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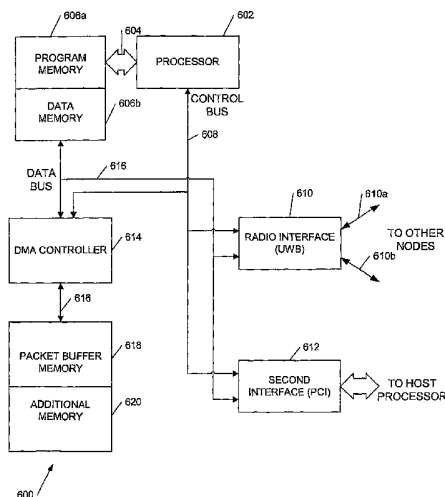
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[Continued on next page]

(54) Title: ULTRA-WIDEBAND NETWORK, DEVICE, DEVICE CONTROLLER, METHOD AND DATA PACKET FOR ESTABLISHING A MESH NETWORK AND FORWARDING PACKETS ON ANOTHER CHANNEL



(57) Abstract: An ultra-wideband (UWB) network comprising a plurality of UWB devices each forming a node of said network, pairs of said UWB devices being configured for communication with one another using one of a plurality of UWB channels, each said UWB device comprising a UWB transceiver (610) for bidirectional communication over one or more of said UWB channels (610a, 610b) with at least one other of said UWB devices; and a device controller coupled to said UWB transceiver, said controller being configured to determine a said UWB channel for use in establishing a communication link with each other UWB device and to store connection data associating a list of said channels bearing incoming data with a second of said channels for use in forwarding said incoming data to another of said devices. In one embodiment, the controller of an UWB device comprises a memory access controller (614) being the master of a second data bus (616).

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L12/56 G06F13/38 G06F13/40

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 H04L G01S G06F 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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WO 01/93520 A (XTREMESPECTRUM INC) 6 December 2001 (2001-12-06)</p> <p>page 9, line 6 - line 14 page 14, line 13 - page 15, line 12 page 17, line 1 - line 11 page 21, line 8 - page 25, line 6 figures 1,3</p> <p style="text-align: center;">----- -/--</p>	<p>1-3,6, 10-13, 18,19,21</p>

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
- *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
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- *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

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Int. Patent Application No.

PCT/GB2004/002201

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/058826 A1 (SHEARER DANIEL D M) 27 March 2003 (2003-03-27) paragraphs '0006!, '0007!, '0011!, '0012! paragraph '0041! - paragraph '0046! paragraph '0063! - paragraph '0084! paragraph '0089! figures 1,7,9-16 abstract -----	1-3,6, 10-13, 18,19,21
Y	WO 03/003672 A (AGHVAMI ABDOL HAMID ; KING S COLLEGE LONDON (GB); DOHLER MISCHA (GB);) 9 January 2003 (2003-01-09) page 6, line 19 - page 8, line 34 page 10, line 18 - line 34 page 17, line 14 - page 18, line 8 page 20, line 15 - line 24 page 74, line 27 - page 76, line 8 claims 1,25,29 abstract -----	1-3,6, 10-13, 18,19,21
P,A	WO 2004/038958 A (WIDEFI INC ; GAINNEY KENNETH M (US); PROCTOR JAMES A JR (US)) 6 May 2004 (2004-05-06) paragraph '0009! paragraph '0011! - paragraph '0015! paragraph '0021! - paragraph '0024! paragraph '0051! figures 1,3 -----	1-3,6, 10-13, 18,19,21
E	WO 2004/062305 A (WIDEFI INC ; GAINNEY KENNETH M (US); PROCTOR JAMES A JR (US)) 22 July 2004 (2004-07-22) paragraphs '0007!, '0008!, '0017! paragraph '0031! - paragraph '0034! paragraph '0038! - paragraph '0041! figures 1,4,5 -----	1-3,6, 10-13, 18,19,21
A	US 2002/128039 A1 (FINN JAMES S) 12 September 2002 (2002-09-12) paragraphs '0083!, '0127! paragraph '0200! - paragraph '0213! paragraph '0217! - paragraph '0224! paragraph '0227! - paragraph '0230! figures 9,10 -----	20
A	US 2002/064245 A1 (MCCORKLE JOHN W) 30 May 2002 (2002-05-30) paragraph '0003! paragraph '0070! - paragraph '0072! paragraph '0162! - paragraph '0173! paragraphs '0178!, '0179! figure 9 -----	20

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INTERNATIONAL SEARCH REPORT

Int'l Application No
PCT/GB2004/002201

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	WO 2004/049177 A (SANDISK CORPORATION) 10 June 2004 (2004-06-10) paragraph '0006! - paragraph '0009! paragraph '0022! paragraph '0031! - paragraph '0044! abstract; figures 3-6 -----	20

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2004/002201

Box II Observations where certain claims were found unsearchable (Continuation of item 2 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 III Observations where unity of invention is lacking (Continuation of item 3 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.:
1-3, 6, 10-13, 18-21

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: 1-3, 6, 10-13, 18, 19, 21

A forwarding (relay) node in a mesh network for forwarding packets received on a first channel from a first node to a second node on a second channel by using a connection table to store connection data associating the first channel with the second channel.

2. claims: 4, 5

A data packet definition in an UWB network, whereby the packet includes payload data and UWB channel identification data, and could additionally comprise destination identification data.

3. claims: 7-9,14-17,22-30

A method for initiating a UWB device by broadcasting an alert message, and
a procedure for channel setup comprising the steps of:
- broadcasting a connection request
- receive a connection response /connection established message, and
- determining an UWB channel for employing communication.

4. claim: 20

A special implementation of a controller providing a memory access control being the master of an additional (second) data bus.

INTERNATIONAL SEARCH REPORT

 International Application No
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