

## RESEARCH ROADMAP

Our EM group developed a method to improve the transmission characteristics of the SMA connector-to-microstrip line transitions as shown in Fig.1, and we proposed a printed chip type antenna using monopole spiral slot structures with system ground for DVB-H signal reception in the UHF band as shown in Fig.2, and a dual-band receiver for 2.4/5.2-GHz WLAN as shown in Fig. 3. The dual-band frond-end ICs consist of a low-loss and miniaturized 3-dB rat-race hybrid, and a high-gain and low-power low-noise amplifier (LNA). Passive components such as transmission lines, inductors, and capacitors are implemented on a low-loss glass substrate (Glass Substrate Integrated Passive Device Process). And a high-gain and dual-band LNA is developed on a 0.18- $\mu\text{m}$  CMOS technology. Fig. 4 shows the integration of the receiver on the glass substrate.

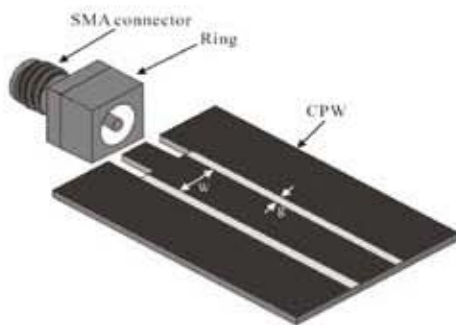


Fig. 1. Improving SMA connector-to-CPW

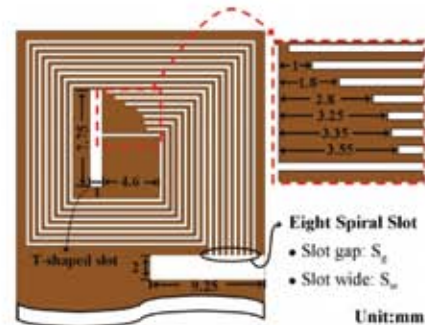


Fig. 2. DTV monopole spiral slot antenna

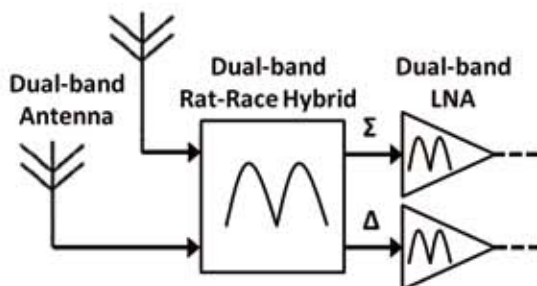


Fig. 3 Block Diagram of the receiver.

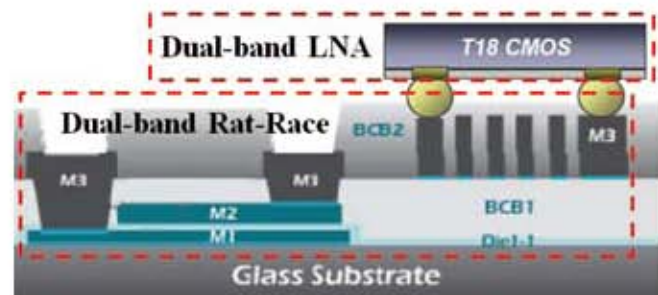


Fig. 4 Implementation of the RF ICs.