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Hansen et al.

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(54) **ASYMMETRICAL MIMO WIRELESS COMMUNICATIONS**

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(21) Appl. No.: **10/979,368**

(22) Filed: **Nov. 1, 2004**

(65) **Prior Publication Data**

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Related U.S. Application Data

(60) Provisional application No. 60/575,920, filed on Jun. 1, 2004, provisional application No. 60/556,264, filed on Mar. 25, 2004, provisional application No. 60/545,854, filed on Feb. 19, 2004.

(57) **ABSTRACT**

A method for asymmetrical MIMO wireless communication begins by determining a number of transmission antennas for the asymmetrical MIMO wireless communication. The method continues by determining a number of reception antennas for the asymmetrical MIMO wireless communication. The method continues by, when the number of transmission antennas exceeds the number of reception antennas, using spatial time block coding for the asymmetrical MIMO wireless communication. The method continues by, when the number of transmission antennas does not exceed the number of reception antennas, using spatial multiplexing for the asymmetrical MIMO wireless communication.

(51) **Int. Cl.**
H04W 76/00 (2006.01)

(52) **U.S. Cl.** **370/437; 370/465**

(58) **Field of Classification Search** **370/437, 370/465**

See application file for complete search history.

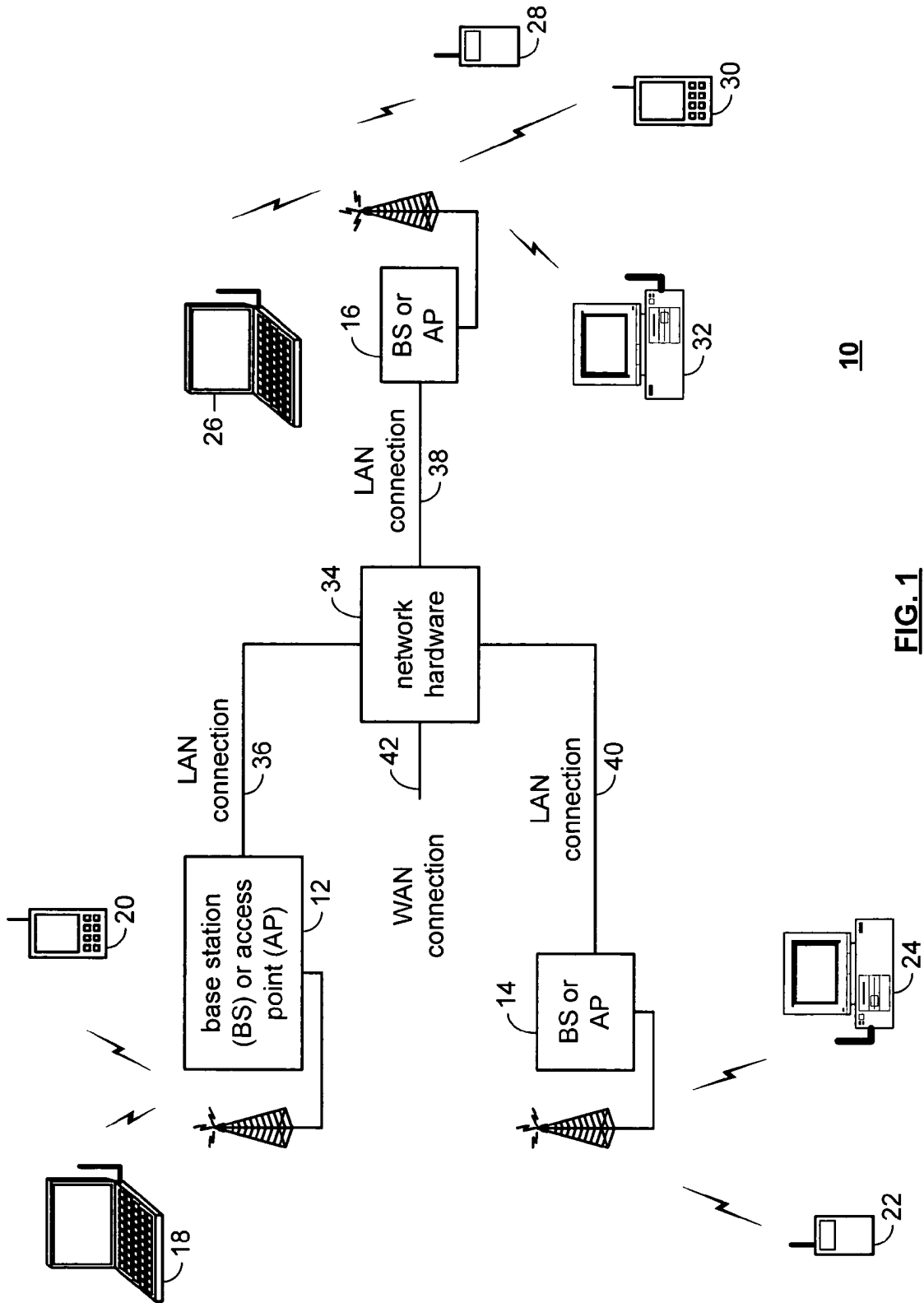
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20 Claims, 19 Drawing Sheets

	Antenna 0	Antenna 1	Antenna 2	Antenna 3
Symbol m	s0	s1	s2	s3
Symbol m+1	-s1*	s0*	-s3*	s2*
Symbol m+2	s4	s5	s6	s7
Symbol m+3	-s4*	-s5*	s6*	s7*



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FIG. 1

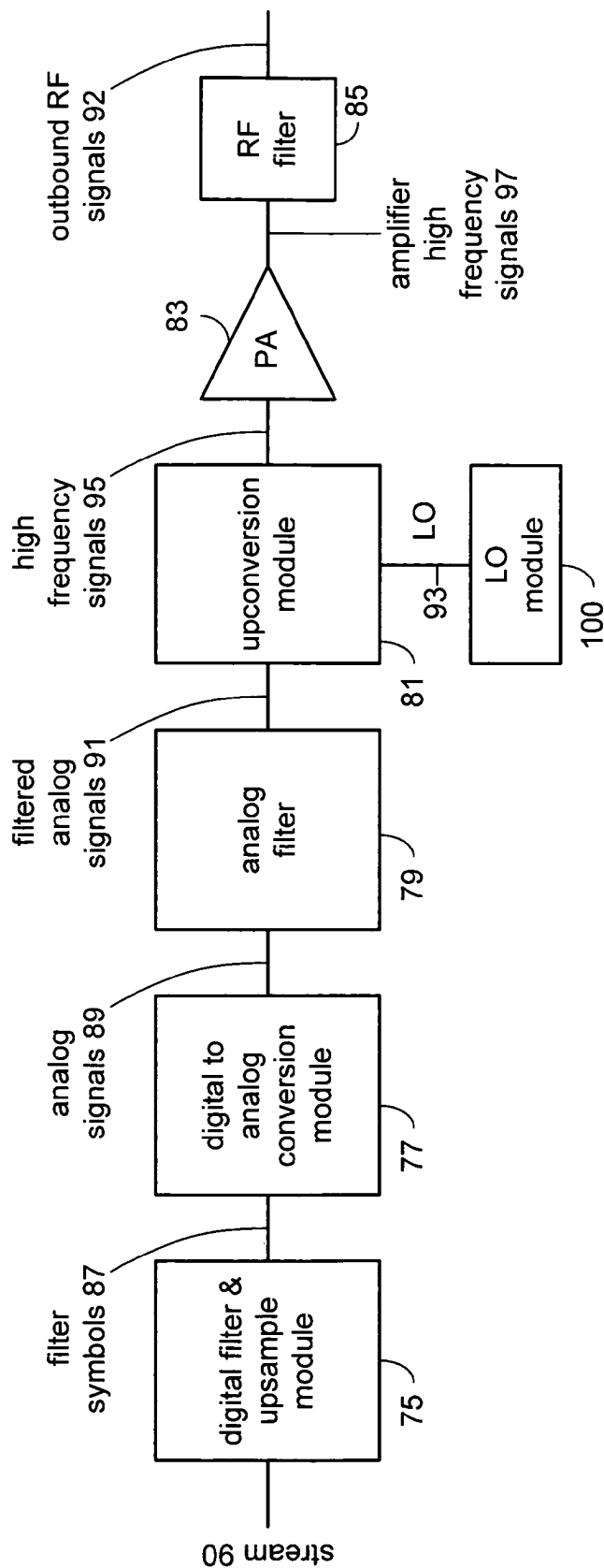


FIG. 3

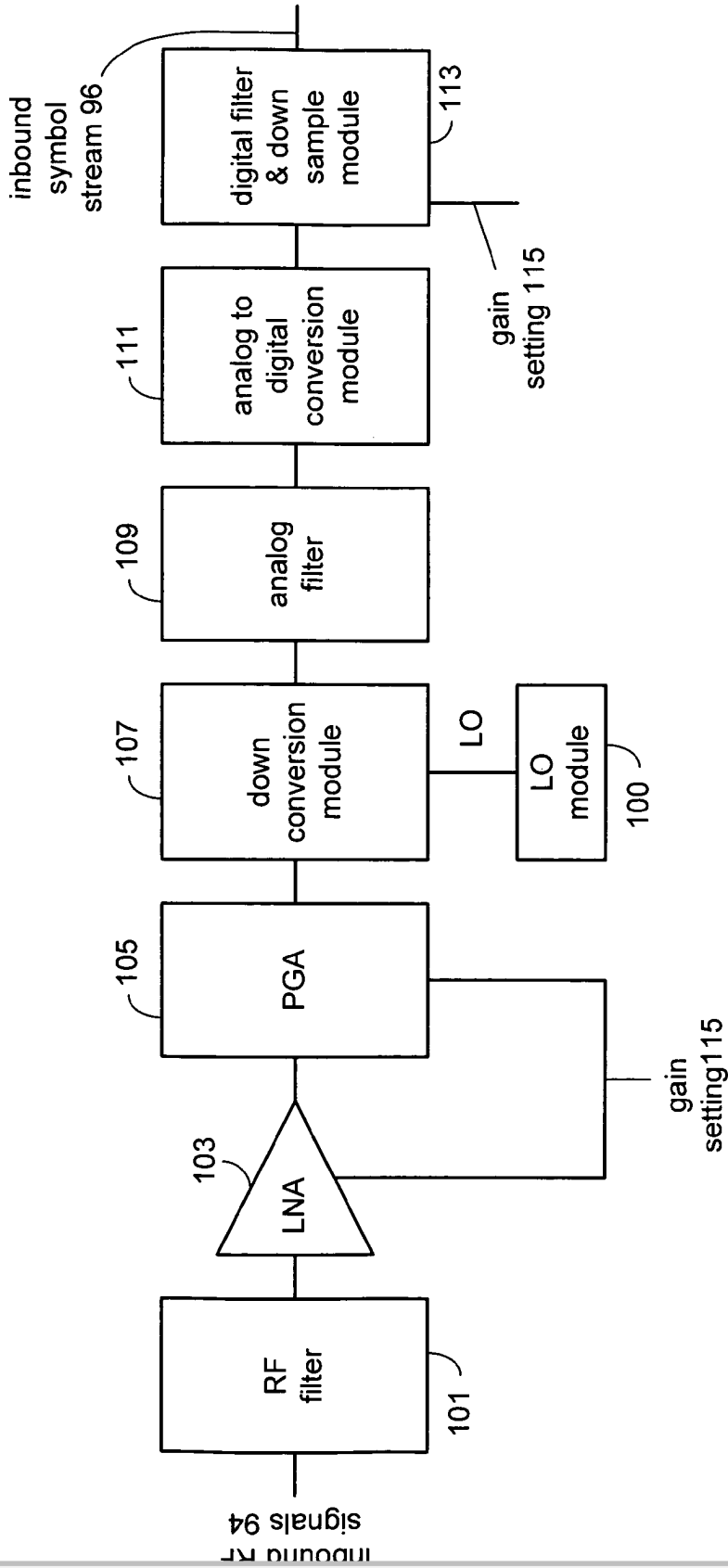


FIG. 4

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