

ANALOG FRONT-END

UWB Chipless RFID System

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ANALOG FRONT END UWB CHIPELESS SYSTEM

The invention of the Radio Frequency Identification (RFID) has introduced many advantages in the product tagging, object tracking and supply chain management comparing with the barcode system. Many researchers tried to read the backscattered data from the passive UWB tag with highly sophisticated test instrumentations such as, vector network analyzers (VNA), spectrum analyzers etc. In the UWB RFID readers, that can successfully read the microstrip resonator type tag, the generation of the chirp signal (and also in the tag space) limits the inclusion of more bits to the system. Inclusion of more bits needs more bandwidth which leads to the difficulties to design large bandwidth chirp signal. UWB RFID system is totally dependent on the constant chirp generation from the UWB RFID reader. The reader is also made less complex and easy to design. A new type of linear resonator for the UWB passive tag also designed and developed to fit with the designed reader front-end. The result shows the 8-bit tag's resonator section occupies 19.22 mm²/bit. The new design has reduced the area/bit up to 20%.

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