TE-100 CIRCUIT DESCRIPTION

1.Power Regulator
On the Digital board use TOREX XC6201B332P (U3) this is 3.3V Regulator for digital circuit (U1,U2,U4,U5,U6,U7).
On the RF board use TOREX XC6204B302P (U2) this is 3.0V Regulator for RF circuit (PLL,BUFFER,PreDrive,Drive)

2.PLL
In the PLL section use FUJITSU MB15E07SL PLL IC. Built-in Phase Comparator, reference counter , swallow counter and programmable counter, , Charge pump. (Q1,D3,D4,L1,C20) is “VCO” section ,(X1,C2,C3,C10,D1,D2,C33) is “REF OSC and modulation” section, (C8,R2,C6,R3,C7) is “LOOP Filter ” section.

3.BUFFER
“Q2,R18,L4,C28,R20,R19,C29” is BUFFER stage reduce load effect for VCO.

4.Pre Driver
“Q3,C34,R24,C35,R25,C65” amplify signal ,deliver more large signal to “Driver” stage.

5.Driver
“C36,R28,C37,R27,Q4,L6,L7,C38,C40”amplify signal ,deliver more power to “POWER” stage.

6.POWER
“C41,L8,R29,L9,Q5,L10,R49,C43,C46,L12,C47” boost up power, deliver power to antenna.

7.RF LOW PASS FILTER
“C50,C51,C52.C53,L13,L14,L15” is 7 th order ‘π’ filter filtration output RF signal reduce harmonic level.

8. MODULATOR
Digital signal from CPU (U2.Pin15) to a 4rd Bessel filter (R27,R28,R29,R30,C9,C10,C11,C12,U6,U7) filtration MOD signal reduce adjacence channel power. adjacence channel power. Next to REF OSC (C2,C3,C4,C10,C33,D1,D2 ,C11,R5) D1&D2 ,and VCO (L1,L2,D3,D4,C20,C22,C24,C25,C26,C27,R12,R13,R14,R15,R16,R17) D3&D4, D1,D2,D3,D4 is variable capacitance diode,make REF OSC & VCO frequency change.

TE100 deviation alignmemt Procedure

A.Instrument

1. DC Power supply.
2. Modulation meter or communication tester

B. Procedure

1. Make test point short. Reference figure1 “test point position”
2. Turn on power.
2. Press “4” key set modulation wavefrom to becom 600Hz square wave.
3. Tuning R22 to set deviation to 4.0kHz(for 25kHz channel spacing) or 2.0kHz(for 12.5kHz channel spaceing). Reference figure2 “R22 & R23 position”
4. Press “6” key set modulation wavefrom to becom 128Hz square wave.
5. Tuning R23 to set deviation waveform like a ideal square wave. Reference figure2 “R22 & R23 position”
6. Make test point open.

Note: After soldering crystal or other components of RF P.C.B
must be waiting 10 minutes for RF P.C.B heat stability
",then go to alignment process.",,,,,,

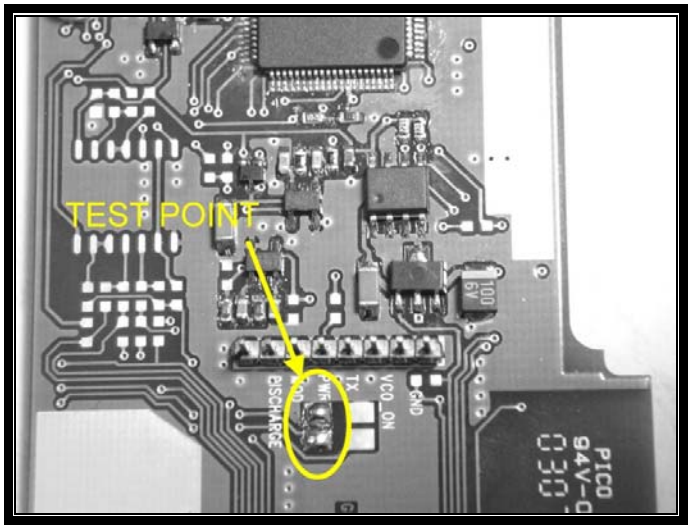

figure 1

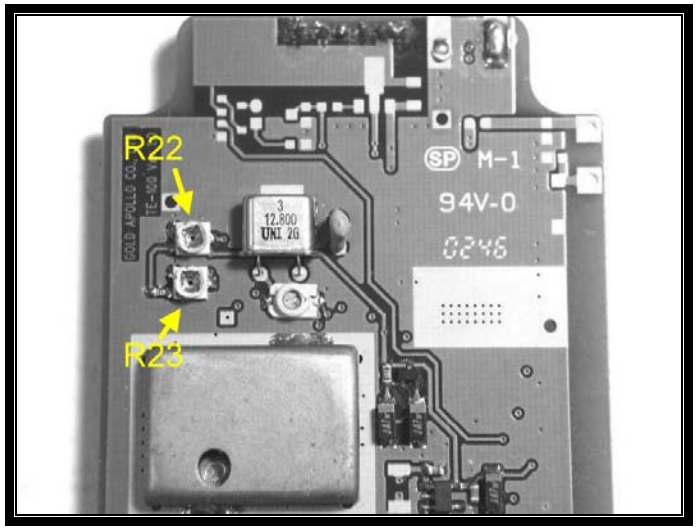

figure 2

TE-100 SPECIFICATIONS

RF

.Frequency range TX : 450MHz ~ 470MHz
.Modulation type : FSK.
.Channel spacing : 12.5kHz or 25KHz
.Output power(ERP) : +26dBm
.Maximum deviation : ± 2.5kHz or ± 4.5kHz
.Harmonic Radiation : less - 25 dBm
.Frequency stability : 2.5 ppm at –30°C ~ 60°C
.Output Connect : SMA (F)

GENERAL

.Active Voltage range : 3.45 ~ 4.5V (AAA size battery × 3)
.Current consumption : Standby : 30μA
Transmit : 350mA
.Dimensions : 58(W)×112.8(H)×22.5(D) mm (Without Antenna)
.Weight : 85g (Without Battery & Antenna)
.1, 4 or 8 buttons provides multiple messaging capability
max alpha character : 1200
max numeral : 2000
tone only
.Built-in battery check