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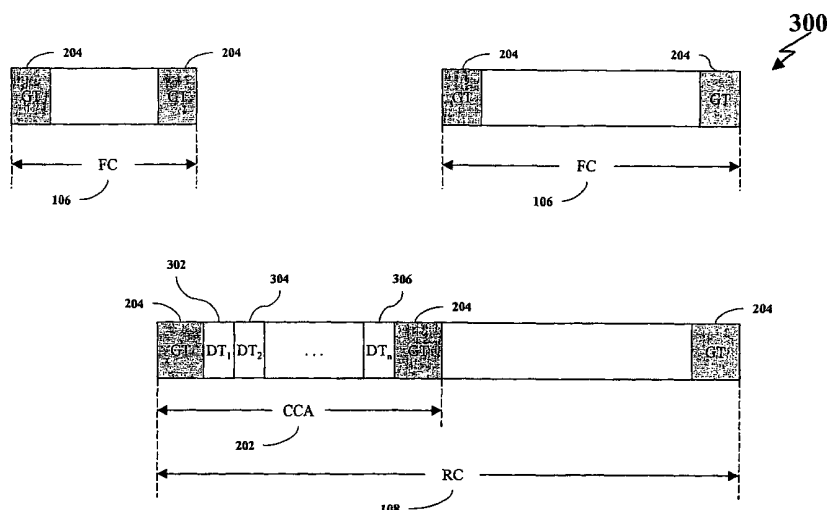
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- (74) Agent: **CARRANO, Cono, A.**; Brobeck, Phleger & Harrison, LLP, Intellectual Property Dpt., Suite 800, 1333 H Street, NW, Washington, DC 20005 (US).
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- (71) Applicant: **EMBEDDED WIRELESS (INTERNATIONAL) LIMITED** [US/US]; Suite 1105, 88 Howard Street, San Francisco, CA 94105 (US).
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1 February 2001
- (72) Inventor: **MARGON, Kenneth**; 5100 McDonell Avenue, Oakland, CA 94619 (US).
- 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.

(54) Title: SYSTEM AND METHOD FOR SINGLE-POINT TO FIXED-MULTIPOINT DATA COMMUNICATION



(57) Abstract: Systems and methods for single-point to fixed-multipoint communication. The invention dynamically allocates bandwidth based on traffic demands, thus providing efficient bandwidth utilization, particularly with bursty or time sensitive data traffic. A system includes a Base Station and a plurality of Remote Stations. The Base Station transmits information to the Remote Stations via a Forward Channel and the Remote Stations transmit information via a Reverse Channel. Before transmitting on the Reverse Channel, each of the Remote Stations listens (monitors) the Reverse Channel to ascertain whether any other Remote Station is transmitting. Remote Stations transmit data only when a Remote Station determines that the channel is clear. The Remote Stations listen in sequential order, eliminating the probability of collisions caused by simultaneous transmissions from Remote Stations. The data traffic is accordingly aggregated, thus providing efficient bandwidth utilization.

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/00844

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04L12/56 H04L12/28

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 H04Q

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)

WPI Data, PAJ, EPO-Internal, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 682 604 A (KASHI HAIM ET AL) 28 October 1997 (1997-10-28)	1-3,5-7, 15-19, 24,25, 28-30, 32-35, 40, 42-46, 50-53, 55-57, 61-63, 66,67
Y	abstract column 1, line 6 -column 4, line 63 column 6, line 7 - line 13	4,8, 10-13, 20,23, 26,27, 31,
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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

"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.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

18 October 2000

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01.11.2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Vaskimo, K

## INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y	page 1, line 5 -page 4, line 14	4,8, 10-13, 17,18, 20,23, 27,31, 36-39, 41,44, 45,47, 49,54, 58-60,64 9,14,16, 21,22, 29,43, 48,52, 65,67
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A		1-3,5-9, 12,14, 23,24, 28-30, 32-34, 36,38, 40,55
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International Application No

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Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A		1,5,32, 33,55-57
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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/00844

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A		1,19,21, 22,32, 46,48, 55,63,65
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A		1,19,21, 22,32, 46,48, 55,63,65

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 00/00844

## 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: 1-16,19,23-43,46,49-63,66,67,  
as far as relating to the first invention

A system providing for remote station access to a reverse channel, where remote stations monitor said reverse channel during predetermined and assigned monitoring intervals, where said stations access said reverse channel when said channel is clear, and where different stations are assigned addresses from different sets of allocatable addresses.

2. Claims: 1,15,17,18,32,42,44,45,  
as far as relating to the second invention

A system providing for remote station access to a reverse channel, where remote stations monitor said reverse channel during predetermined and assigned monitoring intervals, where said stations access said reverse channel when said channel is clear, and where said predetermined monitoring intervals are dynamically allocated.

3. Claims: 1,19-22,32,46-48,55,63-65,  
as far as relating to the third invention

A system providing for remote station access to a reverse channel, where remote stations monitor said reverse channel during predetermined and assigned monitoring intervals, where said stations access said reverse channel when said channel is clear, and where specific guard times are used between different intervals;



# INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

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