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(54) **MONOLITHIC MICROWAVE INTEGRATED
CIRCUIT FRONT-END MODULE**

(52) **U.S. Cl.**

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(57)

ABSTRACT

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There is provided a monolithic microwave integrated circuit, MMIC, front-end module (100) comprising:

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a gallium nitride structure (110) supported by a silicon substrate (120);

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a silicon-based transmit/receive switch (130) having a transmit mode and a receive mode;

Related U.S. Application Data

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a transmit amplifier (112) configured to amplify an outgoing signal to be transmitted by said MMIC front-end module, wherein said transmit amplifier is electrically connected (132) to said transmit/receive switch, wherein said transmit amplifier comprises a gallium nitride high-electron-mobility transistor, HEMT, (114) formed in said gallium nitride structure; and

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a receive amplifier (113) configured to amplify an incoming signal received by said MMIC front-end module, wherein said receive amplifier is electrically connected (133) to said transmit/receive switch, wherein said receive amplifier comprises a gallium nitride HEMT (115) formed in said gallium nitride structure.

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