

Technical Description for 39238

Model 39238 is a 40 channel 900MHz ISM band cordless phone with type I and type II caller ID. The block diagram is shown as Fig.1.

Ringling:

The ring signal from the telephone line is fed to the ring detect circuit. The ring detect circuit (IC2-C and IC2-D) informs the MCU (IC1). Then the MCU sends the ring command through RF path to the handset. When the handset receives the ring command, it will drive the buzzer (Q6 and B1) to alert the coming call.

Talking:

If press the "Talk" key on the handset during ringing or in standby mode, the MCU (IC1) on handset will send the line seize command. The MCU of the base unit will control the reed relay (RL1) to close the telephone line when it receives the line seize command. And the partners can communicate with each other through the audio path and RF path.

Dialling:

Tone Mode:

After link up the telephone line, when the digit is dialed on the handset the MCU on the handset will send the command to the MCU on the base unit to inform it to send the DTMF signal. On the base the MCU output the DTMF signal at PIN 7 after receiving the dialing command. The DTMF signal amplified by IC2-A and IC2-B will send to the line.

Pulse Mode:

When the MCU on the base unit receives the dialing command it will control the reed relay (RL1) to make and break the telephone line.

RF-Path:

RF-Path is made up of the transmitter and the receiver both base unit and handset.

The transmitter is consisted of TX-VCO (Q203), frequency doubler (Q202), and the power amplifier (Q201), and TX-PLL in the combo chip (IC401).

The voice signal from the microphone on the handset or telephone line on the base unit is fed to MIC amplifier (in combo chip IC401) and compressor (in combo chip). And then the signal amplified and compressed inputs to TX-VCO to modulate the carrier. The frequency is locked by TX-PLL. The carrier with voice modulation and stable frequency is transmitted through the antenna after amplified by Q201. The channel of transmitting will be controlled by MCU through the TX-PLL.

The receiver is consisted of RX-VCO (Q302), frequency doubler (Q301), two stages low noise amplifier LNA (Q101, Q102), the mixer (Q103), IF (10.7MHz) emitter

follower (Q104, Q401) and RX-PLL in the combo chip (IC401), IF amplifier in the combo chip (IC401), discriminator (in IC 401).

The RF signal from the transmitter will receive via the antenna and is fed to LNA to amplifier, then converted to 10.7MHz IF signal by the mixer (Q103). The IF signal will be input to IF amplifier via the IF emitter follower (Q104, Q401), and then be amplified by IF amplifier in the combo chip (IC401). Next the IF signal amplified will be demodulated by discriminator in the combo chip, and the audio signal output from the discriminator to audio amplifier. Lastly amplified audio signal will send to the speaker on the handset and to the telephone line on the base unit. The channel of receiving will be controlled by the MCU through the RX-PLL.

Audio Path:

The microphone amplifier and the speaker amplifier are in the combo chip (IC401). The circuits of IC2-A and IC2-B on the base unit consist of the line signal amplifier. And the DTMF generated from MCU on the base unit also be amplified by it and then sent to the telephone line.

Caller ID Receiving (Type I):

The caller ID FSK signal from the telephone line is coupled by C15, C32, R28, R29 and fed to the FSK decoder in the MCU (IC1 on the base unit). After receiving the caller ID message the MCU will send them to the handset to display on the LCD.

Caller ID Receiving (Type II):

In TALK mode, if the CAS tone detector in the MCU has detected a CAS tone on the telephone line, it sends the ACK to the line and then receives the caller ID message from the line via C15, C32, R28, R29. After receiving the message the MCU will send them to the handset to display on LCD.

Section
Model = 39238

Testing Mode Descriptions of 39238

1. 40 Channels Freq Table in Test Mode

Channel	Base (MHz)		Handset (MHz)	
	Tx	Local Osc.	Tx	Local Osc.
20	903.60	937.40	926.70	892.90
39	904.55	938.35	927.65	893.85
0	902.60	936.40	925.70	891.90
1	902.65	936.45	925.75	891.95
2	902.70	936.50	925.80	892.00
3	902.75	936.55	925.85	892.05
4	902.80	936.60	925.90	892.10
5	902.85	936.65	925.95	892.15
6	902.90	936.70	926.00	892.20
7	902.95	936.75	926.05	892.25
8	903.00	936.80	926.10	892.30
9	903.05	936.85	926.15	892.35
10	903.10	936.90	926.20	892.40
11	903.15	936.95	926.25	892.45
12	903.20	937.00	926.30	892.50
13	903.25	937.05	926.35	892.55
14	903.30	937.10	926.40	892.60
15	903.35	937.15	926.45	892.65
16	903.40	937.20	926.50	892.70
17	903.45	937.25	926.55	892.75
18	903.50	937.30	926.60	892.80
19	903.55	937.35	926.65	892.85
20	903.60	937.40	926.70	892.90
21	903.65	937.45	926.75	892.95
22	903.70	937.50	926.80	893.00
23	903.75	937.55	926.85	893.05
24	903.80	937.60	926.90	893.10
25	903.85	937.65	926.95	893.15
26	903.90	937.70	927.00	893.20
27	903.95	937.75	927.05	893.25
28	904.00	937.80	927.10	893.30
29	904.05	937.85	927.15	893.35
30	904.10	937.90	927.20	893.40
31	904.15	937.95	927.25	893.45
32	904.20	938.00	927.30	893.50
33	904.25	938.05	927.35	893.55
34	904.30	938.10	927.40	893.60
35	904.35	938.15	927.45	893.65
36	904.40	938.20	927.50	893.70
37	904.45	938.25	927.55	893.75
38	904.50	938.30	927.60	893.80
39	904.55	938.35	927.65	893.85
0	902.60	936.40	925.70	891.90
1	902.65	936.45	925.75	891.95
.				
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38	904.50	938.30	927.60	893.80
39	904.55	938.35	927.65	893.85
0	902.60	936.40	925.70	891.90

Technical Description for 39233

Model 39233 is a 40 channels 900MHz ISM band cordless phone. The block diagram is shown as Fig.1.

Ringing:

The ring signal from the telephone line is fed to the ring detect circuit. The ring detect circuit (IC2-C and IC2-D) informs the MCU (IC1). Then the MCU sends the ring command through RF path to the handset. When the handset receives the ring command, it will drive the buzzer (Q504 and B501) to alert the coming call.

Talking:

If press the "Talk" key on the handset during ringing or in standby mode, the MCU (IC1) on handset will send the line seize command. The MCU of the base unit will control the reed relay (RL1) to close the telephone line when it receives the line seize command. And the partners can communicate with each other through the audio path and RF path.

Dialling:

Tone Mode:

After link up the telephone line, when the digit is dialed on the handset the MCU on the handset will send the command to the MCU on the base unit to inform it to send the DTMF signal. On the base the MCU output the DTMF signal at PIN 7 after receiving the dialing command. The DTMF signal amplified by IC2-A and IC2-B will send to the line.

Pulse Mode:

When the MCU on the base unit receives the dialing command it will control the reed relay (RL1) to make and break the telephone line.

RF-Path:

RF-Path is made up of the transmitter and the receiver both base unit and handset.

The transmitter is consisted of TX-VCO (Q203), frequency doubler (Q202), and the power amplifier (Q201), and TX-PLL in the combo chip (IC401).

The voice signal from the microphone on the handset or telephone line on the base unit is fed to MIC amplifier (in combo chip IC401) and compressor (in combo chip). And then the signal amplified and compressed inputs to TX-VCO to modulate the carrier. The frequency is locked by TX-PLL. The carrier with voice modulation and stable frequency is transmitted through the antenna after amplified by Q201. The channel of transmitting will be controlled by MCU through the TX-PLL.

The receiver is consisted of RX-VCO (Q302), frequency doubler (Q301), two stages low noise amplifier LNA (Q101, Q102), the mixer (Q103), IF (10.7MHz) emitter

follower (Q104, Q401) and RX-PLL in the combo chip (IC401), IF amplifier in the combo chip (IC401), discriminator (in IC 401).

The RF signal from the transmitter will receive via the antenna and is fed to LNA to amplifier, then converted to 10.7MHz IF signal by the mixer (Q103). The IF signal will be input to IF amplifier via the IF emitter follower (Q104, Q401), and then be amplified by IF amplifier in the combo chip (IC401). Next the IF signal amplified will be demodulated by discriminator in the combo chip, and the audio signal output from the discriminator to audio amplifier. Lastly amplified audio signal will send to the speaker on the handset and to the telephone line on the base unit. The channel of receiving will be controlled by the MCU through the RX-PLL.

Audio Path:

The microphone amplifier and the speaker amplifier are in the combo chip (IC401). The circuits of IC2-A and IC2-B on the base unit consist of the line signal amplifier. And the DTMF generated from MCU on the base unit also be amplified by it and then sent to the telephone line.

Testing Mode Descriptions

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Model = 3P233

40 Channels Sequencing Table in Test Mode

Channel	Base (MHz)		Handset (MHz)	
	Tx	Local Osc.	Tx	Local Osc.
01	902.60	936.40	925.70	891.90
10	903.05	936.85	926.15	892.35
20	903.55	937.35	926.65	892.85
30	904.05	937.85	927.15	893.35
40	904.55	938.35	927.65	893.85
01	902.60	936.40	925.70	891.90
02	902.65	936.45	925.75	891.95
03	902.70	936.50	925.80	892.00
04	902.75	936.55	925.85	892.05
05	902.80	936.60	925.90	892.10
06	902.85	936.65	925.95	892.15
07	902.90	936.70	926.00	892.20
08	902.95	936.75	926.05	892.25
09	903.00	936.80	926.10	892.30
10	903.05	936.85	926.15	892.35
11	903.10	936.90	926.20	892.40
12	903.15	936.95	926.25	892.45
13	903.20	937.00	926.30	892.50
14	903.25	937.05	926.35	892.55
15	903.30	937.10	926.40	892.60
16	903.35	937.15	926.45	892.65
17	903.40	937.20	926.50	892.70
18	903.45	937.25	926.55	892.75
19	903.50	937.30	926.60	892.80
20	903.55	937.35	926.65	892.85
21	903.60	937.40	926.70	892.90
22	903.65	937.45	926.75	892.95
23	903.70	937.50	926.80	893.00
24	903.75	937.55	926.85	893.05
25	903.80	937.60	926.90	893.10
26	903.85	937.65	926.95	893.15
27	903.90	937.70	927.00	893.20
28	903.95	937.75	927.05	893.25
29	904.00	937.80	927.10	893.30
30	904.05	937.85	927.15	893.35
31	904.10	937.90	927.20	893.40
32	904.15	937.95	927.25	893.45
33	904.20	938.00	927.30	893.50
34	904.25	938.05	927.35	893.55
35	904.30	938.10	927.40	893.60
36	904.35	938.15	927.45	893.65
37	904.40	938.20	927.50	893.70
38	904.45	938.25	927.55	893.75
39	904.50	938.30	927.60	893.80
40	904.55	938.35	927.65	893.85
01	902.60	936.40	925.70	891.90
...				
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40	904.55	938.35	927.65	893.85