Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL P. HOMILLER

Appeal No. 2001-0588
Application No. 08/609,308

ON BRIEF

Before KRASS, FLEMING and BLANKENSHIP, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-4, 6-8, 11-13 and 16. Claims 9, 10, 14 and 15 have been indicated by the examiner in the answer as being directed to allowable subject matter and are not before us on appeal.

The invention pertains to a radio transmitter and, more particularly, to an Intermediate Frequency (IF) source for the transmitter, wherein the IF source has a

Voltage Controlled Oscillator (VCO) which is frequency modulated by an audio waveform and is tuned to generate a first frequency. A frequency prescaler receives the first frequency and generates a second frequency which is a particular fraction of the first frequency and wherein the second frequency is mixed with an RF waveform.

Representative independent claim 1 is reproduced as follows:

1. An intermediate frequency (IF) source, comprising:

a voltage controlled oscillator (VCO) tuned to generate a first output frequency having a frequency value of f, wherein said VCO is frequency modulated by an audio waveform; and

a frequency prescaler for receiving said first output frequency and generating a second output frequency having a frequency value of f/N, wherein N is greater than one, said second output frequency being operable for mixing with an RF waveform.

The examiner relies on the following references:

Kramer, Jr. et al. (Kramer)	5,230,088	Jul. 20, 1993
Cheah	5,309,479	May 03, 1994
Hashimoto	JP 04-245,814[1]	Sep. 02, 1992

Claims 1-4 and 6-16 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner offers Hashimoto and Cheah with regard to claims 1, 2, 6-8 and 11-13, adding Kramer to this combination with regard to claims 3, 4, 9, 10 and 14-16.

[1] Our understanding of the Hashimoto reference is derived from an English translation thereof prepared for the United States Patent and Trademark Office, a copy of said translation being attached hereto.

Reference is made to the brief and answer for the respective positions of appellant and the examiner.

OPINION

The examiner applies Hashimoto to the independent claim 1 as follows:

Hashimoto is said to disclose an intermediate frequency source comprising a VCO 11 tuned to generate a first output frequency F1' having a frequency fr, where the VCO 11 is frequency modulated by an audio waveform produced by a microphone, and a frequency prescaler 12 for receiving the first output frequency F1' and generating a second output frequency F1'/N, wherein N is greater than one. The examiner also contends that Hashimoto discloses a loop (11, 12, 13, 14) producing F1' and mixing F1' in a mixer M1 with a second output frequency RF waveform f1. While it is not clear what the examiner means by "However, for clarification said second output frequency being operable for mixing with a RF waveform" [Paper No. 15-page 3], we presume that the examiner is not certain that Hashimoto discloses the claimed limitation of "wherein said second output frequency is operable for mixing with an RF waveform" so the examiner relies on Cheah. Cheah is cited as disclosing a low cost band transmitter with a frequency prescaler 4 for receiving a first output frequency and generating a second output frequency having a frequency value of f/N, wherein N is greater than one and the second frequency is operable for mixing 6 with a RF waveform 7.

Thus, it is not even clear why the examiner is applying two references since the examiner appears to be saying that each one of the references separately discloses the claimed subject matter. But the examiner concludes by stating that it would have been obvious "to specifically provide in Hashimoto, a second output frequency being operable for mixing with an RF waveform, as taught by Cheah" contending that the combination would have been motivated "by a desire to provide a lower operating frequency for the local oscillator which further lowers the system cost," referring to column 3, lines 30-40, of Cheah [Paper No. 15-page 3]. Based on this conclusion, it would appear that the examiner, once again, relies on Cheah merely for a showing of a second output frequency being operable for mixing with a RF waveform.

In any event, the only reason provided by the examiner for making the combination is misplaced. While the examiner contends that the combination would have been made in order "to provide a lower operating frequency for the local oscillator which further lowers the system cost," as pointed out by appellants, at page 8 of the brief, it is not apparent why the artisan would have constructed the claimed invention having a higher oscillator frequency when the teaching relied on (Cheah) directs the artisan to a lower frequency local oscillator.

Moreover, even if Hashimoto and Cheah were combined, the instant claimed subject matter would still not be achieved since there would have been no apparent reason to connect the output of Hashimoto's frequency divider 12 to mix with an RF waveform. Appellant relies on the claim language, "wherein said second output frequency is operable for mixing with an RF waveform." We find that this language, when interpreted in light of the specification, does require an actual connection of the second output frequency to an RF mixer. As such, if the second output frequency in Hashimoto is the output of divider 12, as it must be to meet the rest of the claim language, then there is no connection of this output to a mixer for mixing with an RF waveform and there is no convincing reason provided by the examiner for making such a connection. Even if Cheah discloses a "second output frequency...operable for mixing with an RF waveform," there would have been no reason to use such a teaching to arbitrarily pick off an output frequency from the output of divider 12 in the phase lock loop of Hashimoto and mix this with an RF waveform.

Accordingly, we will not sustain the rejection of claim 1 under 35 U.S.C. § 103.

Thus, we also will not sustain the rejection of claim 2, or of claims 3 and 4 (since Kramer does not provide for the deficiencies of Hashimoto and Cheah) under 35 U.S.C. § 103.

With regard to claims 6-8, appellant makes the same argument, supra, with regard to the references not disclosing a second output frequency "operable for mixing with an RF waveform." For the reasons enunciated supra, we will not sustain the rejection of claims 6-8 and 11 under 35 U.S.C. § 103.

With regard to independent claim 12, appellant argues that since Hashimoto discloses an output frequency of 5kHZ, artisans would have understood that a frequency of 5kHZ would not be a teaching of an IF source since "an IF source of 5kHZ would, *inter alia*, generate image signals which could not be removed by filtering in that the bandwidth of the filters would be so narrow as to be practically unrealizable" [brief-page 14].

In view of the fact that appellant argues that the low frequency (5MHz) of Hashimoto would not constitute an IF source, and the instant specification indicates that IF sources are "typically in the 40 MHZ to 300 MHZ range" [specification-page 1], together with a lack of any convincing argument or response from the examiner on this point, although the examiner does agree that Hashimoto discloses an output frequency of 5MHz, we hold that appellant's IF source must be between 40MHz and 300MHz and that Hashimoto clearly does not teach this range.

Accordingly, and for the reasons supra, we will not sustain the rejection of claim 12 under 35 U.S.C. § 103.

For the reasons supra, we will not sustain the rejection of claims 1, 2, 6-8 and 11-13 under 35 U.S.C. § 103 as unpatentable over Hashimoto in view of Cheah.

With regard to the rejection of claims 3, 4 and 16 under 35 U.S.C. § 103 over Hashimoto, Cheah and Kramer, we will not sustain the rejection of claims 3 and 4 because Kramer does not provide for the deficiencies, noted supra, with regard to claim 1.

We also note that the examiner indicates [answer-page 7] that claims 9, 10, 14 and 15 are directed to allowable subject matter. However, claim 16, which is not included in this list, depends from claim 15. Thus, if claim 15 is allowable, so, too, must be claim 16. Accordingly, we will not sustain the rejection of claim 16 under 35 U.S.C. § 103 because the examiner clearly did not intend for this claim to be rejected under 35 U.S.C. § 103 over the same references applied against its parent claim when the subject matter of that parent claim has been allowed by the examiner.

We have not sustained the rejection of claims 1-4, 6-8, 11-13 and 16 under 35 U.S.C. § 103.

Accordingly, the examiner's decision is reversed.

REVERSED

ERROL A. KRASS Administrative Patent Judge	)))))) BOARD OF PATENT
MICHAEL R. FLEMING Administrative Patent Judge	) APPEALS) AND) INTERFERENCES
HOWARD B. BLANKENSHIP Administrative Patent Judge	))))

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