

The JH8SST/7 implementation of the Simpleceiver.

By way of review the N6QW Simpleceiver was a project developed in 2015 and documented at <http://n6qw.blogspot.com>. The basic premise of the project was to use a universal element in various circuit blocks. Two J310 JFETS were configured to form a Dual Gate MOSFET and this was the backbone of that universal element. The J310's were configured as amplifiers, mixers and product detectors. Extensive use of LT Spice was employed in the project to document and prove the circuit block modules. The band of choice was 40 Meters so that with a 12 MHz homebrew crystal filter and a 5 MHz LO it would enable the use of various methods of signal injection. The builder could use a 5 MHz VXO, or LC VFO or even the AD9850 or beyond that to a Si5351.

I am aware of several implementations of this project but one in particular has taken the project to next level by refining the topology and adding a superb AGC circuit. I would like to take some time to explore the project implementation by Jun, JH8SST/7. Initially he built the circuit as it was first presented and then made some circuit changes that improve signal handling capability and of course added a superb AGC circuit.

Details of the changes include rearranging the circuit blocks so that the homebrew crystal filter is moved to follow the mixer stage and the two IF stages (formerly before and after the homebrew filter) are now cascaded. Other changes included changing the J310's in the product detector to a diode ring. Finally was the addition of an IF type AGC circuit. Jun also applied AGC to the RF stage. Currently Jun has two versions of the Simpleceiver –one on 40 Meters and the other on 20 Meters. Both have AGC. Noteworthy is the smooth AGC action and no pumping of the signal.

Jun has documented his project in the schematic below and links are provided to the two you tube videos that “show and tell” his stunning craftsman and the “proof of the pudding”. Thanks Jun for once again sharing the “better mousetrap”.

