

## MODEL NUMBER ALLOCATION

Presently, we have a large number of models within each of our various model number series of cordless telephones.

Our clients continually request slightly different cosmetic variations of each registered model such as a different case color .

In order to control all of these permutations, it is constantly necessary to assign and file, with the FCC, new model numbers to cover these cosmetic variations.

**Since all models, within a series of cordless telephones, are electrically and functionally identical, varying only in cosmetic detail** and to avoid the need to constantly file, with the FCC, to register additional model numbers for cosmetic purposes, we request to register our models as listed tradenames and model numbers:

TRADENAMES	MODEL NUMBERS
BELLSOUTH	MH9116(0)(Y)      MH9915(0)(Y)
AMERITECH	MH9910(0)(Y)      MH9916(0)(Y)
BELL ATLANTIC	MH9911(0)(Y)      MH9917(0)(Y)
PACIFIC BELL	MH9912(0)(Y)      MH9918(0)(Y)
UNISONIC	MH9913(0)(Y)      MH9919(0)(Y)
	MH9914(0)(Y)

**MH991X (X=0-9) series and MH9116 are 900Mhz Cordless Telephone with Caller ID**

NOTE:      (0) Zero      =      Additional charger base  
suffix "Y" can be added to the model number to represent color variation, can be any letter/s of the alphabet as follows (but not limited to this list) such as :

"No suffix"	=	Gray case
B/BK	=	Black case
HG/VHG	=	Green case
W	=	White case
R	=	Red case
RB	=	Red/Black case
PL	=	Pearl white case

such that :

MH9910	-	Model MH9910 is the standard model in gray case
MH9910B	-	Model MH9910 in black case
MH9910HG	-	Model MH9910 in green case

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## **CIRCUIT DESCRIPTION OF 900MHz(v4) CID.(9910V4)**

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### **1.BASE UNIT :**

The demodulated signal, resulting from Double Super Heterodyne system, which appears at output Pin no.5 of CN5 is sent to IC4 Pin no.15 expansion. The expanded audio signal output from Pin no.19. is coupled to Q103,105 (Buffer amp) during the TELE mode. The audio sent to the Telephone Line via Hybrid Transformer HY1.

The demodulated data code from CN1 Pin no.5 is generated by IC1A,B. its output is connected to CODE INPUT Pin no.42. of IC2.

The Audio signal receiving from TELE LINE is input to IC4 Pin no.8 for compression. The compressed audio signal from Pin no.1 of IC4 is connected to CN5 Pin no.11 for modulation.

Cas signal from tel-line fed to IC101 Pin no.17 via IC102A(CAS AMP) for decoding and converting, If the comparing the code is correct, IC101 send CAS detection code to CPU(IC2).

After that, ack code from CPU transmit to CO(central office) through tel-line and,CO. send FSK

signal to base tel-line for final confirmation of Caller ID. FSK is AMP&filtered by IC102B and fed

to IC101, next routines for FSK are same as CAS routine. After detection FSK,CPU generates information command (including name,adress,telephone number,time,date) and transmit the data to Handset through RF section.

Stand-by mode : FSK signal detected by IC101 after ringing and next routines and operations are same as FSK detection at TALK-mode.

Ext-in use : in case branch phone is used IC102C,D detect using the branch phone and send the logic-hi signal to CPU.

At the moment,Base led start blinking and Handset LCD displays "EXT-INUSE"

Relay controlling is done by Pin no.14 of IC2.

Ringing signal monitored by PC1(PHOTO COUPLER IC) is detected by Pin no.39 of IC2 resulting a data code to the Handset.

DTMF dialing is generated by IC101 Pin no.23 this signal output through Q104 to Tel-line.

When the handset is placed on the base cradle, the charging is detected by Pin no.22 of IC2

and then send data code to handset for security code setting.

When handset is far away from base unit,squelch circuit of IC1C operates and Pin no.8 of IC1C goes to "HI". This will be detected by CPU and after 20 sec.go to stand by mode.

The power of the base unit is supplied by IC5.6 (5V regulator IC)

## 1). RX PART

THE RECEIVER FRONT-END CONTAINS A BAND PASS FILTER, AN RF LOW NOISE AMPLIFIER, A BAND PASS FILTER, A ACTIVE TRANSISTOR MIXER, A MONOLITHIC CRYSTAL FILTER AND 10.7MHz IF AMPLIFIER.

ALSO IT INCLUDES

BUFFER AMPLIFIERS FOR THE GENERATION OF LOCAL OSCILATOR POWER.

THIS FRONT-END RECEIVER RECEIVES AN RF SIGNAL FROM THE ANTENNA. AND RF SIGNALS WITHIN THIS FREQUENCY RANGE IS 926.125MHz-927.100MHz PASS THROUGH RF AMP (Q303,Q306) AND BAND PASS FILTER.

AFTER PASSING THROUGH THE BAND PASS FILTER, THE SIGNAL IS MIXED WITHIN 10.7MHz LOCAL FREQUENCY FROM VOLTAGE CONTROLLED OSCILLATOR.

THE SIGNAL IS AMPLIFIED ON THE IF AMP TRANSISTOR (Q305) AND THE SIGNAL PASS THROUGH THE MONOLITHIC CRYSTAL FILTER (10.7MHz). AFTER THE IF SIGNAL PASS THE MCF FILTER, THE SIGNAL ENTER BY THE FM IF (INTERMEDIATE FREQUENCY) IC.

AND THE SIGNAL IS MIXED IN THE FM IF IC (DBL5018).

THE SIGNAL PASS THROUGH THE CERAMIC FILTER (450KHz).

THE OUTPUT SIGNAL IN THE FM IF IC STREAMS FROM THE AF-OUT TERMINAL OF THE CONNECTOR TO THE BASE.

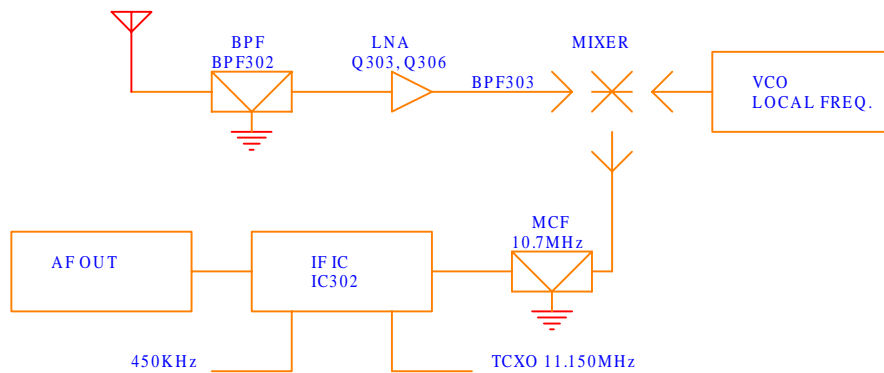


FIG. 1

## 2). TX PART

THE SIGNAL IS MADE TO THE PORTABLE, ENTER BY THE AF-IN  
TERMINAL OF THE CONNECTOR.  
THE SIGNAL SEND THE MOD TERMINAL OF THE TX VCO.  
THE SIGNAL IS MIXED IN THE TX VCO  
MIXING THE RF SIGNAL, THE RF SIGNAL ADJUST THE  
TRIMMER CAPACITOR (VC301).  
THE RF SIGNAL ENTER BY THE TRANSMISSION POWER  
AMP TRANSISTOR (Q301,Q302)  
THE SIGNAL IS AMPLITUDE IN THE TR Q301,302.  
ENTER BY THE BAND PASS FILTER.  
THE RF SIGNAL PASS THROUGH THE BAND PASS FILTER, TOWARDS THE ANT.  
THE LAST TRANSMISSION RF SIGNAL IS 902.125MHz□□903.100MHz

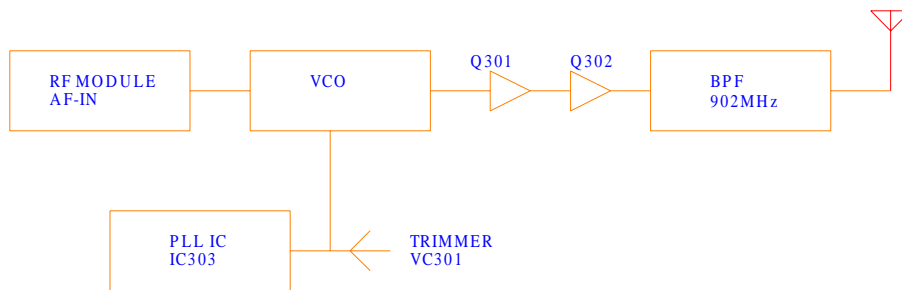


FIG. 2

## 2. HANDSET MAIN :

The demodulated signal, resulting from Double super heterodyne system, which appears at output pin no.5 of CN1 is connected to pin no.15 expander input. The audio output from Pin no .19 is finally amplified by IC8 a.c coupled to the receiver unit the HAC compatibility

The demodulated data code from CN1 pin no.5 is fed to IC7B,C. Pin no.8 of IC7C is connected to (data in) pin no.26 of IC1.

Voice signal from C-MIC is coupled to Pin no.8 of IC4A. The voice signal is compressed by IC4A & output Pin no.3 is connected to Pin no.11 of CN1 for modulation.

LCD display operation is monitored by Pin no.1-6,34-49,66-100 of IC1.

During the charging, it is detected by Pin no.23 of IC1.

Key board operation is monitored by Pin no.50-57 of IC1.

Key tone and the ringing from Pin no.61,62 of IC1 drives the BUZZER.

## 1). RX PART

THE RECEIVER FRONT-END CONTAINS A BAND PASS FILTER, AND RF LOW NOISE AMPLIFIER, A ACTIVE TRANSISTOR MIXER, A MONOLITHIC CRYSTAL FILTER AND 10.7MHz IF AMPLIFIER. ALSO IT INCLUDES BUFFER AMPLIFIERS OR THE GENERATION OF LOCAL OSCILATOR POWER.

THIS FRONT-END RECEIVES AN RF SIGNAL FROM THE ANTENNA. AND RF SIGNALS WITHIN THIS FREQUENCY RANGE IS 902.125MHz-903.100MHz PASS THROUGH RF AMP (Q306,Q303) AND BAND PASS FILTER.

AFTER PASSING THROUGH THE BAND PASS FILTER, THE SIGNAL IS MIXED WITHIN 1ST LOCAL FREQUENCY FROM VOLTAGE CONTROLLED OSCILLATOR. THE SIGNAL IS AMPLIFIED ON THE IF AMP TRANSISTOR (Q305) AND THE SIGNAL PASS THROUGH THE MONOLITHIC CRYSTAL FITER (10.7MHz) AFTER THE IF SIGNAL PASS THE MCF FILTER, THE SIGNAL ENTER BY THE FM IF (INTERMEDIATE FREQUENCY) IC. AND THE SIGNAL IS MIXED IN THE FMIF IC (DBL5018). THE SIGNAL PASS THROUGH THE CERAMIC FILTER (450KHz). THE OUTPUT SIGNAL IN THE FMIF IC STREAMS FROM THE AF-OUT TERMINAL OF THE CONNECTOR 1 TO THE PORTABLE MAIN.

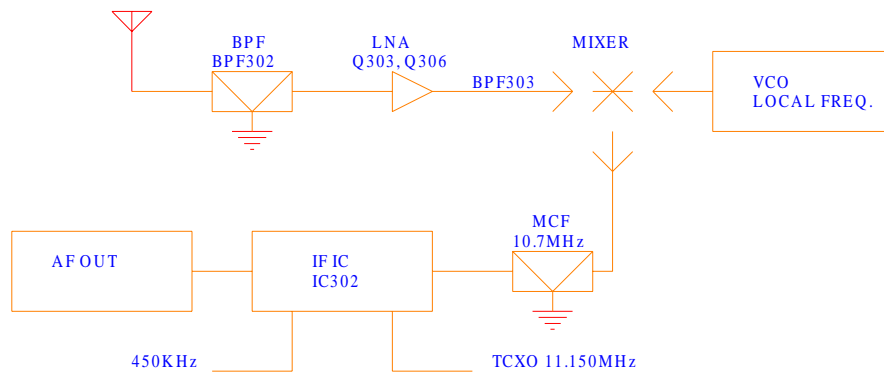


FIG.3

## 2). TX PART

THE SIGNAL IS MADE TO THE PORTABLE, ENTER BY THE AF-IN TERMINAL.

THE SIGNAL SEND THE MOD TERMINAL OF THE TX VCO.

THE SIGNAL IS MIXED IN THE TX VCO

MIXING THE RF SIGNAL, THE RF SIGNAL ADJUST THE TRIMMER CAPACITOR (VC301).

THE RF SIGNAL ENTER BY THE TRANSMISSION POWER AMP TRANSISTOR (Q301,Q302)

THE SIGNAL IS AMPLITUDE IN THE Q301,Q302.

ENTER BY THE BAND PASS FILTER.

THE RF SIGNAL PASS THROUGH THE BAND PASS FILTER, TOWARDS THE ANT.

THE LAST TRANSMISSION RF SIGNAL IS 926.125MHz□□927.100MHz.

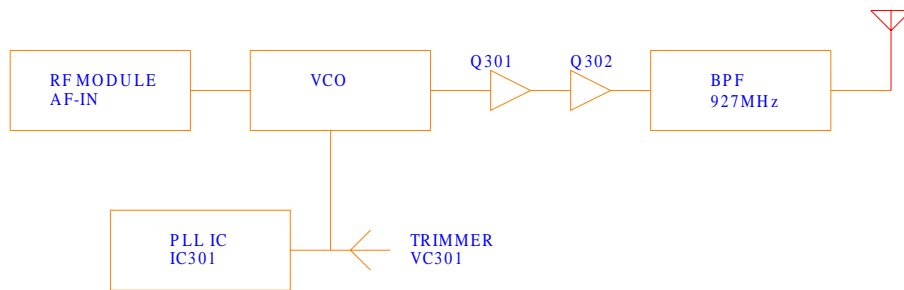


FIG. 4

# FREQUENCE OF 1602 P.L.L

- \* CHANNEL SPACE : 25KHz
- \* 1st I.F. : 10.7 MHz
- \* 2nd I.F. : 450KHz
- \* TCXO(X-TAL) : 11.15MHz

CH	BASE(MHz)		PORTABLE(MHz)	
	TX	LOCAL(10.7)	TX	LOCAL(10.7)
1	902.125	936.825	926.125	891.425
2	902.150	936.850	926.150	891.450
3	902.175	936.875	926.175	891.475
4	902.200	936.900	926.200	891.500
5	902.225	936.925	926.225	891.525
6	902.250	936.950	926.250	891.550
7	902.275	936.975	926.275	891.575
8	902.300	937.000	926.300	891.600
9	902.325	937.025	926.325	891.625
10	902.350	937.050	926.350	891.650
11	902.375	937.075	926.375	891.675
12	902.400	937.100	926.400	891.700
13	902.425	937.125	926.425	891.725
14	902.450	937.150	926.450	891.750
15	902.475	937.175	926.475	891.775
16	902.500	937.200	926.500	891.800
17	902.525	937.225	926.525	891.825
18	902.550	937.250	926.550	891.850
19	902.575	937.275	926.575	891.875
20	902.600	937.300	926.600	891.900
21	902.625	937.325	926.625	891.925
22	902.650	937.350	926.650	891.950
23	902.675	937.375	926.675	891.975
24	902.700	937.400	926.700	892.000
25	902.725	937.425	926.725	892.025
26	902.750	937.450	926.750	892.050
27	902.775	937.475	926.775	892.075
28	902.800	937.500	926.800	892.100
29	902.825	937.525	926.825	892.125
30	902.850	937.550	926.850	892.150
31	902.875	937.575	926.875	892.175
32	902.900	937.600	926.900	892.200
33	902.925	937.625	926.925	892.225
34	902.950	937.650	926.950	892.250
35	902.975	937.675	926.975	892.275
36	903.000	937.700	927.000	892.300
37	903.025	937.725	927.025	892.325
38	903.050	937.750	927.050	892.350
39	903.075	937.775	927.075	892.375
40	903.100	937.800	927.100	892.400