

CIRCUIT DESCRIPTION OF AC420

A. NURSERY UNIT

1. POWER SUPPLY

DC 7.5V from AC adapter or 6V battery is input and they are input to BU1 regulator to provide main DC supply to the rest of circuit.
(4 pieces of AAA size alkaline batteries can be used to power up the unit instead of using AC adapter.)

2. POWER AND OUT OF RANGE FUNCTION SWITCHES

BSW1 is built to control power on/off of the unit.
BSW2 is built to turn on and off the function of out of range.

3. MICROPHONE SENSITIVITY ADJUST

SVR1 is used for adjusting the threshold level of microphone input in order to initiate the transmission of audio to the parent side. SVR1 set a DC level for CPU detect (pin26) and this level is compared with that of pin 25 (A/D detect pin) which knows the level from microphone.

4. NIGHT LIGHT CONTROL

Night light BLED1 is turned on by pressing once switch BSW3 and pressing the switch again will turn off the light

5. SOUND DETECT AND TRANSMISSION

Microphone BMIC1 collects surrounding sound and the signal is enlarged by BU2-A and BU2-B. BU2-B output is also used for detecting level of input sound if it is large enough to turn on transmission to parent unit.
BU4 CPU turns on audio MUTE switching transistor BQ3 for audio passing into RF module.
RF TX power is turned ON by switching transistors, BQ5 for TXVCC and BQ10 for VPA (power amplifier DC) from BU4 control.

6. PILOT TONE SHAPER

Pilot tone shaper is formed by BR71,19,24,27 and BC37,39,40,41 which filter the signal from CPU and forms the pilot tone into RF module.

7. BATTERY DETECT AND LOW ALERT

While using alkaline battery, battery level is detected by voltage level detected at junction of BR43 and BR55. If battery is detected low, BLED2 will flash to alert user.

8. TX RF MODULE OPERATION

Audio signal is input into the RF module and modulates the RF signal through DVD1. DU2 PLL is controlled by CPU BU4 and drives the TXVCO DQ1 in which transmission frequency is adjusted by tuning DVC1.

Transmission frequency (926-927.6MHz) is amplified at amplifiers DQ2 and DQ3 and then filtered by DC26, DC27 and DDF2, dielectric filter (927MHz).

RF signal (926-927.6MHz) is radiated out at antenna DANT2 which is matched with DL3 and DC28. DANT2 is a rod antenna which is fixed on PCB and without gain.

AC420 FREQUENCY TABLE

PARENT LCD DISPLAY		CHANNEL NUMBER	FREQUENCY (MHz)
TEST MODE	NORMAL		
00	N.A.	1	926.0
01	C1	2	926.2
02	C2	3	926.4
03	C3	4	926.6
04	C4	5	926.8
05	C5	6	927.0
06	C6	7	927.2
07	C7	8	927.4
08	C8	9	927.6

REMARK: CHANNEL ONE ONLY DISPLAYED IN TEST MODE