



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/DK97/00295</p> <p>(22) International Filing Date: 4 July 1997 (04.07.97)</p> <p>(30) Priority Data: 0742/96 5 July 1996 (05.07.96) DK</p> <p>(71) Applicant (for all designated States except US): DANCALL TELECOM A/S [DK/DK]; Klokkestøbervej 4, DK-9490 Pandrup (DK).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): JENSEN, Niels, Jørgen [DK/DK]; S.J. Hvarregaardsvej 13, Hune, DK-9492 Blokhus (DK).</p> <p>(74) Agent: HOFMAN-BANG & BOUTARD, LEHMANN & REE A/S; Hans Bekkevolds Allé 7, DK-2900 Hellerup (DK).</p>	<p>(81) Designated States: AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 5 March 1998 (05.03.98)</p>	
(54) Title: A HANDHELD APPARATUS HAVING ANTENNA MEANS FOR EMITTING A RADIO SIGNAL, A HOLDER THEREFOR, AND A METHOD OF TRANSFERRING SIGNALS BETWEEN SAID APPARATUS AND HOLDER		
(57) Abstract		
<p>A handheld apparatus (11), which comprises antenna means for emitting a radio signal, comprises at least two antennas (9, 14) which have different radiation characteristics. The apparatus comprises a shield (3) which surrounds some of the electronic components (2) of the apparatus and consists of an insulating material (4) metallized on the side facing away from the components as well as on the side facing the components. At least part of the metallization (5) facing away from the components constitutes a patch antenna (9) which is adapted to transmit and/or receive said radio signals. A holder (20) for a handheld apparatus (11), which is provided with a patch antenna (9) and is adapted to emit radio signals, comprises a patch antenna (19) adapted to cooperate with the corresponding patch antenna (9) on an apparatus placed in the holder. In a method of transferring radio signals between such a handheld apparatus (11) and a radio installation fixedly mounted in a vehicle, the signals are transferred between two patch antennas (9, 19) which are placed in said apparatus and a holder (20) therefor, respectively.</p>		

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/DK 97/00295

A. CLASSIFICATION OF SUBJECT MATTER		
IPC6: H01Q 1/24 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
IPC6: H01Q		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
SE,DK,FI,NO classes as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0451623 A1 (NOKIA MOBILE PHONES LTD.), 16 October 1991 (16.10.91), abstract --	1-4
Y	EP 0214806 A2 (NEC CORPORATION), 18 March 1987 (18.03.87), abstract --	1-4
X	EP 0017037 A1 (SIEMENS AKTIENGESELLSCHAFT), 15 October 1980 (15.10.80), abstract --	1,2
A	US 5530919 A (TERUHISA TSURU ET AL), 25 June 1996 (25.06.96), column 1, line 16 - line 24; column 2, line 7 - line 24 --	1-9
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
Date of the actual completion of the international search		Date of mailing of the international search report
6 December 1997		30 -01- 1998
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86		Authorized officer Rune Bengtsson Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 97/00295

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3241149 A (J. BERGER), 15 March 1966 (15.03.66), figure 3B --	3-4
X	WO 9422235 A1 (DANIELS, JOHN, J), 29 Sept 1994 (29.09.94), claims 13-25 --	7-9
X	US 4876709 A (MAX W. ROGERS ET AL), 24 October 1989 (24.10.89), abstract --	10-12
A	US 4661992 A (OSCAR GARAY ET AL), 28 April 1987 (28.04.87), abstract -- -----	10-12

INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK97/00295

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. Claims 1-6 comprising an antenna configuration of at least two antenna elements to get directional characteristic.
2. Claims 7-9 comprising a shield that includes an antenna.
3. Claims 10-12 comprising a wireless transmission between a portable phone and a holder, and a method thereof.

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

07/01/98

International application No.

PCT/DK 97/00295

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0451623 A1	16/10/91	US 5138329 A	11/08/92
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WO 9422235 A1	29/09/94	AU 6131894 A CA 2148355 A DE 4491705 T EP 0669060 A GB 9509910 D US 5335366 A WO 9531048 A	11/10/94 29/09/94 07/12/95 30/08/95 00/00/00 02/08/94 16/11/95
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US 4661992 A	28/04/87	NONE	