

# **XBX300**

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## **Architecture**

XBX300 home monitoring & control system takes a sophisticated optimized 418MHz transceiver technology called "AFMII" protocol, and a Wi-Fi 2.4 GHz RX module to receive video and audio. It implements a proprietary wireless protocol that is similar in timing to the wired one. This allows for operation that appears transparent to standard AV signal.

The hardware architecture is shown in Figure 1.

- 1 The home monitoring & control system is base on many advanced monitoring devices (including Wireless camera, Door sensors, Water sensors, Temperature sensors etc. For example Wireless camera provide a high quality video. And built-in heat-activated motion (PIR) detector, and an audio microphone.
- 2 Input +12V DC power into DC/DC circuit and from computer supply +5VDC created difference kinds of voltage support the Home monitoring & control system working.
- 3 The 2.4 GHz RX module is assigned to receiver the video, audio and PIR signal wirelessly.
- 4 The 418 MHz RF module is comprised of two chip, the transceiver chip CC1000, the baseband chip PIC16LF628 . The baseband chip is firmware the protocol, drive the transceiver chip to receive and transmit valid signal so that achieve all communication with Gateway or other device.
- 5 The MCU(PIC16F877 Micro controller unit deal with kinds of operation according to the Gateway through 418 MHZ RF radio module, including scan the discovery switch to initialize communication, detect the PIR trigger, flash the LED to indicate camera status, control switcher, and so on.
- 6 The Video Processing including MCU(PIC16C54 Micro controller unit deal with video control and indicate LED status ) and LM1881 Video Sync Separator processing.
- 7 Switcher control IC(HEF4052) control 3 wire Camera and 1 wireless Camera switch .
- 8 Digital processing unit Including Audio signal processing IC (MSM7716GS CODEC.) and Video signal processing IC (SAA7113 9-bit video processor) and USB data decoder IC (ZR36504 Full video and audio interface solution for video via USB) .