

Service Manual

Telephone Equipment



MODEL: BKT-39P/TD RU

Basic Phone

MAIN FEATURES

1. Advanced electronic circuit design
2. Durable engineering material
3. Clear voice quality system
4. Crystal ringing with volume adjustable
5. Pulse/Tone selectable.
6. Handsfree with bi-directional speakerphone and speaker volume control
7. Pause/Flash/Redial/Mute/R Button
8. Two indicators
9. Several optional color
10. International high-quality certification guarantee (ISO9001)

IBBK

Contents

Main Features -----	1
Installation -----	1
Setting the Tone/Pulse Switch -----	2
Setting the Ringer LO-HI Switch -----	2
Answering a Call -----	2
Making a Call -----	2
Redial Button -----	2
P*T Button -----	3
PAUSE Button -----	3
FLASH Button -----	3
Notepaper Case -----	3
Location of Controls -----	4
Block Diagram -----	5
Explosion Diagram -----	6
IC Data -----	7-10
Elements Diagram -----	11
PCB Diagram -----	12
Replacement Parts List -----	13-14
Troubleshooting -----	15

MAIN FEATURES

1. Advanced electronic circuit design
2. Durable engineering material
3. Clear voice quality system
4. Crystal ringing with volume adjustable
5. Pulse/Tone selectable.
6. Handsfree with bi-directional speakerphone and speaker volume control
7. Pause/Flash/Redial/Mute/R Button
8. Two indicators
9. Several optional color
10. International high-quality certification guarantee (ISO9001)

Installation

- a. The telephone set shall be installed in a safe place where is shady and cool, dry, ventilate and erosive-gas-free.
- b. Connect one end of the coiled line to the jack of the handset, connect the other end of the coiled line to the left jack of the telephone base set. And then plug one end of the telephone cable to the telephone line jack and plug the other end to the wall jack or connection box provided by Telecom Company.

Set the Pulse/Tone Switch

If the local telecom company provides the Touch-tone dialing system, please set the switch to the Tone position;

If the local telecom company provides the Pulse dialing system, please set the switch to the Pulse position.

Set the Ringer Volume

Please Set the High/Low switch to the High position for normal ringer volume and to LO for lowering the ringer volume.

Answering Calls

1. When the telephone rings, lift the handset or press the SPEAKER button;
2. The HANDSET INDICATOR or SPEAKER INDICATOR will light up during talking.
3. After talking, place the handset back on the cradle or press the SPEAKER button again.

Making Calls

1. Lift the handset or press the SPEAKER button, the handset indicator or SPEAKER INDICATOR light up.
2. Dial the telephone number after hearing a dial tone.
3. Hang up the handset or press the SPEAKER button again upon completing the conversation.

If the volume is too high or too low, sliding the volume control to adjust speakerphone.

Note: 1) Switch from handset to SPEAKER: press the SPEAKER button then place the handset back on the cradle.

2) Switch from SPEAKER to handset: pick up the handset.

FLASH Button

Normally, the FLASH button can be used as the telephone hook to make a signal break when you hold the handset.

REDIAL Button

1. If the dialed number is busy or you want to dial the last call again, press the hook or the FLASH button and release it for a new dial tone.
2. Press the REDIAL button and release it.
3. The last call will be redialed out automatically.

PAUSE Button

Press PAUSE button lets you insert a pause in the automatic dialing sequence where pause required. This feature is particularly useful if the telephone set is installed as a part of a PABX system, where you must dial an access code (such as 0) to make an outgoing call.

TONE Button

If the Pulse / Tone switch on the telephone is set to Pulse position but you want to make a tone dialing, lift the handset and press the TONE button once, then the dialing mode will switch to Tone Dialing automatically.

The telephone will turn back to Pulse Dialing mode after you hanging up the handset.

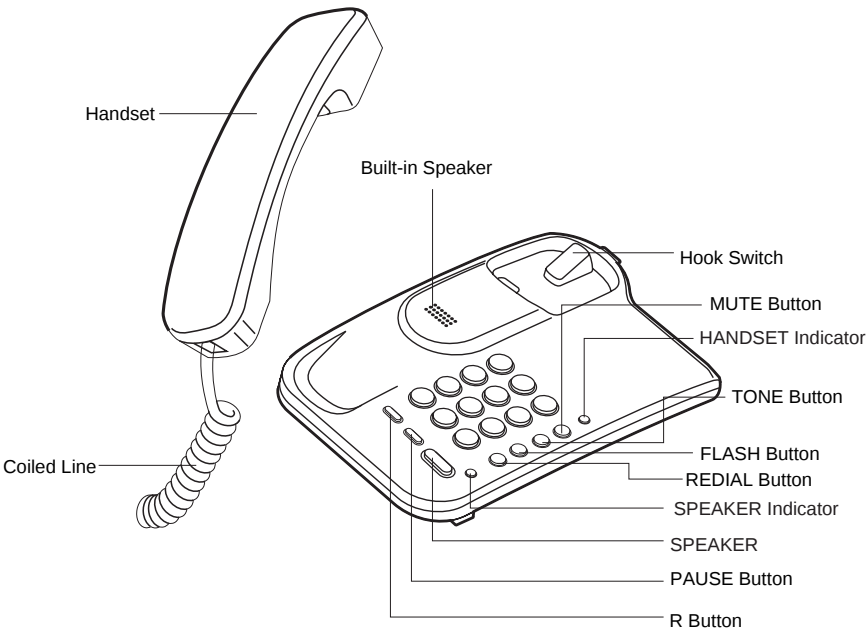
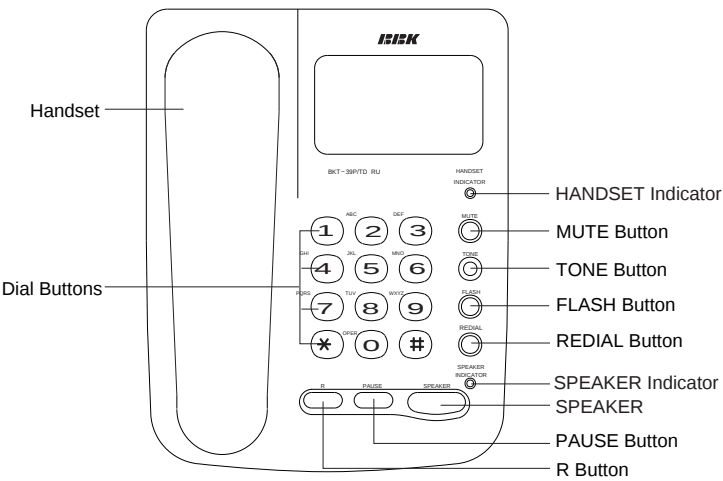
MUTE Button

Pressing and holding the MUTE button prevent the other party on the telephone line to hear your voice (In the condition that you are going to speak to the third party around you but not willing to let the other party of the telephone line hear your conversation). After release it, the conversation turn back normal.

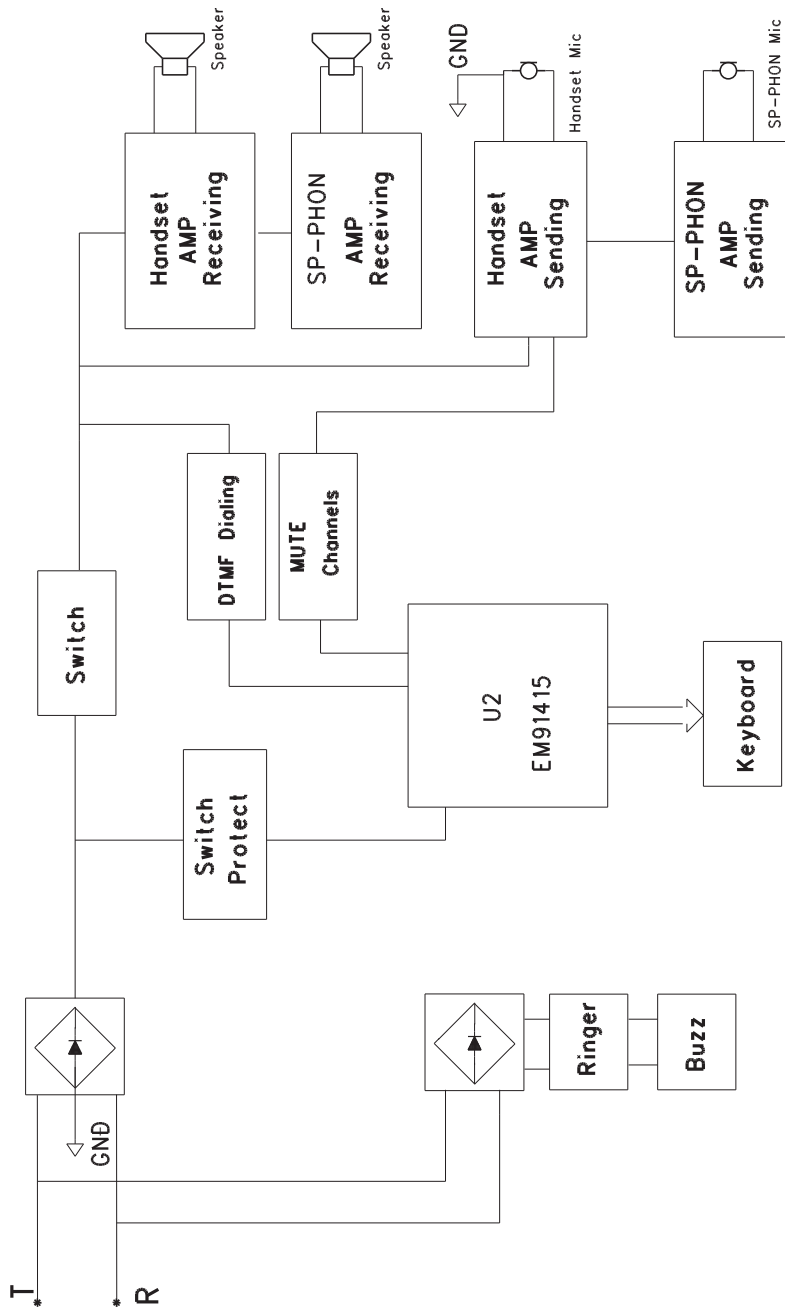
R Button

Press R button allows you use special features of your PBX such as transferring an extension call. (This function is valid only when you have applied for this function by your local telecom company.

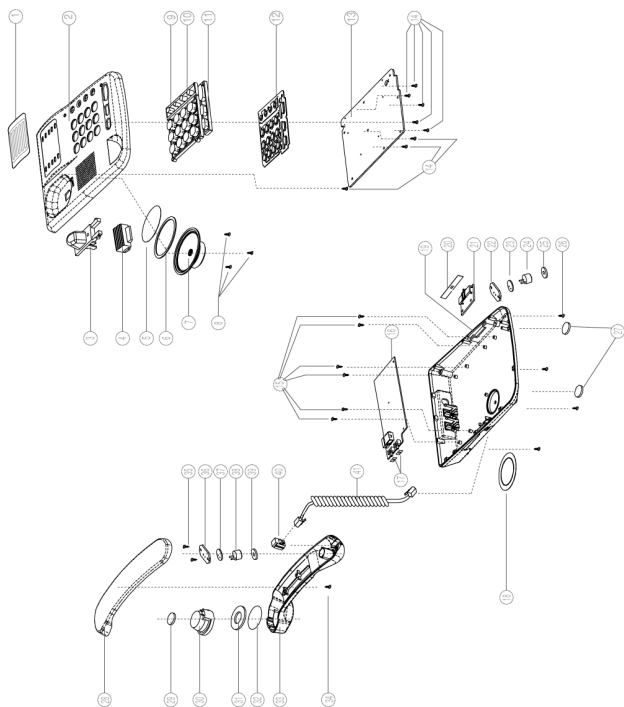
Location of Controls



Block Diagram



Explosion Diagram

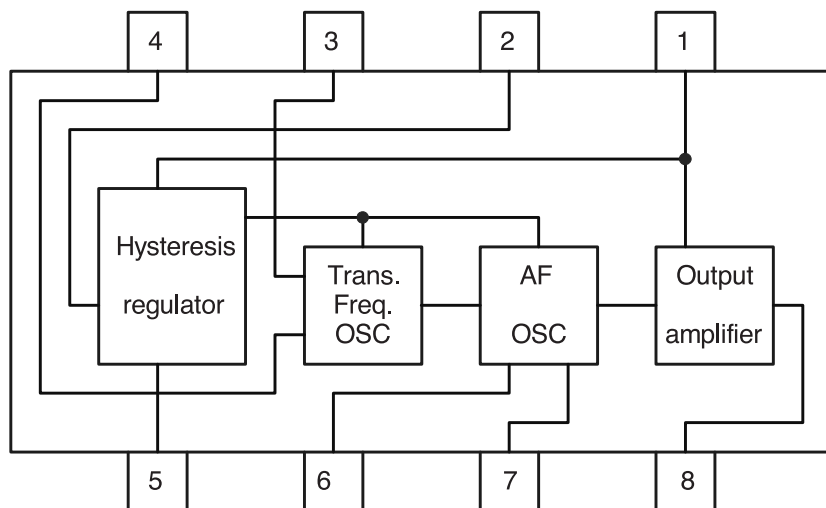


NO.	DESCRIPTION	QTY.
1	DECORATION	1
2	TOP BASE	1
3	HOOK SW CAP	1
4	HANDELT HOOK	1
5	DUSTPROOF	1
6	SPONGE D=57 d=50 l=1	1
7	SPEAKER	1
8	SCREW PWB 3x5x10	3
9	FUNCTION BUTTON(A)	1
10	DIAL KEYS	1
11	FUNCTION BUTTON(B)	1
12	DIAL KEY RUBBER	1
13	KEY PCB	1
14	SCREW BB 2x6	8
15	SCREW BB 2x5	6
16	PCPB	1
17	SW DUSTPROOF PAPER	2
18	BUTZER	1
19	BOTTOM BASE	1
20	VOL DUSTPROOF PAPER	1
21	PCB CN	1
22	MIC PCB_B	1
23	SPONGE	1
24	MIC	1
25	SPONGE D=11.5 d=3.5 l=1.5	1
26	SCREW PA 3x10 WHITE	4
27	SPONGE FOOT	2
28	TOP HANDELT	1
29	SPONGE	1
30	RECEIVER SD-150/38	1
31	SPONGE D=36 d=18 l=2.5	1
32	DUSTPROOF PAER	1
33	BOTTOM HANDELT	1
34	SCREW PB 3x8	1
35	SCREW BB 2x5	2
36	MIC PCB	1
37	SPONGE	1
38	MIC	1
39	SPONGE D=11.5 d=3.5 l=1.5	1
40	MJ	1
41	CURL CORD	1

THIRD ANGLE PROJECTION		SIGNATURE	DATE	TITLE
SIZE A3	UNIT IN MM	DRAWN BY		BKT-39P RU EXPLODE DWG.
FIRST USED ON 06/05/2017 BY RU EXPLODE DWG	REVISIONS		DRAWING NO.	
	ENG'G			FINISH
	SHEET 1 / 1			

IC Data - Ringer

BLOCK DIAGRAM

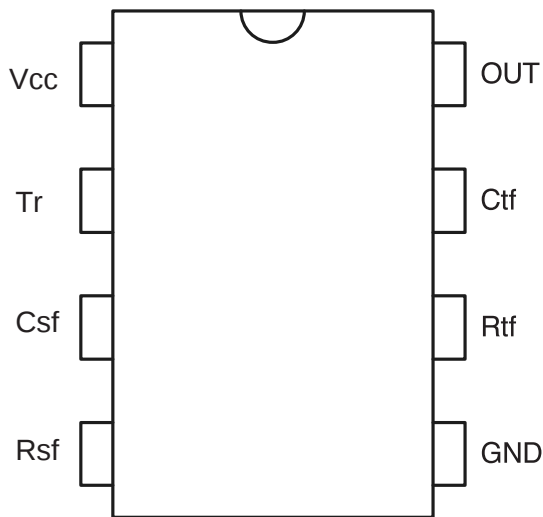


NOTE: Trans. Freq. OSC is Transform frequency oscillator.

AF OSC is Audio-frequency oscillator.

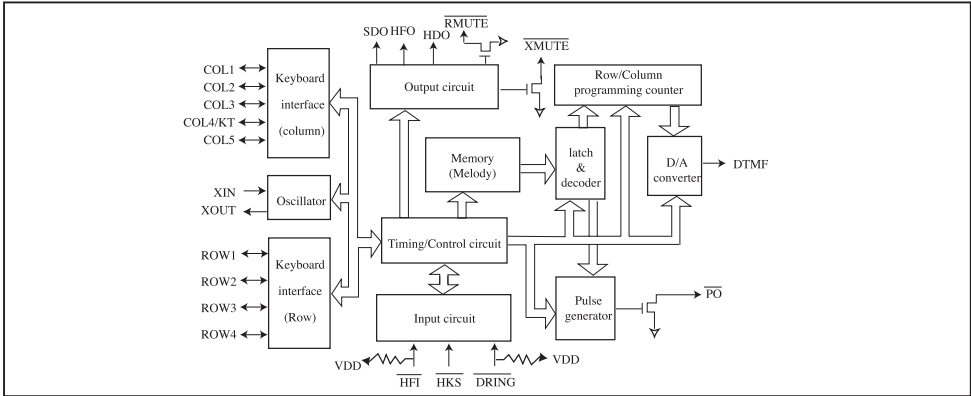
IC Data - Ringer

PIN CONNECTION (Top view)



Pin No.	Symbol	Pin Name
1	Vcc	Supply voltage
2	Tr	Trigger input
3	Csf	Transform-frequency OSC capacitance
4	Rsf	Transform-frequency OSC capacitance
5	GND	Ground pin
6	Rtf	Audio-frequency OSC resistance
7	Ctf	Audio-frequency OSC capacitance
8	OUT	Output

FUNCTIONAL BLOCK DIAGRAM



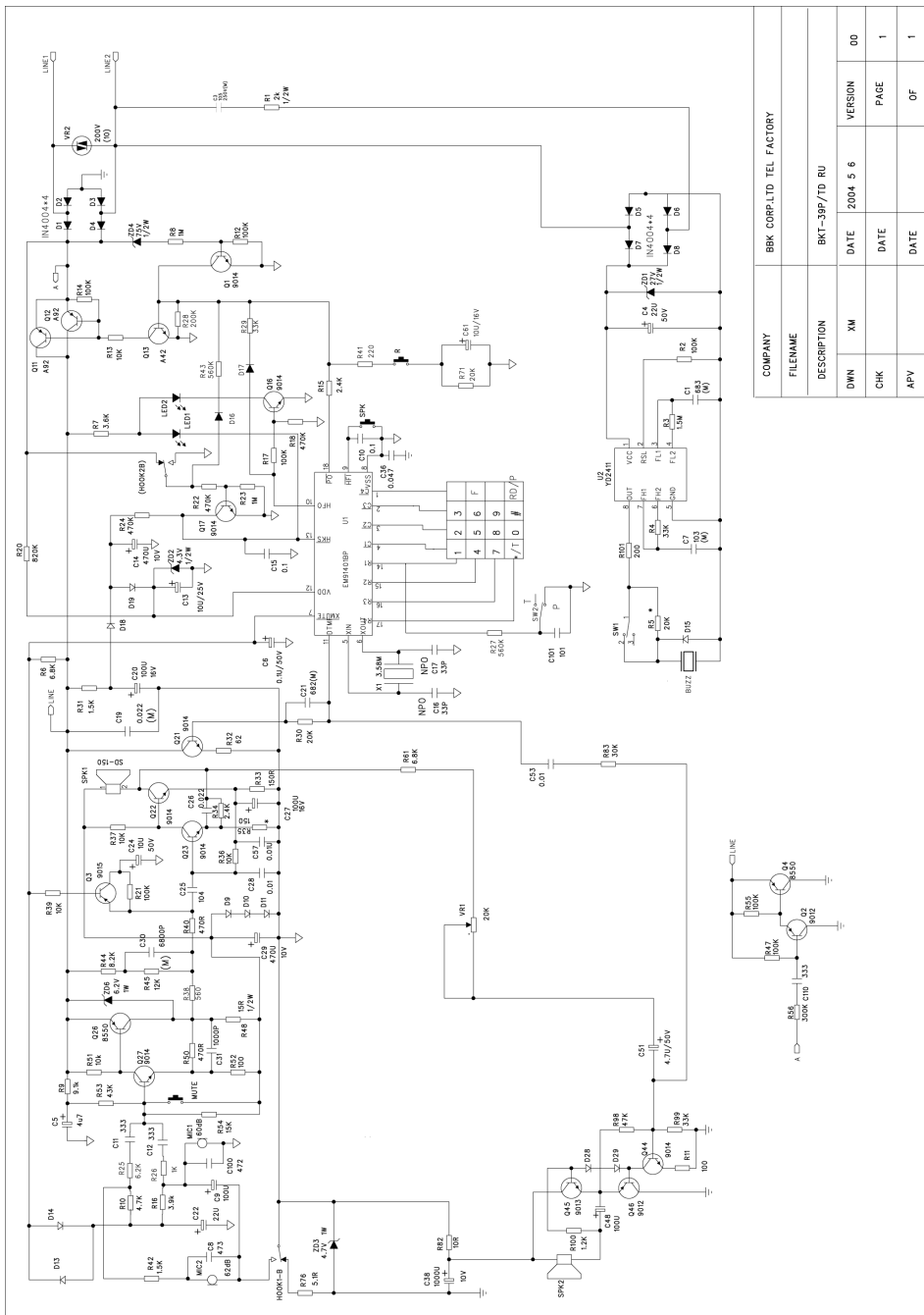
PIN DESCRIPTIONS

Symbol	Function
ROW1~ROW4	Keyboard scan pins of row group. In idle state ($\overline{\text{HKS}}$ is “High” and HFO is “Low”), these pins stay “High impedance” level to prevent power consumption. Otherwise, these pins switch to “High” level for detecting keyboard entry. These pins will output 600 Hz signal while keyboard is scanning.
COL1~COL3 and COL5	Keyboard scan pins of column group. In idle state, these pins stay “High impedance” level. Otherwise these pins switch to “Low” level for detecting keyboard entry. These pins will output 600 Hz signal while keyboard is scanning.
COL4/KT	The fourth column group pin of the keyboard that also provides the keytone output . Normally, this pin stays “Low” level for detecting keyboard entry. After a valid keyboard entry, this pin will output keying confirmation tone that is 600 Hz signal and 30 ms duration. To prevent signal interference, while DTMF issue, it will disable key tone output except function key.
XIN and XOUT	Oscillator input and output pins. A 3.579545 MHz crystal or ceramic resonator must be crossed connection to XIN and XOUT pins which generate system clock.
$\overline{\text{XMUTE}}$	The Tone/Pulse MUTE signal output pin that is NMOS open-drain output structure. This pin will switch to “Low” level during Tone/Pulse dialing and hold function . Otherwise, this pin stays “High impedance” level.
V_{DD} and V_{SS}	Positive and negative power supply input pins. Recommended operating voltage from 2.0Vdc to 5.5Vdc.
HFI	Handfree inputs pin which accepts falling edge signal to turn “on” or turn “off” handfree function. This pin is hysteresis input structure and built-in pull up resistor (typically 200 Kohms).
HFO	Handfree outputs pin that is designed to control telephone line for on-hook dialing or control speakerphone circuit for handfree conversation. When handfree function is executed, this pin will switch to “High”. Otherwise, this pin stays “Low” level.
DTMF	The DTMF (Dual Tone Multi-Frequency) and music signals output pin. Normally, this pin stays “Low” level. In Tone dialing mode, this pin will output DTMF signal that is corresponding to keyboard 0 .. 9, * and # keys. Beside this, in the line hold duration, this pin will issue dual-tone music for telephone line.

IC Data - Pin Description

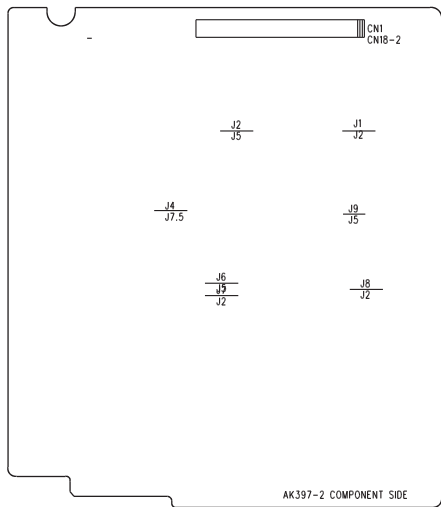
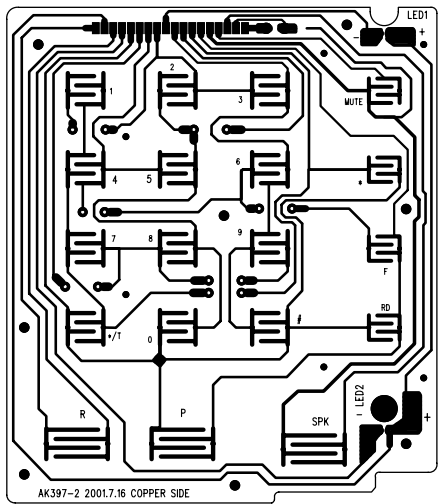
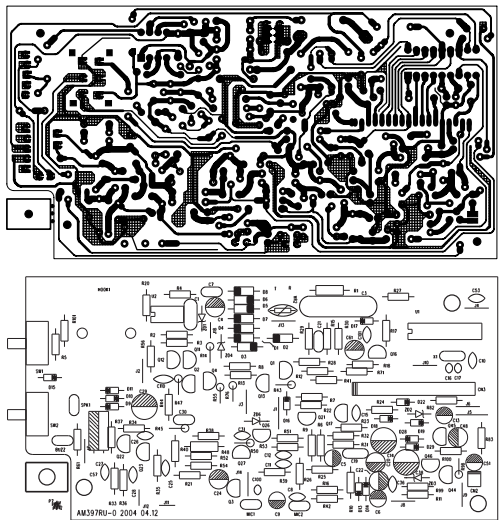
Symbol	Function
HKS	Control signal inputs pin that is corresponding hook switch status. When handset was left from cradle, this pin must be connected to “Low” level to operate all functions. Otherwise, this pin must be connected to “High” level to disable all function and prevent power consumption.
PO	Pulse signal outputs pin that is NMOS open-drain output structure. Normally, this pin stays “High impedance” level. In Pulse dialing mode and keypad was entry. This pin will output pulse trains signal that is corresponding to keyboard 0 .. 9 keys.
HDO	Hold function output that is CMOS structure. Normally, this pin stays “Low” level. When Hold function is executing, this pin will output “High” level. This pin is designed to drive LED or peripheral circuit to indicate line is at Hold status.
SDO	SDO function output that is NMOS open-drain structure. When there is a valid entry on keyboard, this pin will output a serial data. This serial data is designed to drive LCD driver to display dialing number on LCD screen or drive voice synthesizer to announce dialing number to speaker.
DRING	The ring signal detect input pin which is internal pull up (built-in 100 Kohms resistor). While the Tel-ring is incoming, this pin must be connected to “Low” with delay to indicate the ringing . Otherwise, this pin must be connected to “High” level .
RMUTE	Ring mute output pin that is NMOS open-drain structure. The RMUTE pin is designed to control microphone of handset to prevent the illegal dialing from pocket dialer. If the DRING pin is at “High” level , then Off-Hook or turn on Handfree , this pin will output “Low” level. In other words, the DRING pin is used to check the phone that receives an incoming call (DRING =Low input) or make an outgoing call (DRING= High input) . If the phone user make an outgoing call ,then RMUTE pin activated to prevent the illegal dialing from pocket dialer in the particular application.The RMUTE can be restored to “High” level when the first key entry is not the optioned lock-number .
NC	No connection.

Elements Diagram



COMPANY	BBK CORP.LTD TEL FACTORY				
FILENAME					
DESCRIPTION	BKT-39P7TD RU				
DWN	XMI	DATE	2004 5 6	VERSION	00
CHK		DATE		PAGE	1
APV		DATE		OF	1

PCB Diagram



Replacement Parts List

BKT-39PTD RU REPLACEMENT PARTS LIST			
MAIN BOARD(CM397RU-0) PARTS			
S/N	DESCRIPTION	QUANTITY	Ref.No.
1	RESISTOR CARBON FILM 1/4W 6.8K±5%	2	R6 R61
2	RESISTOR CARBON FILM 1/4W 6.2K±5%	1	R25
3	RESISTOR CARBON FILM 1/4W 560K±5%	2	R27 R43
4	RESISTOR CARBON FILM 1/4W 9.1K±5%	1	R9
5	RESISTOR CARBON FILM 1/4W 8.2K±5%	1	R44
6	RESISTOR CARBON FILM 1/4W 820K±5%	1	R20
7	RESISTOR CARBON FILM 1/4W 1.5MΩ ±5%	1	R3
8	RESISTOR CARBON FILM 1/4W 33K ±5%	3	R99 R4 R29
9	RESISTOR CARBON FILM 1/4W 1.2K ±5%	1	R100
10	RESISTOR CARBON FILM 1/4W 1K ±5%	1	R26
11	RESISTOR CARBON FILM 1/4W 1MΩ ±5%	2	R23 R8
12	RESISTOR CARBON FILM 1/4W 100K ±5%	7	R47 R17 R12 R14 R21 R55 R2
13	RESISTOR CARBON FILM 1/4W 10K ±5%	5	R36 R37 R51 R39 R13
14	RESISTOR CARBON FILM 1/4W 100Ω ±5%	2	R11 R52
15	RESISTOR CARBON FILM 1/4W 10Ω ±5%	1	R82
16	RESISTOR CARBON FILM 1/4W 12K ±5%	1	R45
17	RESISTOR CARBON FILM 1/4W 560Ω ±5%	1	R38
18	RESISTOR CARBON FILM 1/4W 47K ±5%	1	R98
19	RESISTOR CARBON FILM 1/4W 5.1Ω ±5%	1	R76
20	RESISTOR CARBON FILM 1/4W 470K ±5%	3	R18 R24 R22
21	RESISTOR CARBON FILM 1/4W 470Ω ±5%	2	R40 R50
22	RESISTOR CARBON FILM 1/4W 43K ±5%	1	R53
23	RESISTOR CARBON FILM 1/4W 3.9K ±5%	1	R16
24	RESISTOR CARBON FILM 1/4W 3.6K ±5%	1	R7
25	RESISTOR CARBON FILM 1/4W 300K ±5%	1	R56
26	RESISTOR CARBON FILM 1/4W 62Ω ±5%	1	R32
27	RESISTOR CARBON FILM 1/2W 2K ±5%	1	R1
28	RESISTOR CARBON FILM 1/2W 15Ω ±5%	1	R48
29	RESISTOR CARBON FILM 1/4W 220Ω ±5%	1	R41
30	RESISTOR CARBON FILM 1/4W 150Ω ±5%	2	R33 R35
31	RESISTOR CARBON FILM 1/4W 1.5K ±5%	2	R42 R31
32	RESISTOR CARBON FILM 1/4W 15K ±5%	1	R54
33	RESISTOR CARBON FILM 1/4W 200Ω ±5%	1	R101
34	RESISTOR CARBON FILM 1/4W 4.7K ±5%	1	R10
35	RESISTOR CARBON FILM 1/4W 2.4K ±5%	2	R15 R34
36	RESISTOR CARBON FILM 1/4W 20K ±5%	3	R30 R5 R71
37	RESISTOR CARBON FILM 1/4W 200K ±5%	1	R28
38	RESISTOR CARBON FILM 1/4W 30K ±5%	1	R83
39	CD11 50V 0.1μF ±20% 5X11 2.0	1	C6
40	CD11 50V 10μF ±20% 5X11 2.0	3	C13 C61 C24
41	CD11 16V 100μF±20% 6X12 2.5	4	C9 C20 C27 C48
42	CD11 50V 22μF±20% 6X12 2.5	2	C4 C22
43	CD11 50V 4.7μF ±20% 5X11 2.0	2	C5 C51
44	CD11 10V 470μF±20% 8X12 3.5	2	C14 C29
45	CD11 10V 1000μF±20% 8X16 3.5	1	C38
46	POLY CAPACITOR 100V 683±10% 6MM	1	C1
47	POLY CAPACITOR 100V 103±10% 3.5MM	1	C7
48	POLY CAPACITOR 100V 333±10% 5MM	1	C110
49	POLY CAPACITOR 100V 223±10% 5MM	1	C19
50	POLY CAPACITOR 100V 682±5% 3.5MM	1	C30
51	POLY CAPACITOR 250V 105±10% 20MM	1	C3
52	POLY CAPACITOR 100V 682±10% 3.5MM	1	C21

Replacement Parts List

53	CERAMIC CAPACITOR 50V 473±20% 5MM	2	C8 C36
54	CERAMIC CAPACITOR 50V 472±20%2.5MM	1	C100
55	CERAMIC CAPACITOR 50V 33P±10%NPO 2.5MM	2	C16 C17
56	CERAMIC CAPACITOR 50V 223±20% 5MM	1	C26
57	CERAMIC CAPACITOR 50V 102± 10% 5MM	1	C31
58	CERAMIC CAPACITOR 50V 101±10%NPO 5MM	1	C101
59	CERAMIC CAPACITOR 50V 333± 10% 5MM	2	C11 C12
60	CERAMIC CAPACITOR 50V 104±20% 5MM	3	C10 C15 C25
61	CERAMIC CAPACITOR 50V 103±20% 5MM&	3	C28 C57 C53
62	TRANSISTOR 8550C	2	Q26 Q4
63	TRANSISTOR C9012H	2	Q46 Q2
64	TRANSISTOR 9014C 300 ≤ β ≤ 400	8	Q16 Q17 Q21 Q22 Q23 Q27 Q44 Q1
65	TRANSISTOR 9015C	1	Q3
66	TRANSISTOR 9013H	1	Q45
67	TRANSISTOR A92 100 ≤ β ≤ 200 VCES ≤ 0.1V	2	Q11 Q12
68	TRANSISTOR MPS-A42 120 ≤ β ≤ 180	1	Q13
69	ZENERDIODE 6.2V 1W	1	ZD6
70	ZENERDIODE 75V 1/2W	1	ZD4
71	ZENERDIODE 4.7V 1W	1	ZD3
72	ZENERDIODE 4.3V 1/2W	1	ZD2
73	ZENERDIODE 27V 1/2W	1	ZD1
74	DIODE 1N4148	12	D9 D10 D11 D18 D19 D13 D14 D17 D16 D28 D29 D15
75	DIODE 1N4004	8	D1 D2 D3 D4 D5 D6 D7 D8
76	IC YD2411 DIP	1	U2
77	EM91415H DICE		
78	PCB A318CPU-0 118×116/40*	1	
79	PCB AK397-2*	1	
80	PCB AM397RU-0 146X75.3X1.6 HB SX	1	
81	PCB CN297-0/12 106.8X88	1	
82	PCB MIC-2*	1	
83	VSR 10D 180V	1	VR2
84	CERAMIC RESONATOR 3.58MHZ	1	X1
85	WAFER 18P 140MM 2.0MM	1	CN3
86	WAFER 2P 80MM 2.0MM	1	CN2
87	MIC 62d B 9.7X6.5 PINS	1	MIC2
88	SPEAKER 0.5W 25Ω Φ57	1	
89	BUZZLE Φ35	1	
90	LEDE Φ3 RED	2	LED1 LED2
91	HOOK THK-1AN-0020 38-62G	1	
92	SW SS-12F23-G5	2	SW1 SW2
93	SW 20K S1505N12B2	1	VR1
HANSET PARTS			
1	PCB MIC-2	1	
2	MIC 62d B 9.7X6.5 PINS	1	MIC1
3	RECEIVER SD-150/38	1	SPK1

Troubleshooting

Much noise

Make sure the telephone cord line is connected firmly to the base unit and the telephone jack.

The telephone doesn't ring when you receive a call

1. Make sure the telephone cord line is connected firmly to the base unit and the telephone jack.
2. Make sure the handset is placed correctly.

The handsfree feature doesn't work

Make sure the surrounding noise is not too loud.

There is no dial tone

1. Please check whether the telephone line is disconnected or loose.
2. Please check whether the telephone line has signal.

Can not dial out

Please check whether the TONE/PULSE switch is on a correct position and whether the telephone is connected and plugged well.

IBBK



Telephone Equipment

MODEL: BKT-39P/TD RU

Basic Phone