[0167] Frequency receiving unit **108** may include an AGC (Automatic Gain Control) device **482** operable to control the gain of each beam receiver **112**. In operation, AGC device **482** may control the gain of each beam receiver **112** based on the strength of input signals received via each uplink beam **130** such that the output strength of each beam receiver **112** is the same or similar. However, AGC device **482** may be locked such that the gain of each beam receiver **112** is held constant, and thus the strength of the output of each beam receiver **112** may vary depending on the strength of the input signals being received via each uplink beam **130**. AGC device **482** may be locked such that the gain of each beam receiver **112** is held at a constant value equal to a gain setting **490** determined by central processing unit **118**. In one embodiment, AGC device **482** is turned off at the beginning of a fast decision time slot such that the signal strength of each uplink beam **130** may be measured and compared against each other and/or against a threshold value, as discussed below in greater detail.

[0168] Central processing unit **118** may comprise a gain control module **488** generally operable to determine gain settings **490** for each beam receiver **112** based on one or more inputs. Gain control module **488** may comprise a gain storage unit **494** generally operable to store gain values for each beam receiver **112**. Gain storage unit **494** is operable to receive and store gains values determined by AGC device **482** during operation of AGC device **482**. Gain control module **488** is operable to determine a gain setting **490** for each beam receiver **112**, as described in greater detail below with reference to FIGS. **14** and **15**. The gain settings **490** for each beam receiver **112** are communicated to receiving system **100** and used to set the gain of each beam receiver **112** for the beginning of a particular time slot in which AGC device **482** is turned off.

[0169] As shown in the embodiment of FIG. **12**, processing module **62** comprises fast decision beam selection module **408** and signal strength module **402**. Fast decision beam selection module **408** comprises a filter, or buffer, **480** and one or more fast decision algorithms **430**. Buffer **480** and fast decision algorithms **430** are generally operable to determine fast decision beam selections **440** based at least in part on inputs received from signal strength module **402**. Buffer **480** may include an average power calculator **436** operable to determine average signal strengths based on a plurality of samples within buffer **480**. Fast decision algorithms **430** may include a minimum threshold **432** and an improvement threshold **434**, discussed in greater detail below.

[0170] As discussed above with reference to FIG. **11**, relevant power module **403** may be operable to receive uplink beams **130** from receiving system **100** and measure the relevant power **439** of each uplink beam **130**. The relevant power **439** of each uplink beam **130** may be based on the input power of that uplink beam **130** received at the corresponding beam receiver **112** and the current gain of that beam receiver **112**. For example, if the input power of an uplink beam **130** received at a beam receiver **112** is 5 dB and the current gain of that beam receiver **112** is −2 dB, the relevant power **439** of that uplink beam **130** is 3 dB.

[0171] Relevant power module **403** may be operable to repetitively sample the relevant power **439** of each uplink beam **130**. In a particular embodiment, relevant power module **403** is operable to sample the relevant power **439** for each uplink beam **130** at the approximate rate of seven times per GSM bit. In another embodiment, relevant power module **403** is operable to sample the relevant power **439** for each uplink beam **130** approximately 24 times every GSM bit.

[0172] Fast decision beam selection module **408** is operable to receive the sampled relevant power **439** of each uplink beam **130** from relevant power module **403**. Buffer **480** is operable to receive each sample of the relevant power **439** of each uplink beam **130**. Buffer **480** includes an average power calculator **436** operable to determine an average power **484** of each uplink beam **130** over a particular period of time or based on a particular number of samples of the relevant power **439** that uplink beam **130** within buffer **480**. For example, in one embodiment, average power calculator **436** may be operable to determine the average power **484** of each uplink beam **130** based on the six most recent samples received from relevant power module **403**. In addition, average power calculator **436** may be operable to update the average power **484** of each uplink beam **130** after each new sample or after some number of new samples received from relevant power module **403**. Thus, the average power **484** of each uplink beam **130** may be dynamic. In a particular embodiment, average power calculator **436** calculates or updates the average power **484** of each uplink beam **130** after every new sampling of relevant power **439** by relevant power module **403**.

[0173] Fast decision algorithm **430** is operable to determine the strongest uplink beam **130** (in other words, the uplink beam **130** with the highest average power **484**) and to determine whether the average power **484** of the strongest uplink beam **130** is greater than minimum threshold **432**. Minimum threshold **432** may be any appropriate value expressed in decibels or volts. For example, in one embodiment, minimum threshold **432** is approximately 9 dB. In another embodiment, minimum threshold **432** is approximately 4 dB.

[0174] In one embodiment, if the average power **484** of the strongest uplink beam **130** is greater than minimum threshold **432**, fast decision beam selection module **408** may select that uplink beam **130** as the fast decision beam selection **440**. In that embodiment, if the average power **484** of the strongest uplink beam **130** is less than minimum threshold **432**, fast decision beam selection module **408** may select none of the uplink beams **130** as the fast decision beam selection **440**. In another embodiment, if the average power **484** of the strongest uplink beam **130** is less than minimum threshold **432**, fast decision beam selection module **408** maintains the most recently selected fast decision beam selection **440**.

[0175] Fast decision algorithm **430** may continue to analyze the dynamic average power **484** of each uplink beam **130** even after an uplink beam **130** has been selected as fast decision beam selection **440**. This may be done to identify one or more other uplink beams **130** that may become stronger than the current fast decision beam selection **440** as average power calculator **436** continues to sample signal strengths **438** from signal strength module **402**. For example, suppose a relatively weak burst from a first mobile station **15** is identified in a first uplink beam and that beam is selected as fast decision beam selection **440** in the