

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No.	:	13/590,423	Confirmation No.	9482
Applicant	:	Aleksandar Modrag Tasic		
Filed	:	August 21, 2012		
Art Unit	:	2631		
Examiner	:	Khanh C. Tran		
Docket No.	:	121973		
Customer No.	:	23696		

**AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to an Office Action dated November 14, 2013, please amend the above-identified application as follows:

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.

**Remarks/Arguments** begin on page 7 of this paper.

Attorney Docket No. 121973  
Customer No. 23696

**Amendments to the Claims:**

Please note that all claims currently pending and under consideration in the referenced application are shown below. This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

1. (Currently amended) An apparatus comprising:
  - a first amplifier stage configured to receive and amplify an input radio frequency (RF) signal and provide a first output RF signal to a first load circuit when the first amplifier stage is enabled, the input RF signal comprising transmissions sent on multiple carriers at different frequencies to a wireless device, the first output RF signal including at least a first carrier of the multiple carriers; and
  - a second amplifier stage configured to receive and amplify the input RF signal and provide a second output RF signal to a second load circuit when the second amplifier stage is enabled, the second output RF signal including at least a second carrier of the multiple carriers different than the first carrier.
2. (Original) The apparatus of claim 1, the first amplifier stage comprising a first gain transistor coupled to a first cascode transistor, the second amplifier stage comprising a second gain transistor coupled to a second cascode transistor, and the input RF signal being provided to both the first and second gain transistors.
3. (Original) The apparatus of claim 2, the first amplifier stage further comprising a first inductor coupled to the first gain transistor, and the second amplifier stage further comprising a second inductor coupled to the second gain transistor.
4. (Original) The apparatus of claim 2, the first and second gain transistors having sources

coupled to circuit ground.

5. (Original) The apparatus of claim 2, the first and second amplifier stages providing the first and second output RF signals in a first mode and providing the first output RF signal but not the second output RF signal in a second mode, the first and second cascode transistors being enabled in the first mode, and only one of the first and second cascode transistors being enabled in the second mode.
6. (Original) The apparatus of claim 5, the first and second gain transistors being applied the input RF signal in both the first mode and the second mode, and one of the first and second gain transistors operating in a saturation region and the other one of the first and second gain transistors operating in a linear region in the second mode.
7. (Original) The apparatus of claim 1, further comprising:  
a feedback circuit coupled between an output and an input of at least one of the first and second amplifier stages.
8. (Original) The apparatus of claim 7, the feedback circuit comprising a resistor, or a capacitor, or both a resistor and a capacitor.
9. (Original) The apparatus of claim 1, further comprising:  
a first attenuation circuit coupled to the first amplifier stage and configured to receive the input RF signal; and  
a second attenuation circuit coupled to the second amplifier stage and configured to receive the input RF signal.
10. (Original) The apparatus of claim 1, further comprising:  
an attenuation circuit coupled to the first and second amplifier stages and configured to receive the input RF signal.

11. (Original) The apparatus of claim 1, further comprising:
  - an input matching circuit coupled to the first and second amplifier stages and configured to receive a receiver input signal and provide the input RF signal.
12. (Original) The apparatus of claim 11, the input matching circuit being tunable and comprising at least one adjustable circuit component.
13. (Original) The apparatus of claim 1, further comprising:
  - a third amplifier stage configured to receive and amplify a second input RF signal and provide the first output RF signal to the first load circuit when the third amplifier stage is enabled; and
  - a fourth amplifier stage configured to receive and amplify the second input RF signal and provide the second output RF signal to the second load circuit when the fourth amplifier stage is enabled.
14. (Original) The apparatus of claim 1,
  - the first amplifier stage configured to receive and amplify the input RF signal or a second input RF signal and provide the first output RF signal to the first load circuit when the first amplifier stage is enabled, and
  - the second amplifier stage configured to receive and amplify the input RF signal or the second input RF signal and provide the second output RF signal to the second load circuit when the second amplifier stage is enabled.
15. (Original) The apparatus of claim 2, the first amplifier stage further comprising a third gain transistor coupled to a third cascode transistor, the second amplifier stage further comprising a fourth gain transistor coupled to a fourth cascode transistor, and a second input RF signal being provided to both the third and fourth gain transistors.

16. (Original) The apparatus of claim 14, further comprising:

- a third amplifier stage configured to receive and amplify a third input RF signal or a fourth input RF signal and provide the first output RF signal to the first load circuit when the third amplifier stage is enabled; and
- a fourth amplifier stage configured to receive and amplify the third input RF signal or the fourth input RF signal and provide the second output RF signal to the second load circuit when the fourth amplifier stage is enabled.

17. (Currently amended) A method comprising:

- amplifying a first input radio frequency (RF) signal with a first amplifier stage to obtain a first output RF signal when the first amplifier stage is enabled, the first input RF signal comprising transmissions sent on multiple carriers at different frequencies to a wireless device, the first output RF signal including at least a first carrier of the multiple carriers; and
- amplifying the first input RF signal or a second input RF signal with a second amplifier stage to obtain a second output RF signal when the second amplifier stage is enabled, the second output RF signal including at least a second carrier of the multiple carriers different than the first carrier.

18. (Original) The method of claim 17, further comprising:

- enabling the first and second amplifier stages in a first mode to obtain the first and second output RF signals; and
- enabling the first amplifier stage and disabling the second amplifier stage in a second mode to obtain the first output RF signal but not the second output RF signal.

19. (Currently amended) An apparatus comprising:

first means for amplifying configured to amplify a first input radio frequency (RF) signal and provide a first output RF signal when the first means for amplifying is enabled, the first input RF signal comprising transmissions sent on multiple carriers at different frequencies to a wireless device, the second output RF signal including at least a second carrier of the multiple carriers different than the first carrier; and

second means for amplifying configured to amplify the first input RF signal or a second input RF signal and provide a second output RF signal when the second means for amplifying is enabled, the second output RF signal including at least a second carrier of the multiple carriers different than the first carrier.

20. (Original) The apparatus of claim 19, further comprising:

means for enabling the first and second means for amplifying in a first mode to obtain the first and second output RF signals; and

means for enabling the first means for amplifying and disabling the second means for amplifying in a second mode to obtain the first output RF signal but not the second output RF signal.

## REMARKS

The Office Action mailed November 14, 2013, has been received and reviewed. Claims 1-20 are pending in the application. Claims 1, 7, 17 and 19 stand rejected. Claims 2-6, 8-16, 18 and 20 are objected to as depending from rejected base claims. Applicant has amended claims 1, 17 and 19, submits the following remarks, and respectfully requests reconsideration of the application. Support for Applicant's claim amendments is found in at least paragraph 0057 of Applicant's as-filed specification. No new matter has been added.

### 35 U.S.C. § 103(a) Obviousness Rejections

#### Obviousness Rejection Based on Eisenhut

Claims 1, 7, 17 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,751,513 to Eisenhut *et al.* ("Eisenhut"). Applicant has amended the claims and respectfully requests reconsideration of the rejection as hereinafter set forth.

To establish a *prima facie* case of obviousness the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974); *see also* MPEP § 2143.03. Additionally, there must be "a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1742, 167 L.Ed.2d 705, 75 USLW 4289, 82 U.S.P.Q.2d 1385 (2007). Finally, to establish a *prima facie* case of obviousness there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Furthermore, the reason that would have prompted the combination and the reasonable expectation of success must be found in the prior art, common knowledge, or the nature of the problem itself, and not based on the Applicants' disclosure. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006); MPEP § 2144. Underlying the obvious determination is the fact that statutorily prohibited hindsight cannot be used. *KSR*, 127 S.Ct. at 1742; *DyStar*, 464 F.3d at 1367.

The 35 U.S.C. § 103(a) obviousness rejections of claims 1, 7, 17 and 19 are improper because the elements for a *prima facie* case of obviousness are not met. Specifically, the rejection fails to meet the criterion that ***the prior art reference(s) must teach or suggest all the***



*claims limitations.*

**Regarding independent claims 1, 17 and 19**, Applicant's independent claims 1, 17 and 19 include claim elements not taught or suggested in the cited reference. Applicant's independent claims 1, 17 and 19 each recite, in part, a "amplify[ing] an input radio frequency (RF) signal and provide a first output RF signal ..., the *first output RF signal including at least a first carrier of the multiple carriers*; and ... amplify[ing] the input RF signal and provide a second output RF signal ..., the *second output RF signal including at least a second carrier of the multiple carriers different than the first carrier.*"

Applicant respectfully asserts that Eisenhut does not teach or suggest Applicant's invention as presently claimed in amended independent claims 1, 17 and 19.

The Office Action concedes:

Eisenhut et al. differs from the application claim in that Eisenhut et al. does *not discloses the input RF signal comprising transmissions sent on multiple carriers* at different frequencies to a wireless device as set forth in the application claim. (Office Action, p. 3; emphasis added)

Applicant concurs.

The Office Action then alleges:

Because the application claim recites the signal input being an input RF signal, therefore, if would have been obvious for one of ordinary skill in the art at the time the invention was made that one recognizes Eisenhut et al. would apply to the input RF signal as claimed. (Office Action, p. 3)

Regardless of the veracity of the above-allegation, Applicant has amended independent claims 1, 17 and 19 to recite "amplify[ing] an input radio frequency (RF) signal and provide a first output RF signal ..., the *first output RF signal including at least a first carrier of the multiple carriers*; and ... amplify[ing] the input RF signal and provide a second output RF signal ..., the *second output RF signal including at least a second carrier of the multiple carriers different than the first carrier.*" which is not taught in Eisenhut.

In contrast, Eisenhut teaches, with respect to Fig. 1, that the output from the first amplifier in signal path 6 is combined with the output from the second amplifier in signal path 7.



Specifically, Eisenhut teaches:

The signal output 73 for the digital signal of the second signal path 7, for example, leads to an input of a switch 10. The switch 10 can assume one of at least two possible states, wherein, in a first switching state, the switch connects the output 73 to an input 91 of a power detector 9. In a second switching state, the switch 10 *connects the output 73 of the second signal path 7 to the input 81* of a demodulation device 8. Furthermore, *the output 63 of the first signal path 6 is also connected to the input 81* of the demodulation device 8. (Eisenhut, col. 5, lns. 35-43; emphasis added)

Applicant respectfully notes that output signals 63 and 73 in Eisenhut are identical in carrier selection and are merely ‘power combined’ at the input 81.

Therefore, since Eisenhut does not teach “amplify[ing] an input radio frequency (RF) signal and provide a first output RF signal ..., the *first output RF signal including at least a first carrier of the multiple carriers*; and ... amplify[ing] the input RF signal and provide a second output RF signal ..., the *second output RF signal including at least a second carrier of the multiple carriers different than the first carrier*” as claimed by Applicant, the cited reference **cannot** render obvious, under 35 U.S.C. §103, Applicant’s invention as presently claimed. Accordingly, Applicant respectfully requests the rejections of independent claims 1, 17 and 19 be withdrawn.

**Regarding dependent claim 7**, the nonobviousness of independent claim 1 precludes a rejection of claim 7 which depends therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, Applicant requests that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to independent claim 1 and claim 7 which depends therefrom.

### **Objections to Claims 2-6, 8-16, 18 and 20/Allowable Subject Matter**

Claims 2-6, 8-16, 18 and 20 stand objected to as being dependent upon rejected base claims, but are indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form. Applicant acknowledges this indication with appreciation, but

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respectfully asserts that the claims in their present form, along with all other claims presently under consideration, are in condition for allowance.

**CONCLUSION**

Claims 1-20 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,

Dated: February 6, 2014

By: /Ramin Mobarhan, Reg# 50,182/

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