

After Sales Technical Documentation NHE-5 Series Transceiver

Chapter 2

TECHNICAL INFORMATION

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Introduction

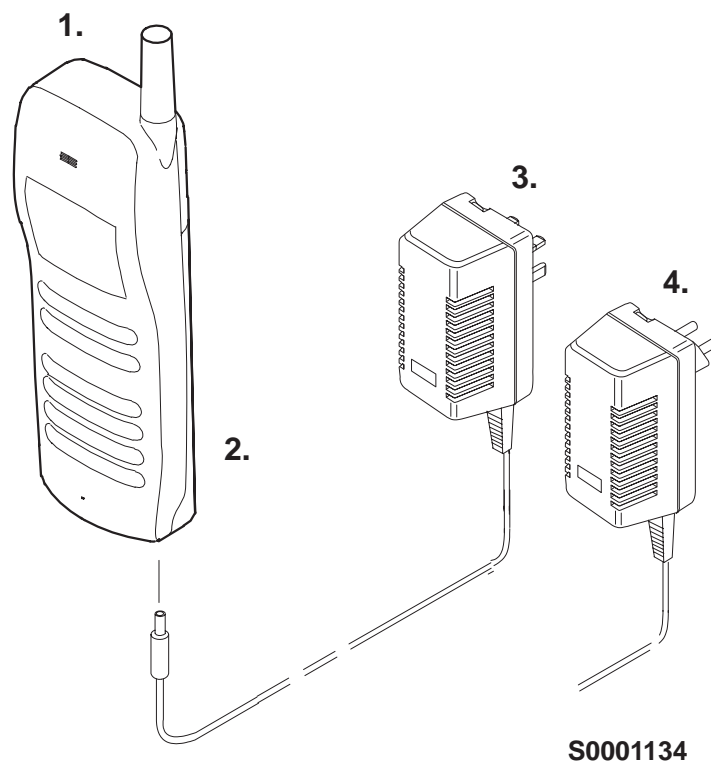
This chapter contains a list of products/modules together with their associated order codes, and details of the performance specifications for the NHE-5 Series Transceiver. The performance specifications are split into general, transmitter and receiver functions.

Product Selection

Handportable

The NHE-5 is a handportable cellular phone for the pan-European GSM network. It is a GSM phase 1 power class 4 transceiver providing 11 power levels with a maximum output power of 2 W.

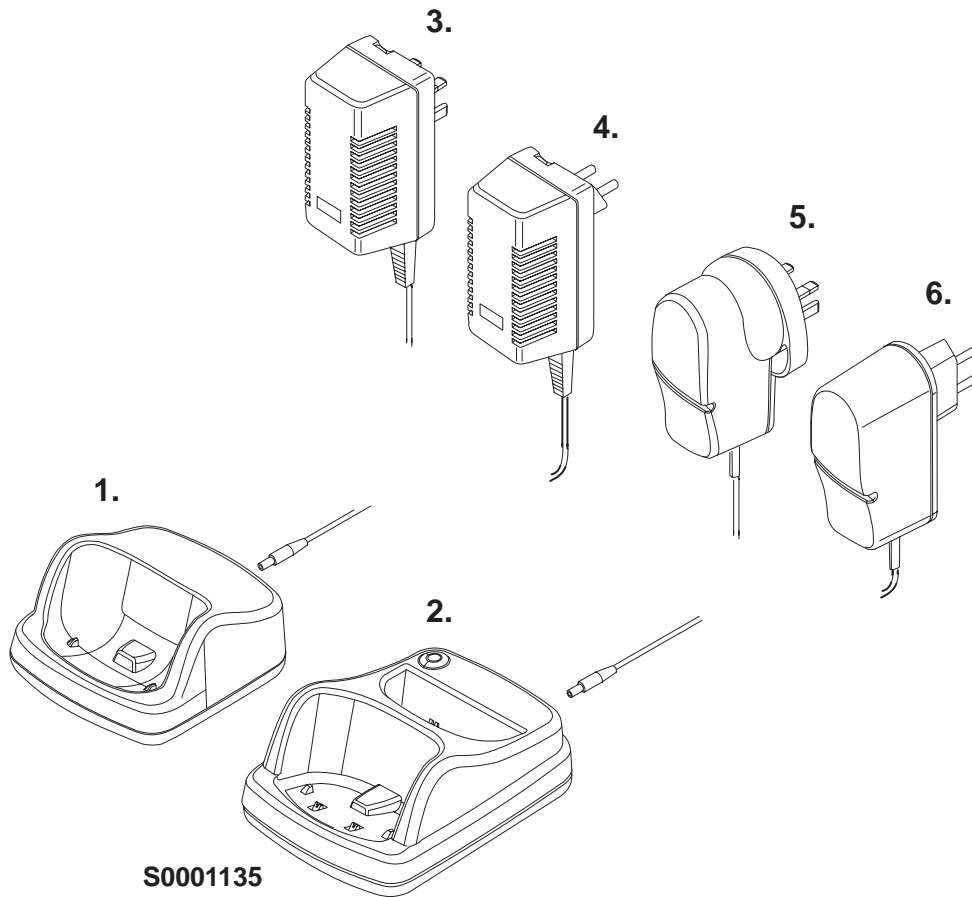
The basic handportable package offers the user a standard battery pack and travel charger for charging from mains. The package contains the following product:



Item/name:	Type:	Product code:
1. Handportable (see Variant Appendixes)		
2. Standard battery	BBT-6S	0670117
3. Standard charger (UK plug)	ACH-8X	0675090
– Standard charger (Australia plug)	ACH-8A	
4. Standard charger (Euro plug)	ACH-8E	0675089

Desktop Option

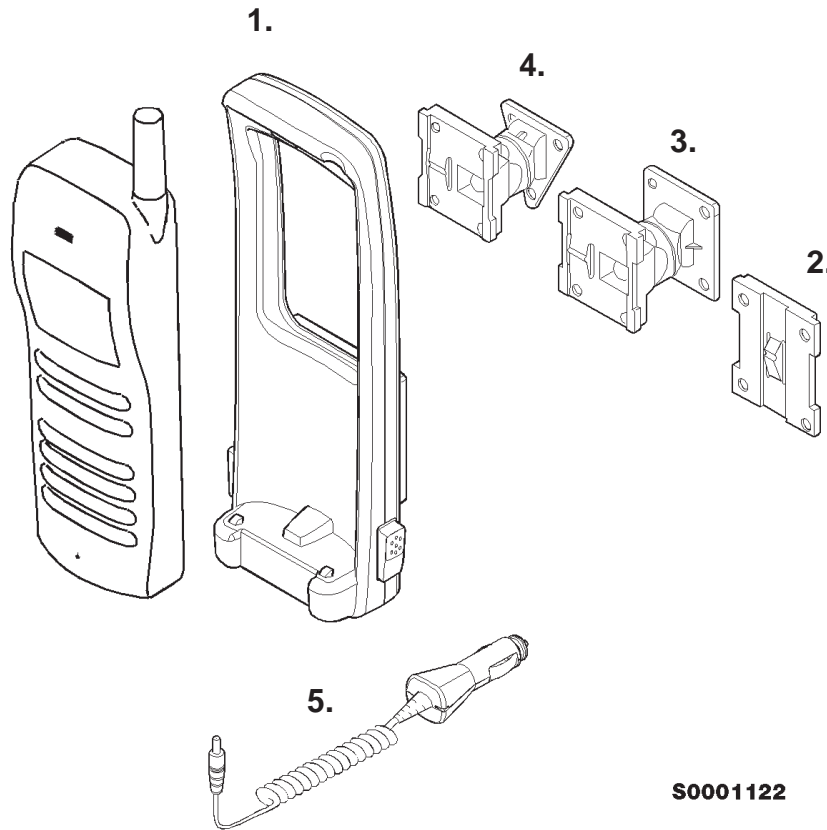
The desktop option allows the user to charge the handportable and spare battery from mains. With this option the user can also discharge the spare battery. The desktop option contains the following product:



Item/name:	Type:	Product code:
1. Basic stand	CGH-2	0700038
2. Desktop stand	CGH-1	0675078
3. Standard charger, trickle (UK plug)	ACH-8X	0675090
– Standard charger, trickle (Australia plug)	ACH-8A	
4. Standard charger, trickle (Euro plug)	ACH-8E	0675089
5. Fast & light charger, rapid (UK plug)	ACH-6X	0675087
– Fast & light charger, rapid (Australia plug)	ACH-6A	0675086
6. Fast & light charger, rapid (Euro plug)	ACH-6E	0675084

Basic Car Kit Option

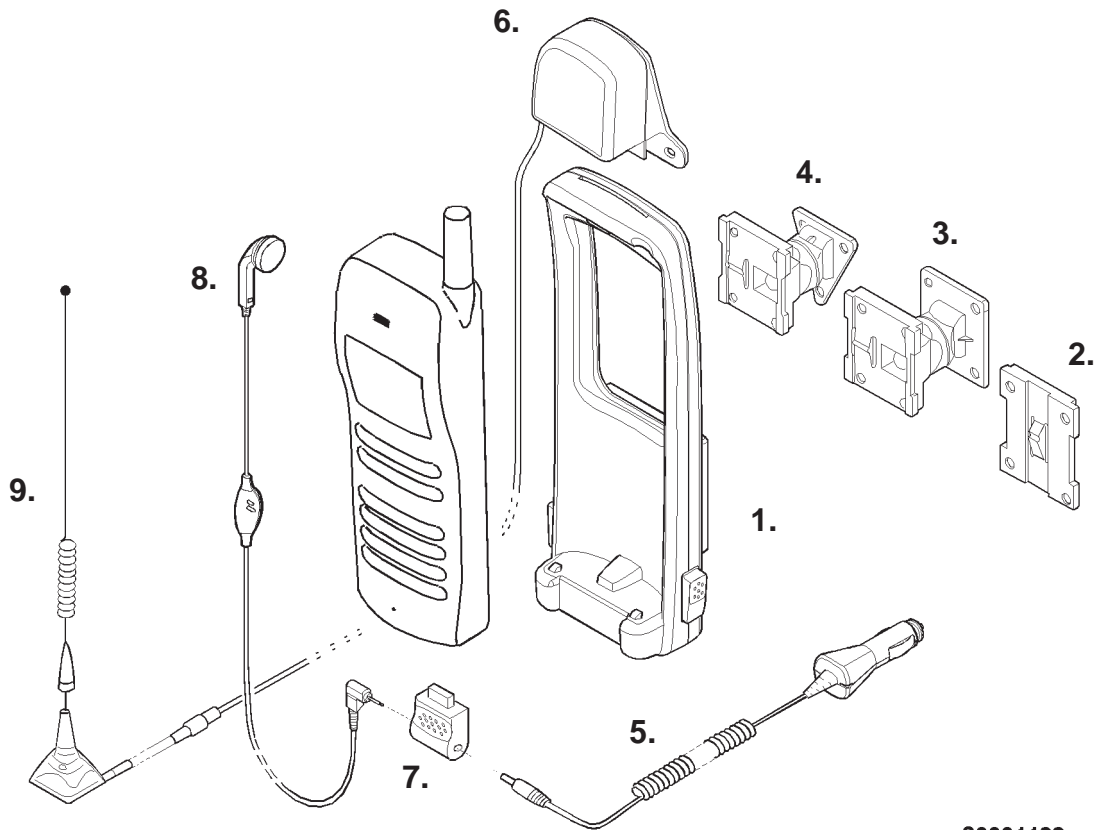
This option (Basic Car Kit) offers a passive cradle and charging functions to the user in the car installation. The light car kit option contains the following product:



Item/name:	Type:	Product code:
1. Phone holder	MBT-2	0620028
2. Mounting plate	MKE-7	0650007
3. Swivel mounting plate (square plate)	HHS-6	0650006
4. Swivel mounting plate (triangular plate)	HHS-7	
5. Universal mobile charger	LCH-6	0675076

Extended Car Kit Option

This option (Extended Car Kit Car Kit) offers a passive cradle and charging functions to the user in the car installation. The light car kit option contains the following product:

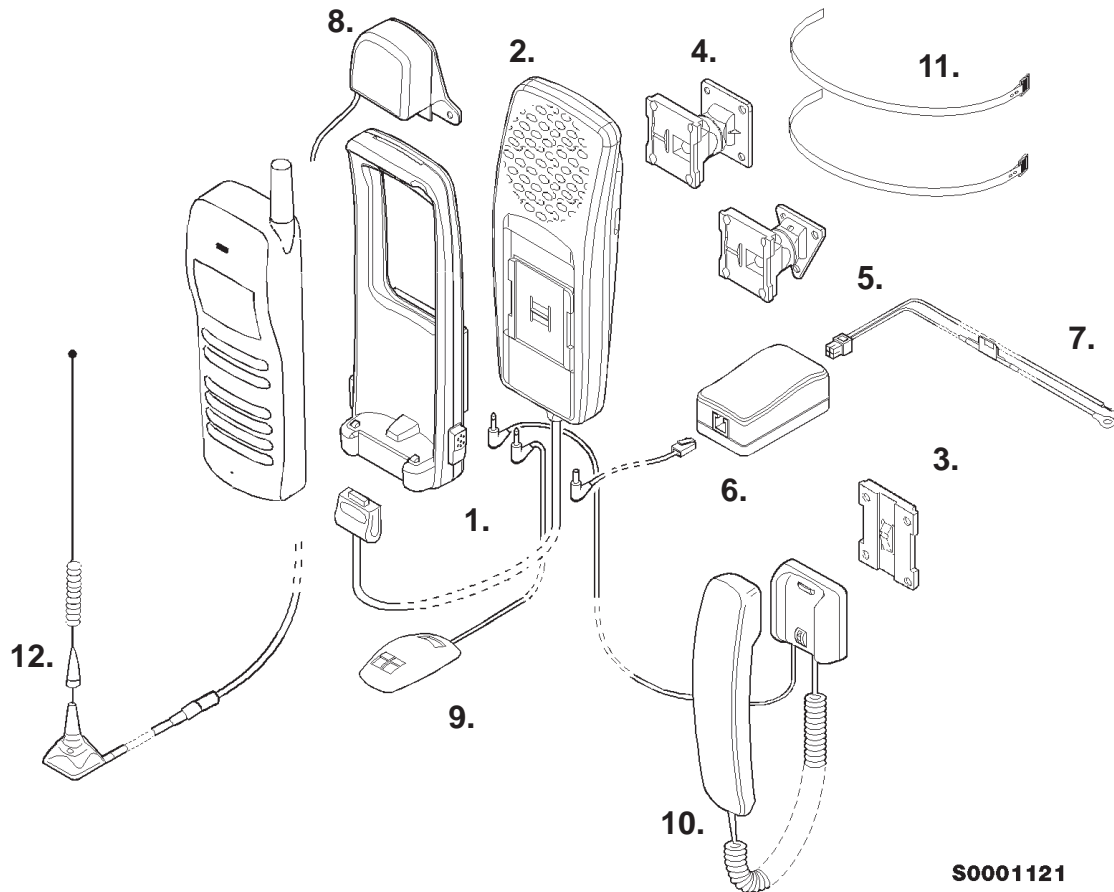


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Item/name:	Type:	Product code:
1. Phone holder	MBT-2	0620028
2. Mounting plate	MKE-7	0650007
3. Swivel mounting plate (square plate)	HHS-6	0650006
4. Swivel mounting plate (triangular plate)	HHS-7	
5. Universal mobile charger	LCH-6	0675076
6. External antenna adapter	AAE-1	0750080
7. Headset adapter	HDA-4	06940??
8. Headset	HDC-2	0694017
9. External antenna (not supplied)		

Complete Car Kit Option

This option (Complete Car Kit) contains the same functions as the light car kit option and also offers full handsfree and external antenna functions. The use of the product can be extended for car use with the following accessories:



Item/name:	Type:	Product code:
1. Phone holder	MBT-2	0620028
2. Basic handsfree unit	PHF-5	0694028
3. Mounting plate	MKE-7	0650021
4. Swivel mounting plate (square plate)	HHS-6	0650019
5. Swivel mounting plate (triangular plate)	HHS-7	
6. Fixed mobile charger	LCM-1	0675077
7. Power cable	PCM-5	0730058
8. External antenna adapter	AAE-1	0750080
9. Handsfree microphone	HFM-7	0690012
10. Handset	HSU-2	0640078
11. Installation belts		
12. External antenna (not supplied)		
- Universal mobile charger (opt.)	LCH-6	0675076
- Headset (optional)	HDC-2	0694017

Product and Module List

Unit/type:	Product code:	Module code:
Transceiver NHE-5	See variant Appendixes	
Light Battery BBT-7S (450 mAh)	0670126	
Slim Battery BBT-3S (600 mAh)	0670125	
Extended Battery BBT-2S (950 mAh)	0670123	
Ultra Extended Battery BBT-2H (1200 mAh)	0670124	
Standard Charger ACH-8X (UK)	0675090	
Standard Charger ACH-8E (EUR)	0675089	
Standard Charger ACH-8A (AUS)		
Fast & Light Charger ACH-6X (UK)	0675087	
Fast & Light Charger ACH-6E (EUR)	0675084	
Fast & Light Charger ACH-6A (AUS)	0675086	
Universal Mobile Charger LCH-6	0675076	
Fixed Mobile Charger LCM-1	0675077	
Basic Stand CGH-2	0700038	
Desktop Stand CGH-1	0675078	
Phone Holder MBT-2	0620028	
Mounting Plate MKE-7	0650021	
Swivel Mounting Plate HHS-6	0650019	
Swivel Mounting Plate HHS-7	0650020	
Power Cable PCM-5	0730058	
Handset HSU-2	0640078	
Headset HDC-2	0694017	
Headset Adapter HDA-4	0694042	
Handsfree Microphone HFM-7	0690012	
External Antenna Adapter AAE-1	0750080	
Basic Handsfree Unit PHF-5	0694028	
• HF speaker module DH6		0200658
• Mechanics		0260677
Belt Clip BCH-6	0650023	

Technical Specifications

General Specifications of NHE-5 Series Transceiver

Temperature range	<i>+5° C to +40° C</i>
Operating time (with BBH-6S)	
• talk time	<i>? mins</i>
• standby time	<i>? hrs</i>
Battery voltage	<i>6 V</i>
Nominal current consumption	
• power off mode	<i>1.5 mA</i>
• idle mode	<i>9 mA</i>
• call mode,	<i>250...800 mA</i>
Dimensions (h x w x d)	
• transceiver + BBT-2S	<i>158 x 58 x 36 mm</i>
Weight	
• transceiver + BBT-7S/3S	<i>251 g</i>
• transceiver + BBT-2S	<i>288 g</i>
• transceiver + BBT-2H	<i>303 g</i>

Electrical Specifications

Transceiver General Features

Cellular system	<i>Global System for Mobile communications (GSM)</i>
Number of RF channels	<i>124</i>
Number of time domain channels	<i>81 RF channel</i>
Duplex spacing	<i>45 MHz</i>
Channel spacing	<i>200 kHz</i>
Modulation type	<i>GMSK</i>

Receiver Branch

Frequency band	<i>935.2...959.8 MHz</i>
Type	<i>linear, 2 IFs</i>
IF	<i>71 MHz and 13 MHz</i>
3 dB bandwidth	<i>± 100 kHz</i>
Reference noise bandwidth	<i>270 kHz</i>
Sensitivity	<i>-102 dBm RX channel input I/Q S/N ratio > 8 dB</i>
AGC dynamic range	<i>93 dB, typ</i>
Receiver gain	<i>83 dB, typ</i>
RF front end gain control range	<i>36 dB</i>
2nd IF gain control range	<i>57 dB</i>
Input dynamic range	<i>-102...-10 dBm</i>
Gain relative accuracy in receiving band	<i>± 1.5 dB</i>
Gain relative accuracy on channel	<i>± 0.4 dB</i>

Transmitter Branch

Frequency band	890.2...914.8 MHz
Type	Upconversion
Intermediate frequency	116 MHz
Gain control range	20 dB
Power class	4
Output power	13–33 dBm/20 mW...2 W
Power levels	11
Power level step size	2 dB \pm 1.5 dB
Tolerance at 2 W power	< \pm 2 dB (ext. temp. \pm 2.5 dB)
Tolerance at other levels	\pm 3 dB (ext. temp. \pm 4 dB)
Frequency error	\pm 0.1 ppm
RMS phase error	< 5°
Peak phase error	< 20°

UHF Synthesizer

Receiver injection (LO1)	1006.2...1030.8 MHz
Settling time to any channel	< 800 μ s \pm 20 Hz

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