supports EGPRS (EDGE) class B as well as Bluetooth 2.0 + EDR (Enhanced Data Rate) standard. The handset has a full phase 2 Type Approval and it complies with the GSM Type Approval. RM-84/RM-99 also has a full CE approval and FCC (Federal Communications Commission) approval.

RM-84 supports two-way video calls with two integrated cameras. It is an MMS (Multimedia Messaging Service) enabled phone with a large bright colour display and an integrated 2.0 megapixel rear camera and a VGA digital front camera.

The MMS implementation follows the OMA (Open Mobile Alliance) MMS standard release 1.2.

WAP 2.0 compatible browser supports XHTML Mobile Profile (MP) and uses a TCP/IP stack to communicate with a gateway in network.

RM-84/RM-99 use a Symbian 8.0a operating system and support also MIDP (Mobile Information Device Profile) Java 2.0 & CLDC 1.1 (Connected Limited Device Configuration), providing a good platform for 3rd party applications.

Important: All subsequent WCDMA related chapters and sections concern RM-84 only!

Figure 1 View of RM-84 and RM-99

■ RM-84/RM-99 product features and sales package

Imaging and video
- 2 megapixel camera (1600 x 1200 pixels) with 20x digital zoom
- **[RM-84]** Second VGA camera (640 x 480 pixels) with 2x digital zoom
- Dedicated shutter key and camera activation slide
- **[RM-84]** Two-way video call capability
- **[RM-84]** Real time video sharing
- Integrated flash (operating range up to 1.5 m)
- Flash modes: on, off, automatic, and anti red-eye
- Advanced camera modes: still, sequence, video
- Six possible capture scene settings including scenery, portrait, night and sports
- Settings, brightness adjustment, image quality, self-timer, white balance settings and colour tones
- Video and still image editors
- Movie Director for automated video production
- Image and video clip uploading to the web

Bearers & transport
- GPRS class B, multislot class 10
- EGPRS multislot class 9
- **[RM-84]** WCDMA PS max speeds UL/DL 128/384kbps
- **[RM-84]** WCDMA CS 64kpbs
- HSCSD
- USB 2.0
- Bluetooth 1.2

Software platform
- Nokia Series 60 release 2.8
- Symbian 8.1

Connectivity
- Integrated Bluetooth wireless technology v.2.0
- USB 1.2 full speed via Pop-Port™ interface
- Nokia PC Suite connectivity via USB and Bluetooth wireless technology
- Local synchronisation of contacts and calendar to a compatible PC using compatible connection
- Remote over-the-air synchronisation
- Send and receive images, video clips, graphics, and business cards via Bluetooth wireless technology
- Profiles with Bluetooth connectivity: Basic Printing Profile (BPP) using Image Print or Info Print applications, Human Interface Device Profile (HID) using Nokia Wireless Keyboard application

Sales package
- RM-84/RM-99 transceiver
- HS-3 stereo headset
- CA-53 USB connectivity cable
- MU-1 RS-MMC 64 MB with adapter
- BL-5C Li-ion battery cell
- AC-4 travel charger
- User guide

- CD-ROM (with PC-Suite)
- Carry strap

■ Mobile enhancements

Table 1 Audio

Enhancement	Type
Boom mono headset	HDB-4
Fashion stereo headset	HS-3
Mono headset	HS-5
Stereo headset	HDS-3
Inductive loopset	LPS-4
Wireless headset	HDW-3
	HS-4W
	HS-11W
Wireless clip-on headset	HS-21W
Wireless image headset	HS-13W
Audio adapter	AD-15
TTY adapter	HDA-10
Music stand	MD-1

Table 2 Car

Enhancement	Type
Mobile charger	DC-4
Headrest handsfree	BHF-3
Basic handsfree	HF-3
Advanced car kit (sales pack)	CK-7W
Wireless car kit	CK-1W
Wireless plug-in car handsfree	HF-6W
Universal holder	CR-39

Table 3 Carrying

Enhancement	Type
Carrying case	CNT-676

Table 4 Data

Enhancement	Type
USB data cable	DKU-2

Enhancement	Type
Connectivity cable	CA-53
Wireless GPS module	LD-1W
RS multimedia card 64 MB	MU-1
RS multimedia card 128 MB	MU-2
RS multimedida card 256 MB	MU-9
RS multimedia card 512 MB	MU-12

Table 5 Imaging

Enhancement	Type
Nokia image album	PD-1
Nokia remote camera	PT-6

Table 6 Messaging

Enhancement	Type
Nokia digital pen	SU-1B
Bluetooth QWERTY keypad	SU-8W

Table 7 Power

Enhancement	Type
Battery 970mAh Li-ion	BL-5C
Compact charger	AC-3
Travel charger	AC-4
Charging adapter	CA-44

■ Technical specifications

Transceiver general specifications

Unit	Dimensions (L x W x T) (mm)	Weight (g)	Volume (cm^3)
Transceiver with BL-5C 900mAh li-ion battery back	108.8 x 53 x 21.8	126	95.9

Main RF characteristics for triple-band (GSM900/1800/1900) and WCDMA phones

Parameter	Unit
Cellular system	EGSM900, GSM1800/1900 and WCDMA

Parameter	Unit
Rx frequency band	EGSM900: 925 - 960 MHz
	GSM1800: 1805 - 1880 MHz
	GSM1900: 1930 - 1990 MHz
	WCDMA: 2110 - 2170 MHz
Tx frequency band	EGSM900: 880 - 915 MHz
	GSM1800: 1710 - 1785 MHz
	GSM1900: 1850 - 1910 MHz
	WCDMA: 1920 - 1980 MHz
Output power	GSM900: +5 ... +33dBm/3.2mW ... 2W
	GSM1800: +0 ... +30dBm/1.0mW ... 1W
	GSM1900: +0 ... +30dBm/1.0mW ... 1W
	WCDMA -50 ... 21 dBm
Number of RF channels	GSM900: 125
	GSM1800: 375
	GSM1900: 300
Channel spacing	200 kHz
Number of Tx power levels	GSM900: 15
	GSM1800: 16
	GSM1900: 16

Battery endurance

Battery	Capacity (mAh)	Talk time	Stand-by
BL-5C	970	up to 3.5* hrs	up to 11* days

*Variation in operation times will occur depending on the SIM card, network settings and usage. Talk time is increased by up to 30% if half rate is active and reduced by 5% if enhanced full rate is active.

Charging times

AC-4	AC-3
1 h 15 min	2 h 45 min

Environmental conditions

Environmental condition	Ambient temperature	Notes
Normal operation	-15ºC...+55ºC	Specifications fulfilled
Reduced performance	-25ºC...-15ºC +55ºC...+70ºC	Operational for shorts periods only

Environmental condition	Ambient temperature	Notes
Intermittent operation	-40ºC...-15ºC +70ºC...+85 ºC	Operation not guaranteed but an attempt to operate does not damage the phone.
No operation or storage	<-40ºC...>+85ºC	No storage or operation: an attempt may damage the phone.
Charging allowed	-25ºC...+50ºC	
Long term storage conditions	0ºC...+85ºC	