Operation description

BTA-804

1. **Purpose:** The purpose of this document is to describe key component operations on Bluetooth.
2. **Key components:** BTM-001, GlobalSat Bluetooth Module calss II,
   XC6209B332MR High Speed LDO Regulators,
3. **Operation Principle:** GlobalSat BTM-001 Module class II, it provides a fully compliant Bluetooth system for data and voice communications.
Operation at 2.7 ~ 3.3V supply.
Operation clock is provided by 16MHz oscillator.

Key Features

Radio

-Operation with common TX/RX terminals simplifies external matching circuitry and eliminates external antenna switch

-Extensive built-in self-test minimizes production test time

-No external trimming is required in production

-Full RF reference designs are available

Transmitter

-Up to 0dBm RF transmit power with level control from the on-chip 6-bit DAC over a dynamic range greater than 30dB

-Supports Class 2 and Class 3 radios without the need for an external power amplifier or TX/RX switch

Receiver

-Integrated channel filters

-Digital demodulator for improved sensitivity and co-channel rejection

-Digitized RSSI available in real time over the HCI interface

-Fast AGC for enhanced dynamic range

Synthesizer

-Fully integrated synthesizer, no external VCO varactor diode or resonator

-Compatible with crystals between 8 and 32MHz (in multiples of 250KHz) or an external clock

Auxiliary Features

-Crystal oscillator with built-in digital trimming

-Power management includes digital shut down and wake up commands and an integrated low power oscillator for ultra-low Park/Sniff/Hold mode power consumption

-Devices can be used with an external Master oscillator and provides a clock request signal. To control external clock source.

-Uncommitted 8-bit ADC and 8-bit DAC are available to application programs

Baseband and software

-External 8Mbit flash for complete system solution and application flexibility

-32kbyte on-chip RAM allows full speed Bluetooth data transfer, mixed voice and data, plus full 7 slaves Pico net operation

-Dedicated logic for forward error correction, header error control, access code correlation, demodulation, cyclic redundancy check, encryption bit-stream generation, whitening and transmit pulse shaping

-Transponders for A-law, μ-law and linear voice rom host and A-law, μ-law and CVSD voice over air

Physical Interfaces

-Synchronous serial interface up to 4MBaud
-UART interface with programmable Baud rate up to 1.5MBaud
-Full speed USB interface supports OHCI and UHCI host interfaces. Compliant with USB v1.1
-Synchronous bi-directional serial programmable audio interface
-Operational l-CTM Compatible interface

Bluetooth Stack Running on an Internal Micro-controller

CSR.s Bluetooth Protocol Stack runs on-chip in a variety of configurations:
-Standard HCI (UART or USB)
-Fully embedded to RFCOMM, thus reducing host CPU load

XC6209B332MR, High Speed LDO Regulators

The XC6209 series are highly precise, low noise, positive voltage LDO regulators **Maximum Output Current**: 200mA manufactured using CMOS processes. The series achieves high ripple rejection **Dropout Voltage**: 200mV (IOUT = 100mA) and low dropout and consists of a standard voltage source, an error correction, **Maximum Operation Voltage**: 10V current limiter and a phase compensation circuit plus a driver transistor. **Output Voltage Range**: 0.9V - 6.0V in 50mV increments Output voltage is selectable in 50mV increments within a range of 0.9V ~ 6.0V. **Highly Accurate**: ±2% the series is also compatible with low ESR ceramic capacitors which give added **Low Power Consumption**: TYP 25μA output stability. This stability can be maintained even during load fluctuations due **Standby Current**: less than 0.1μA to the excellent transient response of the series. **High ripple Rejection**: 70dB (10kHz) The Current limiter's feedback circuit also operates as a short protect for the output **Low Output Noise**: 30μVrms current limiter and the output pin. **Operating Temperature Range**: -40℃ ~ +85℃ The CE function enables the output to be turned off, resulting in greatly reduced **Low ESR Capacitor Compatible**: Ceramic capacitor power consumption.