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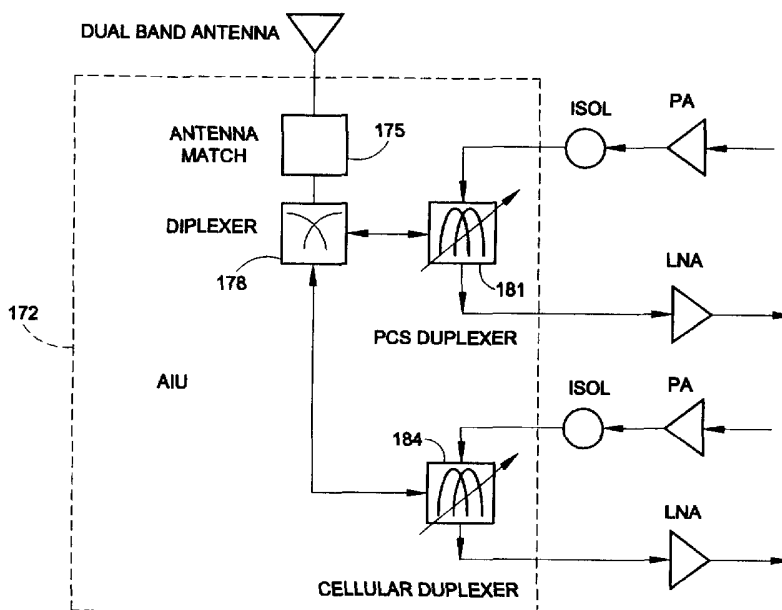
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[Continued on next page]

(54) Title: ANTENNA INTERFACE UNIT



(57) Abstract: A ferro-electric tunable duplexer is provided, integrated with one or more of the following parts: a power amplifier, an isolator, a diplexer, a low noise amplifier and an antenna matching circuit. More specifically, in addition to adding F-E tunability, one or more of the above components is integrated with the duplexer on one substrate. The components are integrated on one substrate either by placing each component, with the appropriate matching circuit directly on the substrate, or by direct fabrication of the component and matching circuit into or onto the substrate.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

INTERNATIONAL SEARCH REPORT

International Application No

P/IB 02/01077

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H01P1/213

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)  
IPC 7 H01P H03F H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 973 568 A (BLACK GREG ET AL) 26 October 1999 (1999-10-26) column 3, line 30 -column 5, line 59; figures 2-4	1-11
Y	EP 0 843 374 A (SHARP KK) 20 May 1998 (1998-05-20) column 1, line 5 - line 13 column 8, line 28 -column 10, line 40; figures 1-5	1-38
Y	US 5 652 599 A (WALLACE RAYMOND C ET AL) 29 July 1997 (1997-07-29) column 2, line 59 -column 3, line 36; figures 1-3	12-38
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Further documents are listed in the continuation of box C.

Patent family members are listed in 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
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- "&" document member of the same patent family

Date of the actual completion of the international search

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## INTERNATIONAL SEARCH REPORT

International Application No

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Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 00 28613 A (PARATEK MICROWAVE INC) 18 May 2000 (2000-05-18) page 1, line 8 -page 3, line 15 ---	1-11
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IB 02/01077

## 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:

see additional sheet

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-11

A tunable antenna interface comprising a multiplexer with a ferroelectric tunable element, a power amplifier and a matching circuit coupling the power amplifier and the multiplexer

2. Claims: 12-38

A tunable antenna interface comprising a multiplexer with a ferroelectric tunable element, a diplexer and a matching circuit coupling the diplexer and the multiplexer

## INTERNATIONAL SEARCH REPORT

formation on patent family members

International Application No

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