Stealth 600X Gen 2 System Theory of Operation

The Stealth 600X Gen 2 Wireless Gaming Headset is designed to operate in conjunction with Microsoft's Xbox ONE and next generation gaming consoles. The Stealth 600X Gen 2 and the radio module located inside of the Microsoft gaming console comprise a closed-loop wireless audio gaming system that utilize a proprietary communication technology to offer wireless streaming audio capabilities. This system is a Wi-Fi, Dual-band 802.11 a/b/g/n radio that operates in the 2.4 and 5.0 GHz WLAN bands and is implemented under a master/slave configuration. The Stealth 600X Gen 2 receives all of its operating characteristics, such as frequency domain, country code and operating channels from the Microsoft host console radio module.

The Stealth 600X Gen 2 Headset contains a proprietary Microsoft slave-radio transceiver, based on the Qualcomm/Atheros' (QCA) radio chip QCA4002, which transmits and receives data in a closed-loop system with a corresponding master QCA4002 radio device located inside of the host console. The Stealth 600X Gen 2 Headset also includes a Microsoft wireless security chip that is needed for authenticating the wireless device to operate with the host controller radio module. The Stealth 600X Gen 2 radio module utilizes a single, dual-band chip antenna with omni-directional gain of +3.3 dBi and +3.7 dBi in the 2.4 and 5.0 GHz bands, respectively. In addition, the slave radio module is limited to a maximum output power of +5 dBm to ensure compliance on an international basis.

The QCA4002 slave transceiver located in the Stealth 600X Gen 2 headset is used to receive the streaming audio from the gaming console via the QCA4002 master radio over a designated channel in one of the 2.4 or 5.0 GHz bands. The proprietary communication radio-link is primarily uni-directional in that the audio is "sent" from the host gaming console to the headset and the return path from the headset to the host gaming console is only used for acknowledgement packets.

In addition, the Stealth 600X Gen 2 Headset contains other circuitry, including a microprocessor, regulators and memory. It also contains battery recharging circuitry to power and recharge a 3.7 VDC Lithium-Polymer battery that enables the Stealth 600X Gen 2 Headset to operate for up to fifteen (15) hours. The headset can also be charged without interrupting game-play by using the included USB 2.0 Headset Charging Cable and plugging it into a standard gaming console or PC USB port.