AMOS   TECHNOLOGIES IEC.

1F,No.19,Li Hsin Road ,Science-Based   Industrial Park , Hsinchu , Taiwan , R.O.C.

Statement of Declaration

FCC ID   : VX3GC277631
Product   : Fixed RFID Reader
Model   : RF1B1AMUS

1. Output power and channel separation of a Hopping device in the operating mode:

In the operating mode, device turn on the RF Carrier, TX data with ASK modulation then RX data which without modulation in the pure RF carrier, then turn off RF carrier with the specification of Dwell time. The output power and the channel spacing is not change in the operating mode.

2. Frequency range of a Hopping device:

Hereby we declare that the frequency range of this device is: 902 – 928 MHz.

3. Example of a hopping sequence in operating mode:

Example of an operating mode with 51 hopping sequences:

11,26,10,37,20,36,2,46,14,28,22,40,5,48,6,31,12,32,7,38,23,0,33,25,49,8,24,34,3,50,17,29,1,43,15,27,9,41,16,35,21,42,4,47,19,39,18,45,13,44,30

4. Equally average use of frequencies in operating mode and behaviour for short transmissions:

The operating frequency is generated by an ADF4360-3 synthesizer IC (Integrated synthesizer and VCO) (Analog Devices) with the input reference from TXO92-20MHz TCXO (SIWARD). The RF carrier is filtered by a LFL21902 low-pass filter (Murata) and discrete comportment pi-type low-pass filter, and divided into two paths, one for transmission and the other for reception by a power splitter, SP-2C+ (Mini-Circuits).

The transmitting path comprises a LFL21902 low-pass filter (Murata), discrete comportment pi-type low-pass filter, EAR-8 pre-amplifier (Mini-Circuits), discrete comportment pi-type low-pass filter, LDC32 hybrid coupler (Murata), and two discrete comportment pi-type low-pass. RF carrier last transmits from MMCX connector to an antenna.

ASK modulation: The transmit row-data is generator by a MCU unit(Atmel, ATmega16 with 16MHz OSC), which caught ADG820 switch (Analog Device) to switch the VCC and GND biasing the EAR-8 amplifier (Mini-Circuits) RF output power.

The receive RF signal from the same antenna, MMCX connector, two discrete comportment pi-type low-pass, and coupled by the LDC32 hybrid coupler. The coupled RF signal to a pi-type low-pass filter, a MA4IQP900M I/Q demodulator (M/A-COM) and director down-converter to DC level (low frequency). Which the MA4IQP900M Lo RF carrier is form the power splitter SP-2C+ another path, a LFL21902 low-pass filter, an EAR-8 pre-amplifier (Mini-Circuits), and two pi-type low-pass filters. To amplify I and Q signal with individual OP-AMP base-band circuit. Lastly, a CPLD (Lattice, LCMXO256C with 20MHz OSC) decoding the signal to MCU.

The behavior of operating mode: MCU control the synthesizer frequency by using FHSS, in each channel where have been specified the Dwell time. In a channel's Dwell time, MCU works sequentially in the following methods: turn on the carrier, transmit data, receive response data, and turn off the carrier. Next, changing to another channel do the same thing until leaves the operating mode.

5. Dwell time in Operating mode

The dwell time (0.3504s within a 20.4 second period) in operating mode is independent from the TX/RX data. The calculation for a 20.4 second period is a follows:

Dwell time = time slot length * hop rate / number of hopping channels *20.4s

6. Channel Separation in operating mode

The nominal channel spacing of the Hopping system is 500 KHz independent of the operating mode. This was checked during the HOPP Qualification tests for three frequencies (902.5, 915, 927.5 MHz). Additionally, an example for the channel separation is declared in the test report.

Signature
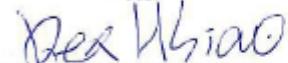
FCC grantee contact person information.
Name/Title: REX.HSIAO
Company Name: AMOS   TECHNOLOGIES IEC.
Address: 5F, NO. 19, Li Hsin ROAD,SCIENCE-BASED INDUSTRIAL PARK,HSINCHU, TAIWAN, R.O.C
TEL: (03)5782688 ext. 5702
FAX: (03)5782620
Email: REX.HSIAO@amostech.com.tw