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(71) Applicant *(for all designated States except US)*: **TELEKOM MALAYSIA BERHAD** [MY/MY]; Level 51, North Wing, Menara TM, Jalan Pantai Baharu, 50672 Kuala Lumpur (MY).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **YAHYA, Mazlaini** [MY/MY]; 16, Jalan Putra Indah 9/14, Putra Heights, 47650 Subang Jaya, Selangor Darul Ehsan (MY).

(74) Agent: **ONG, Charmayne, Poh Yin**; Skrine, Unit no. 50-8-1, 8th Floor, Wisma UOA Damansara, 50, Jalan Dungun, Damansara Heights, 50490 Kuala Lumpur (MY).

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(54) **Title:** TRANSCEIVER FRONT END FOR SOFTWARE RADIO SYSTEMS

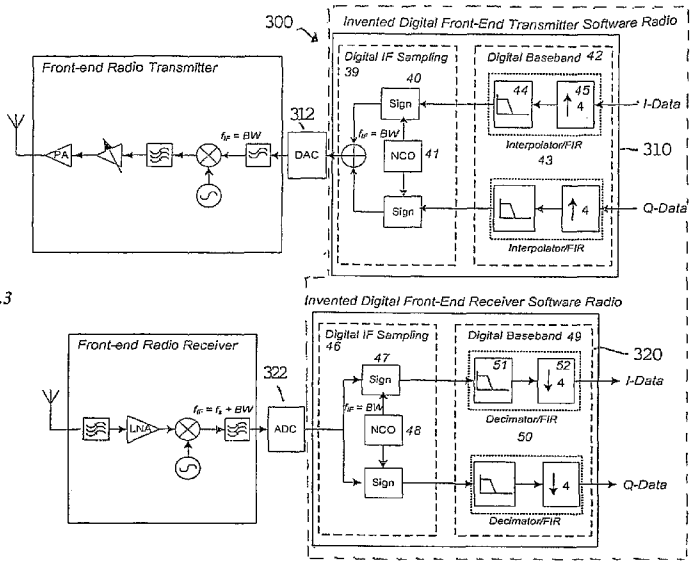

FIG.3

(57) **Abstract:** A digital front end transceiver system (300) for a software radio system comprising: a transmitter module (310) adapted to digitally interpolate, up-convert and combine baseband digital in-phase (I) and quadrature (Q) channels to form a digital intermediate frequency (IF) IQ signal for conversion to an analogue IF IQ signal for transmission; and a receiver module (320) adapted to separate, down- convert and decimate a received digital IF IQ signal into baseband digital I and Q channels. The transmitter and receiver modules use a common fixed sampling and IF conversion rate fs, where fs is a quadruple of the bandwidth of the baseband signal, such that the system can be applied in a software radio system for a wireless communication application having any baseband bandwith by selecting the fixed sampling rate based on the baseband bandwidth.

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