

## AC423 CIRCUIT DESCRIPTION

### I. AC423 Nursery Unit (Baby side) Main Circuit Description

Category	Number	Name	Location	Description
IC	ACT B-47	MAIN PROCESSOR	BU4	Handle all TX, and handle audio switching.
IC	FT24C02A	EEPROM	BU3	Memory of settings that run by BU4.
IC	LM324D	MIC. AMP	BU2-A, BU2-B	Amplification of audio signal from microphone BMIC3 EX625P28K6221522
IC	AIC1734-38PU	DC REGULATOR	BU1	Regulate a DC3.8V output to main circuit such as MCU and RF parts.
LED	4LYG1D	POWER LED	BLED2	Green indication for power ON of nursery unit.
LED	HXHW5033	NIGHT LIGHT LED	BLED1, 5, 6	ON for night light function.
SWITCH	SKA12D01NG4NA	POWER SW.	BSW1	Slide switch for power ON/OFF
SWITCH	SKA12D01NG4NA	OUT OF RANGE SW.	BSW2	Slide switch for out of range function ON/OFF.
SWITCH	TS-03-AL	NIGHT LIGHT/ CHANNEL SW.	BSW3	Function for paging Night light ON/OFF and channel select.
TRAN-SISTOR	2N3904	SWITCH FOR NIGHT LIGHT	BQ7	On/Off control for Night light
RESONATOR	8MHz	OSCILLATOR	BX1	Oscillator for processor BU4
SOCKET	DC050S0300	DC JACK	SJ2	Connecting to DC 7.5V 500mA adaptor and pass DC source through BD2 , 1N4004 to regulator.
BATTERIES	(NOT INCLUDED)	4 X AAA SIZE BATTERY	BATT1	Backup power source 6V to input of regulator through BD3, CUS04
VARIABLE RESISTOR	100KB	MIC. SENS. ADJUST	SVR1	Provide a device for user to adjust the input level of microphone (Mic. Sens.)to trigger RF transmission ON. (For VOX level adjust)
TRAN-SISTOR	8550C	SWITCH FOR MUTE	BQ3	On/Off control for muting signal of microphone into RF module.
TRAN-SISTOR	2N3906	TX POWER CONTROL	BQ5	On/Off control of TX VCC for RF signal transmission.
TRAN-SISTOR	2N3906	TX AMP. POWER	BQ10	On/Off control of transmitter power Amp. RF signal transmission.
RC FILTER NETWORK	30K,30K,3.3K,10K 0.1, 0.1, 0.1, 1	PILOT TONE SHAPER	BR19,24 BR27,52 BC37,39 BC40,41	Filter made from RC network to shape out a sine wave like signal input into RF module from digital output of MCU BU4.
SENSOR RESISTOR	10K	TEMPERATURE SENSOR	BTH1	Detect temperature change of NU surrounding.
RF MODULE	TO RF MODULE	RF MODULE	NU RF	See details of NU RF module

## II. NU RF module Circuit Description

Category	Number	Name	Location	Description
IC	GP214D	DUAL FREQUENCY SYNTHESIZER	DU2	It operates to control of TX VCO loop. Serial data is sent from MCU via DATA, CLK and STB for channel selections. It generates TX fundamental frequencies, 926 to 927.6MHz .
CRYSTAL	11.15MHz	CRYSTAL OSCILLATOR	DX1	Provide oscillation clock to PLL IC DU2.
VARI-CAP DIODE	1SV305	FM MODULATOR	DVD1	Frequency modulation (FM) is done for RF signal on audio and data signals which are fed from main PCB at MOD IN.
RF TRAN-SISTOR	C5066Y	TRANSMIT OSCILLATOR	DQ1	Provide RF frequencies, range 926 to 927.6MHz for RF transmitter.
LC FILTER	0.015uH, 0.015uH, 3.3P	BPF	DL11, DL12, DC55	Band pass filter for RF transmitter signal to feed into RF transmitter amplifier.
RF TRAN-SISTOR	C5066Y	TX AMP.	DQ3	Amplification of RF transmitter signal into antenna for transmission.
RF FILTER	927M	TX_FILTER 927MHz	DDF2	Filter for TX out RF signal which is fed into antenna for transmission. (range: 926 TO 927.6MHz)
METAL ROD	ROD ANTENNA	TX ANTENNA	DANT2	To transfer conducted power from RF module and radiate it in air for signal transmission to PU. Conducted power is -3dBm +/-2dB. TX antenna gain is 0dB.

Note for use of frequency channel:

1. Channel 1 to 8 is used for normal use of sound transmission, data transmission (out of range and temperature reading) from NU to PU.
2. Channel 0 is a frequency channel that system is in channel select mode. When user select channel, the data is sent from NU to PU in the channel 0.

## AC423 FREQUENCY TABLE

US/AU (FCC/AU APPROVAL)

## 1. NURSERY UNIT

## A. TRANSMISSION FREQUENCY CHANNELS

CHANNEL NUMBER	TX FREQUENCY (MHz)	TX FUNDAMENTAL (MHz)
0	926.0	926.0
1	926.2	926.2
2	926.4	926.4
3	926.6	926.6
4	926.8	926.8
5	927.0	927.0
6	927.2	927.2
7	927.4	927.4
8	927.6	927.6