

REMARKS

The Applicants appreciate the thorough examination of the subject application. Certain claims have been amended to overcome the Examiner's rejections and more concisely claim and describe the present invention. Claims 1, 3-12, 14-20, 30-34 remain in the application for reconsideration by the Examiner. The Examiner's allowance of all pending claims is solicited.

MATTERS RELATED TO THE SPECIFICATION

The Applicants have identified and corrected a typographical informality in the specification as indicated above. No new matter has been added by this change.

MATTERS RELATED TO THE CLAIMS

The Examiner has rejected claims 1, 3-8, 10, 12-17, 19, 21-26, 28 and 30-34 under 35 U.S.C. 102(b) as anticipated by Newman (U.S. 5,907,816).

Examiner Le has also rejected claims 2, 9, 11, 18, 20, 27 and 29 under 35 U.S.C. 103(a) as obvious over Newman.

The Applicants have amended certain of the enumerated claims to overcome the stated rejections. The specific amendment language is set forth above in the marked-up claims.

CLAIMS 1-11

Newman discloses an antenna system comprising a plurality of individual antennas for radiating or receiving a cellular type signal. A first sector antenna provides antenna coverage for a sector of the coverage area, but with a relatively low gain. A first multi-beam antenna covers the same sector using a plurality of narrow beam antennas that each provide a higher gain than the sector antenna. Thus to provide higher gain operation, the antenna system selects the narrower beam antenna currently providing the best reception of a received signal and couples the received signal to a system receiver.

As Newman states beginning at line 46 of column 2, the predetermined basis upon which he selects a signal from one of the narrow beam antennas may relate to the signal having the highest amplitude or the best available signal-to-spurious-signal ratio. Newman may also select the sector antenna as he explains beginning at line 60 of column 2. As depicted in Newman's Figure 1, the multi-couplers 27-31 (and the multi-couplers 27a-31a) and the switches 33-35 (and the switches 33a-35a) permit multiple combinations of the received signals to provide the best quality signal.

Beginning at line 12 of column 4, Newman describes the use of a second sector antenna and a second set of narrow beam antennas that offer spatial diversity relative to the first sector antenna and the first multi-beam antenna.

But note that Newman's antenna system does not disclose an antenna controller that determines a signal distance between pairs of received signals and configures the antenna structural elements to further increase the signal distance, as the Applicants now claim in amended claim 1. In fact, there is no discussion in Newman of modifying antenna structural elements. Instead, Newman selects the best signal received at one of his available antennas.

Newman also does not discuss correlation between the signals received at his various antennas nor does he disclose increasing the signal distance between the received signals by reconfiguring one or more structural elements of his antennas. The end result of increasing the signal distance is to decrease the correlation between pairs of received signals, as the Applicants now claim. Instead, Newman describes a much simpler system having multiple antennas (with the antenna gain associated with each antenna dependent on the beam width of the antenna) and selecting the antenna signal having the best quality user reception (Newman column 6, lines 49-51).

Support for the various applicant amendments to claim 1 can be found in the Applicants' specification at paragraphs [030], [032] and [070]. The amendment to claim 4 is supported by the application at paragraph [028].

Certain elements now present in amended claim 1 were present in claim 2 as originally submitted. Claim 2 has been canceled. Thus it is instructive to review Examiner Le's rejection of claim 2. From Office Action paragraph 5, it is apparent that the Examiner has focused on antenna spacing and the spatial diversity it provides.

The Applicants do not rely on antenna spacing, but instead on the more general and complex concept of signal distance; increasing the signal distance to improve the processing gain of the antenna system. The controller determines the signal distance between pairs of the received signals and further configures the structural elements until a desired signal quality metric is determined.

Dependent claims 3-11 have been amended as required for consistency with the amendments to claim 1 from which they depend. These claims are considered to be allowable for the same reasons as claim 1 and they set forth additional patentable features of the invention.

CLAIMS 12-20

Independent claim 12 has been amended to include the various elements added to claim 1 to overcome the rejection based on Newman, e.g., configuration of the structural elements changes the operating characteristics of the radiators, the antenna controller for determining a signal distance between the first and second signals and for configuring one or both of the structural elements of the first and second radiators to increase the signal distance. Thus amended claim 12 should now be allowable over the cited art of record for the same reasons as claim 1 should now be allowable.

Dependent claim 13 has been canceled without prejudice.

Dependent claim 14 - 20 have been amended, where required, to comport with the amendments to claim 12. These dependent claims should now be allowable.

CLAIMS 21-29

Independent claim 21 and dependent claims 22-29 have been canceled without prejudice.

CLAIMS 30-34

The Examiner has rejected claim 30-34 by arguing that they “are the broader versions of claims and 13 above [sic] (i.e., one or more structure elements instead of radiator comprising one or more structural elements); therefore they are rejected for the same reasons.”

The reasons for this rejection are not understood. Examiner Le is correct in that claim 13 relates to the configuration of one or more of the structural elements of the first and second radiators. But a proper rejection under Section 102(b) requires that the reference disclose each and every element of the claim. It is not seen where the Newman reference discloses the elements of the Applicants' claim 30 and therefore the rejection cannot stand. Also, the bald suggestion that a broader claim (e.g., claim 30) can be rejected on the same basis as a narrower claim (e.g., claim 13) again does not satisfy the requirements of the law. While a broader claim may be rejected on the same basis as a narrower claim, this rejection is proper only if the reference discloses all elements of the broader claim and the examiner identifies where in the reference those claim elements are disclosed.

Here, Newman does not disclose the antenna having first and second switching elements and their respective alternative connection to ground and feed terminals as claim 30 claims.

The rejection of Claim 31 is also faulty. In claim 31 the antenna comprises first and second terminal ends; according to a first operating condition a first end is connected to a feed while the second end is open, and vice versa for a second condition where the first end is open and the second end is connected to the feed.

These elements are not disclosed by Newman.

In claim 32 the antenna comprises structural elements that are controlled as a function of time. Newman discloses selecting one or more antennas for receiving the signal, based on a signal characteristic, and processing the received signal. No where does Newman disclose controlling the structural elements as a function of time. By "a function of time" the Applicants refer to changing the structural elements as time passes, irrespective of whether other parameters that may influence operation of the system have changed. Newman does not disclose such a feature.

As Examiner Le can see, claim 33 has been amended in a manner similar to the amendments to claim 1. Thus the remarks and arguments highlighting the patentable distinctions between claim 1 and the Newman reference as set forth above also apply to claim 33 and it should be allowable.

Dependent claim 34 is allowable for the same reasons as independent claim 33 from which it depends.

The Applicants petition for an extension of time of one month until July 18, 2010 (July 18, 2010 falling on a Sunday, the response is considered timely if filed on Monday July 19, 2010) under 37 C.F.R. 1.136. The extension of time fee has been paid by charging to a credit card concurrently with the filing of this amendment. .

The Applicants have complied with all of the points raised in the Office Action and it is believed that the remaining claims are in condition for allowance. In view of the foregoing amendments and discussion, it is requested that the Examiner's claim rejections have been overcome. It is respectfully requested that the Examiner reconsider the rejections and issue a Notice of Allowance for all the claims pending in the application.

If a telephone conference will assist in clarifying or expediting this Amendment or the claim changes made herein, Examiner Le is invited to contact the undersigned at the telephone number below. The undersigned hopes that he and Examiner Le can engage in a cooperative search for allowable subject matter, as Director Kappos has suggested in his recent remarks. I am open to a telephone interview at any time during this process.

Respectfully submitted,
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