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- (81) **Designated States** (unless otherwise indicated, for every
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BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,

DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG,
MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM,
PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC,
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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii))

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(54) **Title:** SWITCHABLE LINEAR AND SATURATED VERY SMALL APERTURE TERMINAL (VSAT) MODEM

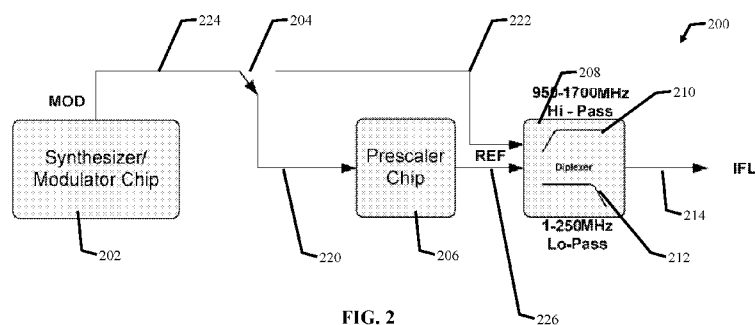


FIG. 2

(57) **Abstract:** A modem to interface with a constant envelope saturated and/or linear radio, the modem including: a synthesizer modulator configured to generate a reference signal; a prescaler configured to reduce the reference signal to a lower frequency signal; a switch configured to enable the prescaler; and an output configured to output the reference signal when the prescaler is disabled, and configured to output the lower frequency signal as the reference signal when the prescaler is enabled.

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2016/042679

A. CLASSIFICATION OF SUBJECT MATTER
 INV. H04B7/185 H04B1/40
 ADD.

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)

H04B H03K H03L

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 practicable, 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	US 5 039 956 A (SOMER GERALD L [US]) 13 August 1991 (1991-08-13) column 1, line 20 - line 43 column 2, line 62 - line 65 column 4, line 30 - line 38 -----	1-10
A	EP 0 592 190 A2 (NEC CORP [JP]) 13 April 1994 (1994-04-13) figure 3 column 3, line 33 - line 43 column 10, line 16 - line 20 -----	1-10
A	WO 98/20629 A1 (ERICSSON GE MOBILE INC [US]) 14 May 1998 (1998-05-14) figure 3 page 6, line 18 - line 20 page 7, line 10 - line 14 ----- -/-	1-10



Further documents are listed in the continuation of Box C.



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 application or patent 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

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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

Date of the actual completion of the international search

11 January 2017

Date of mailing of the international search report

17/01/2017

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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.
A	US 5 559 809 A (JEON SOON I [KR] ET AL) 24 September 1996 (1996-09-24) figure 1 column 1, line 17 - line 32 -----	1-10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2016/042679

Box No. 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 No. 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 fees, this Authority did not invite payment of additional fees.
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.:

1-10

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ 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: 1-10

A modem that may reduce the frequency of a reference signal

2. claims: 11-20

A satellite modem that generate a reference signal in
response to a signal

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2016/042679

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5039956	A	13-08-1991	NONE
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