Circuit Description

1) power supply

Transform DC 5V Power supply into 3.3Vand 1.8V through the U7and U8 to supply power for the machine;
At the same time, Transforming DC 5V power supply in to 3.3 V to supply power for wifi module

2）Minimal System

U1（W90N745）is control chip of whole system ；U2 is SDRAM；U3 is Nor Flash , mainly responsible for the data storage, Y1 is 15 MHZ crystal oscillator to supply clock signal for U1

3）VIDEO

U6 is image sensor , transform optical signal into video signal via U6,
After DSP decoding process, then U1 carried coding, compression, after that output the compressed video signal through TCP / IP protocol. Y3 is 12MHz crystal oscillator to supply clock signal for DSP..

U4 is the audio codec chip, MIC collected audio signal be processed through the U4 coding, then being compressed by U1, and then output through TCP / IP protocol; at the same time U4 can decode and amplified audio signal, through EARPHONE output to achieve two-way Vaudio communications,

4）Ethernet

U10 (IP101) is a network card IC, the data signals be processed through U10, coupling through the network transformer T1, and then through the RJ45 interface ,cable output to achieve video surveillance. Y2 is 25MHz crystal oscillator ,provide clock signal for U10.

5）WIFI

J10 connects to WIFI module. The J10 motherboard communicates with the WIFI module through the USB interface, and then transmitted by wireless. WIFI module uses the RT3070 chip which supports the IEEE 802.11 b / g / n protocol, the maximum transmission speed is up to 150Mbps, the working frequency band for the 2.4GHz, RF output power is 13 ~ 17 dBm, external 3dBWIFI antenna.

The following specific performance parameters for the WIFI module:

Chipset	Realtek 3070
Host Interface	High speed USB2.0/1.1 interface

Wireless Standards	**IEEE 802.11 b/g /n**
Data Rate	802.11n: up to 150Mbps (downlink) and 150Mbps (uplink) 802.11g: 54 / 48 / 36 / 24 / 18/ 12 / 9 / 6 Mbps auto fallback 802.11b: 11 / 5.5 / 2 / 1 Mbps auto fallback
Frequency Band	2.4GHz ISM (Industrial Scientific Medical) Band
Antenna type	External Antenna （3dB）
RF Output Power	13 ~17 dBm (Typical
Modulation	11n: BPSK, QPSK, 16QAM, 64QAM with OFDM 11g: BPSK, QPSK, 16QAM, 64QAM, OFDM 11b: DQPSK, DBPSK, DSSS, CCK
Data Security	64/128-bit WEP Encryption WPA, WPA-PSK, WPA2, WPA2-PSK. TKIP/AES