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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte AHMADREZA ROFOUGARAN and BOJKO MARHOLEV

Appeal 2011-000712
Application 11/425,551
Technology Center 2600

Before JOSEPH L. DIXON, ST. JOHN COURTENAY III, and
CARLA M. KRIVAK, *Administrative Patent Judges*.

DIXON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a rejection of claims 1-25. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

INVENTION

The claims are directed to wireless communication. Claim 17, reproduced below, is representative of the claimed subject matter.

17. A system for supporting wireless communication, the system comprising:

an FM frequency synthesizer;

an FM frequency converter, communicatively coupled to said FM frequency synthesizer, for transmitting and receiving FM signals;

an FM processor for processing said received FM signals;

a Bluetooth frequency synthesizer;

a Bluetooth frequency converter, communicatively coupled to said Bluetooth frequency synthesizer, for transmitting and receiving Bluetooth signals;

a Bluetooth processor for processing said [] Bluetooth signals; and

a frequency controller, communicatively coupled to said FM processor and to said Bluetooth processor, for controlling said FM frequency synthesizer and said Bluetooth frequency synthesizer, wherein said FM signals are generated independently of said Bluetooth signals.

REFERENCE

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Dolle US 6,609,010 B1 Aug. 19, 2003

REJECTION

Claims 1-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dolle.

ANALYSIS

Claims 1-20 and 22-25

Regarding representative independent claim 17, Appellants contend that “Dolle does not (and cannot) apply to Bluetooth (2.4 GHz) and FM (e.g., 47.9 MHz) frequency band dual transceiver systems” (App. Br. 12). Appellants also contend that by equating “Dolle’s synthesizer 2 to Appellant[s]’ both ‘an FM converter’ and ‘**said** FM frequency synthesizer’ and Dolle’s synthesizer 3 to Appellant[s]’ both ‘a Bluetooth (BT) converter’ and ‘**said** BT frequency synthesizer’ . . . the Examiner has erroneously misconstrued Appellant[s]’ separate FM frequency synthesizer and FM converter as the same element, and the separate BT frequency synthesizer and the BT converter as the same element” (App. Br. 13). Appellants further contend that by equating “Dolle’s baseband processor 1 and control unit 8 together as a whole, to all three of Appellant[s]’ ‘FM processor,’ ‘BT processor’ and ‘Frequency controller’ . . . the Examiner has also erroneously misconstrued Appellant[s]’ ‘FM processor,’ ‘BT processor’ and the ‘Frequency [controller]’ as indistinguishable from each other” (App. Br. 14).

Finally, Appellants contend that “Dolle also does not disclose or suggest ‘wherein said FM signals are generated independently of said Bluetooth signals,’ as recited in Appellant[s’] claim 17” (App. Br. 15). We disagree.

Despite Appellants’ arguments that “Dolle’s OFDM [Orthogonal Frequency Division Multiplexing] systems [sic] is completely irrelevant to Bluetooth and FM frequency transceiver system[.]” and “Dolle’s dual band OFDM systems operate in the microwave (5.15-5.35 GHz) and millimeter wave (59.36-60.64 GHz) frequency range (*see* Dolle’s table 1 at col. 6)” (App. Br. 12), Dolle’s disclosure is broader than OFDM, which is simply a preferred example. Notably, Dolle states “The present invention relates to a dual frequency band transceiver technique particularly adapted *for example* for a channel mapping solution of dual band OFDM systems.” (Dolle, col. 1, ll. 5-7) (emphasis added). Accordingly, Dolle’s disclosure is not limited to OFDM, but rather discusses the transceiver 10 of Figure 1 in general fashion:

[The system] operate[s] in two different frequency ranges with different propagation properties and thus fulfills a wide range of application requirements. In addition the structure allows interoperability between different systems (system **1** and system **2**, for example), which are not only distinguished by its different transmission frequencies but also by its different channel bandwidth.

(Dolle, col. 5, ll. 32-38). Further, Dolle contemplates applications in a wide range of available frequency ranges, including “800 MHz, 2.4 GHz, 5-6 GHz, about 10 GHz, 24 GHz and 59-64 GHz” (Dolle, col. 1, ll. 15-17). As Appellants admit, Bluetooth operates in the range of 2.4 GHz (App. Br. 12), and is thus suggested by Dolle, even though it is not explicitly disclosed. Additionally, the absence of any explicit mention of using FM as one of the

systems in Dolle's dual transceiver is not alone persuasive of non-obviousness. Appellants do not provide evidence or specific argument as to why Dolle could not accommodate FM as one of its systems. We are therefore not persuaded that one of ordinary skill in the art would not have used Bluetooth and FM as the two systems of Dolle's dual transceiver.

Regarding Appellants' argument that the Examiner misconstrues "Appellant[s]' separate FM frequency synthesizer and FM converter as the same element, and the separate BT frequency synthesizer and the BT converter as the same element" (App. Br. 13), we agree with the Examiner and conclude that claim 17 does not require that these elements be separate or distinct (Ans. 7). Rather, the only limitation regarding the interrelationship between the elements "FM frequency synthesizer" and "FM frequency converter" is that they be "communicatively coupled" to each other. Claim 17 thus does not provide sufficient structural limitations with which to distinguish these elements from Dolle's integrated "Rx/Tx LO1 Synthesizer" block 2 (*see* Dolle, Fig. 1). Similarly, the only limitation regarding the interrelationship between the elements "Bluetooth frequency synthesizer" and "Bluetooth frequency converter" is that they be "communicatively coupled" to each other. Claim 17 thus does not provide sufficient structural limitations with which to distinguish these elements from Dolle's integrated "Rx/Tx LO2 Synthesizer" block 3 (*see* Dolle, Fig. 1).

Further, regarding Appellants' argument that the Examiner misconstrues "Appellant[s]' 'FM processor,' 'BT processor' and the 'Frequency [controller]' as indistinguishable from each other" (App. Br. 14), the Examiner only relies on Dolle's baseband processor block 1 for disclosing the elements "FM processor" and "Bluetooth processor," and

relies on Dolle's control unit 8—a separate unit from the baseband processor block—for disclosing the element of “a frequency controller” (*see* Ans. 3-4). Claim 17 defines the “FM processor” functionally, reciting that it is “for processing said received FM signals.” However, this does not specify what particular processing is performed by the “FM processor.” Accordingly, the broadest reasonable interpretation of “FM processor” is any component that performs some kind of signal processing for received FM signals. Similarly, claim 17 defines the “Bluetooth processor” functionally, reciting that it is “for processing said [] Bluetooth signals.” This does not specify what particular processing is performed by the “Bluetooth processor.” Accordingly, the broadest reasonable interpretation of “Bluetooth processor” is any component that performs some kind of signal processing for Bluetooth signals. While Dolle only discloses a single baseband processor block (*see* Dolle, Fig. 1), this block must contain components to process signals from the two separate systems that Dolle's dual transceiver implements. And as discussed above, it would have been obvious to use FM and Bluetooth as the two systems in Dolle's dual transceiver. Thus, it would have been obvious that Dolle's baseband processor would implement the functions of the claimed FM processor and Bluetooth processor. Additionally, we agree with the Examiner and find that claim 17 does not require that the “FM processor” and “Bluetooth processor” be separate or distinct (Ans. 7). As such, claim 17 does not contain sufficient structural limitations to distinguish the “FM processor” and “Bluetooth processor” from Dolle's baseband processor block.

With respect to Appellants' final argument that “Dolle also does not disclose or suggest ‘wherein said FM signals are generated independently of

said Bluetooth signals,' as recited in Appellant[s'] claim 17" (App. Br. 15), we first note that claim 17 does not define the term "independently." The Specification does not aid in defining the term "independently" as it does not contain the term. Absent a specific definition of "independently," we cannot say that the Examiner erred by broadly construing the term to include the generation of two signals with different pathways to separate antennae (*see* Ans. 8), a construction we find reasonable. Furthermore, the Examiner finds (*see* Ans. 4, *see also id.* at 8) Dolle discloses such a system (Dolle, col. 4, l. 11-col. 5, l. 40; Fig. 1). Additionally, Dolle discloses that

However, it is to be noted that according to another embodiment the cascade-like connection of the frequency converting blocks **2** and **3** connected with each other by means of the RF switch **6** can be replaced by a parallel structure of the frequency converting blocks, in which case a RF switch selects whether the data output by the baseband block (or by another frequency converting blocks) are passed to a frequency converting block adapted to upconvert the input data to the first transmission frequency band f_{c1} or to another frequency converting block adapted to upconvert the input data to the second transmission frequency band f_{c2} .

(Dolle, col. 4, ll. 55-65). In other words, contrary to Appellants' argument that generation of the second system's signal relies on the first frequency synthesizer, and is thus not "generated independently" (Reply Br. 8), the frequency synthesizers for the first system and second system in Dolle's dual transceiver can operate in parallel, i.e., independently, to upconvert signals to the respective frequency ranges of the two systems.

We are therefore not persuaded that the Examiner erred in rejecting representative claim 17, and claims 1-16 and 22-25 not separately argued. *See* 37 C.F.R. § 41.37 (c)(1)(iv). Although Appellants nominally argue

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claims 18-20 separately, Appellants merely recite the Examiner's findings and rely on the same arguments presented for claim 17, without presenting any new arguments (*see* App. Br. 16-17). Therefore, we sustain the rejection of claims 18-20 for the reasons discussed above.

Claim 21

Appellants contend that the "Examiner's allegation that Dolle discloses 'frequency hopping (AFH) map' is also unsupported" (App. Br. 18). However, the Examiner does not assert that Dolle discloses this feature, but rather that it is known that frequency hopping is part of the Bluetooth specification (Ans. 5). Appellants neither request evidence to support this finding nor show that the finding is incorrect. We are therefore not persuaded that the Examiner erred in rejecting claim 21.

CONCLUSION OF LAW

The Examiner did not err in rejecting claims 1-25 under 35 U.S.C. § 103(a).

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DECISION

For the above reasons, we affirm the rejection of claims 1-25.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See* 37 C.F.R. § 41.50(f).

AFFIRMED

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