## Absolute Maximum Ratings

| | | | |
|---|---|---|---|
| Temperature under bias | 0°C | to | 70°C |
| Storage temperature | -65°C | to | 150°C |
| Input voltage | -0.3V | to | +6.0V |
| Output voltage | -0.3V | to | +6.0V |

## DC Electrical Characteristic

(Ta=0°C~70°C, VDD=5V, VSS=0V)

| Symbol | Parameter | Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| $I_{IL}$ | Input Leakage Current | $V_{IN} = V_{DD}, V_{SS}$ | | | ±1 | μA |
| $V_{IH}$ | Input High Voltage | | 2.0 | | | V |
| $V_{IL}$ | Input Low Voltage | | | | 0.8 | V |
| $V_{IHT}$ | Input High Threshold Voltage | /RESET, TCC, /INT | $0.85V_{DD}$ | | $V_{DD}$ | V |
| $V_{ILT}$ | Input Low Threshold Voltage | /RESET, TCC, /INT | $V_{SS}$ | | $0.15V_{DD}$ | V |
| $V_{IHX}$ | Clock Input High Voltage | OSCI | 3.5 | | | V |
| $V_{ILX}$ | Clock Input Low Voltage | OSCI | | | 1.5 | V |
| $V_{OH1}$ | Output High Voltage (Ports 5, 6, 7) | $I_{OH}$ = -12.0mA | 2.4 | | | V |
| $V_{OL1}$ | Output Low Voltage (Ports 5, 6) | $I_{OL}$ = 12.0mA | | | 0.4 | V |
| $V_{OL2}$ | Output Low Voltage (Port 7) | $I_{OL}$ = 20.0mA | | | 0.4 | V |
| $I_{PH}$ | Pull-high current | Pull-high active, input pin at $V_{SS}$ | -50 | -100 | -240 | μA |
| $I_{SB}$ | Power down current | All input and I/O pin at $V_{DD}$, output pin floating, WDT enabled | | | 10 | μA |
| $I_{CC1}$ | Operating supply current | /RESET="High", Fosc=4MHz (MS="1", HLF="1", CK2="0"), output pin floating | | | 2 | mA |
| $I_{CC2}$ | Operating supply current | /RESET="High", Fosc=10MHz (MS="1", HLF="1", CK2="0"), output pin floating | | | 5 | mA |
| $I_{CC3}$ | Operating supply current ($V_{DD}$=3.25V) | /RESET="High", Fosc=32KHz (MS="1", HLF="0", CK2="0"), output pin floating, WDT disabled | | | 30 | μA |

## AC Electrical Characteristic

(Ta=0°C~70°C, VDD=5V, VSS=0V)

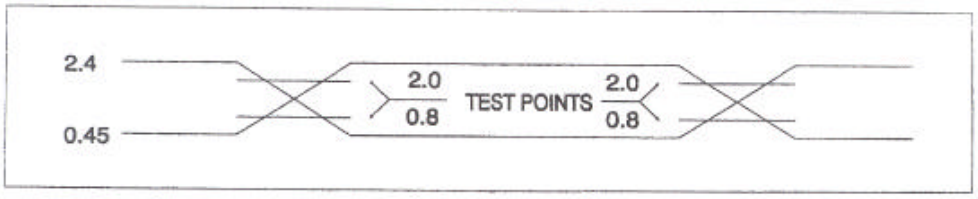
| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Dclk | Input CLK duty cycle | | 45 | 50 | 55 | % |
| Tins | Instruction cycle time (CK2="0") | XTAL Type<br>RC Type | 100<br>500 | | DC<br>DC | ns<br>ns |
| Ttcc | TCC input period | | (Tins+20)/N* | | | ns |
| Tdrh | Device reset hold time | Ta = 25°C | | 18 | | ms |
| Twdt | Watchdog timer period | Ta = 25°C | | 18 | | ms |

* N= selected prescaler ratio.

UPPER

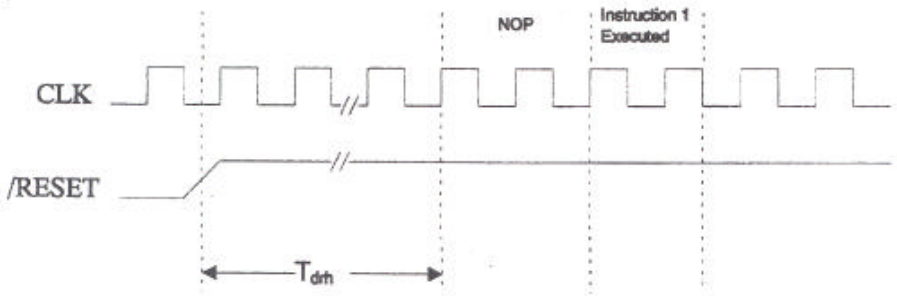
## Timing Diagrams

### AC Test Input/Output Waveform

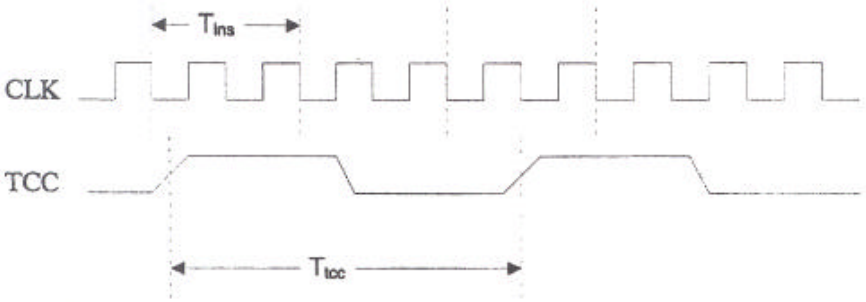



AC Testing: Input are driven at 2.4V for logic "1", and 0.45V for logic "0". Timing measurements are made at 2.0V for logic "1", and 0.8V for logic "0".

### RESET Timing (CK2="0")




### TCC Input Timing (CK2="0")




**Data frequency MIN. 347 Hz MAX. 1.3KHz**

UPPER

# HANDSET SELFTEST MODE TABLE

| | | | | Tx | | | | Rx | | | | VTX | Beep | TXD | Pin-5 | 10.250Mhz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | MUTE | CP | AF | RF | MUTE | CP | AF | RF | Tx-RF | Rx-CP | | Rx-AF:1/0=ND/CD Tx-CP:1/0=~/ Rx Lock | |
| 1 | KEY-3 | Tx Power (vco Adjust)) | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | On | - | - | N.D | 0x EE |
| 2 | KEY-4 | Tx DEV. | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | On | - | - | RX | 0x 0E |
| 3 | KEY-5 | Tx Data | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | On | - | On | N.D | 0x EE |
| 4 | KEY-6 | Rx SINAD W/O Tx | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | Off | - | - | C.D | 0x F4 |
| 5 | KEY-7 | Rx SINAD W/H Tx | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | On | - | - | C.D | 0x 44 BAT LED On |
| 6 | KEY-8 | BeepTone Test | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | On | On | - | N.D | 0x 4A INTC LED On |
| | KEY-9 | Reserve | | | | | | | | | | | | | |
| | CHAN | Channel = Channel + 1 | | | | | | | | | | | | | |

1. To Access Selftest Mode: Press FLASH/MEM Key ->and put in battery.
2. To press KEY 0,1,2 to change Channel (01~25) example CH-25 ; press "2", "5" CH-03:press "0","3"
3. To press"CHAN" Key: Channel = Channel +1
4. To preset Channel : 16 (25-CH) or 06(10-CH)
5. To press KEY 3,4,5,6,,7,8,9 to choose MODE 1 to 7, and to reset Channel for preset Channel =16(CH-25) or 06(CH-10).
6. To press "TALK" Key to access DTMF test when Talk LED flash on and to dial Key the number you need to be changed, if you need to retrun to SELFTEST Mode , dial "TALK" key (Talk LED Light off). PS: it must be matched with Mode-0 of main machine.

# BASESET SELFTEST MODE TABLE

| | | T | B | 3 | | 1 | 2 | 2 | 3 | Lo | Hi | * | Lo | Pin-5 | REF CLK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Tx | | | | Rx | | | | VTX | Hook | TXD | SPON (Linemute) | | 10.245Mhz |
| | | MUTE | CP | AF | RF | MUTE | CP | AF | RF | Tx-RF | Rx-CP | | | Rx-AF:1/0= ND / CD TX-CP:1/0=~/Rxlock | |
| 0 | DTMF Test | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | On | On | - | off (No Mute) | N.D | 0x 4E |
| 1 | Talk Mode | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | On | On | - | off (No Mute) | C.D | 0x 44 |
| 2 | Tx Power (vco) | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | On | Off | - | off (No Mute) | N.D | 0x EA |
| 3 | Tx DEV. | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | On | On | - | off (No Mute) | RX | 0x 0E |
| 4 | Tx Data | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | On | Off | On | off (No Mute) | N.D | 0x EA |
| 5 | Rx Sinad (w/o Tx) | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | Off | On | - | off (No Mute) | C.D | 0x F4 |
| 6 | Intercom Tx | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | On | Off | - | On (Mute) | N.D | 0x 4A INTC_LED On |
| 7 | Intercom Rx | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | On | Off | - | On (Mute) | C.D | 0x E0 INTC_LED On |
| 8 | DTMF Dialing | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | On | On DTMF | - | off (No Mute) | N.D | 0x 4E |

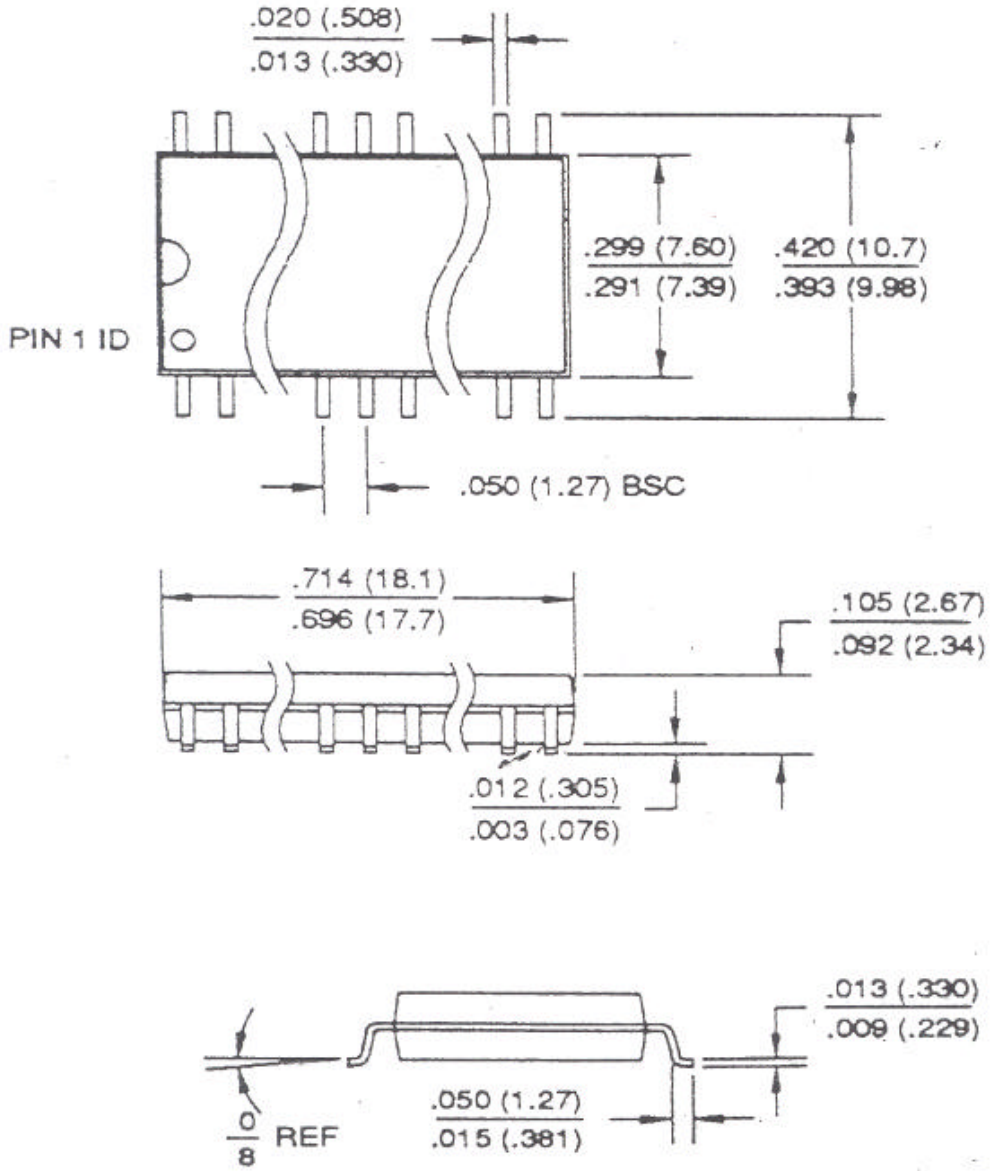
1. To access Selftest Mode- 1.> Ringer On/Off switch to place off position 2 > press Page Key 3.>Off Cradle. 4.>Plug in adaptor to access MODE-0 (DTMF TEST)
2. To press Page Key to change Channel the sequence: 20->25->01->07->13->14->15.....25,1->25CH
   10->05->01->07->03->04->05.....10,1->10CH
   (under Mode-0 for matching with cellular, therefore CH=CH+1)
3. To press Page Key in Mode8, you may dial 1,2,3,4,5,6,7,8,9,*,0,#-> in DTMF,then it automatically back to Mode 1 to press ( no more press Mode-0)
4. To preset Channel =16(CH-25) or 06(CH-10)
5. To swith to T.P. Switch for choosing Mode, and reset Channel to preset Channel =16(CH-25) or 06(CH-10).
6. TALK LED: if HOOK On in the above MODE, the TALK_LED will be flashing, if not the TALK_LED will be light off.

## PACKAGE INFORMATION

**28S, 28Lead, 0.300" Wide,**

Plastic Gull Wing Small Outline (SOIC)

Dimensions in Inches and (Millimeters)



USA CT–1 HANDSET CHANNEL FREQUENCIES (2nd LO = 10.240 MHz, Ref Divider = 2048)

| Channel Number | $T_X$ Channel Frequency (MHz) | $T_X$ Divider (5.0 kHz Ref) | 1st LO Frequency (MHz) 1st IF = 10.695 MHz | $R_X$ Divider (5.0 kHz Ref) |
|---|---|---|---|---|
| 1 | 48.760 | 9752 | 33.025 | 6605 |
| 2 | 48.840 | 9768 | 33.045 | 6609 |
| 3 | 48.860 | 9772 | 33.125 | 6625 |
| 4 | 48.920 | 9784 | 33.145 | 6629 |
| 5 | 49.020 | 9804 | 33.225 | 6645 |
| 6 | 49.080 | 9816 | 33.265 | 6653 |
| 7 | 49.100 | 9820 | 33.425 | 6685 |
| 8 | 49.160 | 9832 | 33.465 | 6693 |
| 9 | 49.200 | 9840 | 33.485 | 6697 |
| 10 | 49.240 | 9848 | 33.505 | 6701 |
| 11 | 49.280 | 9856 | 33.625 | 6725 |
| 12 | 49.360 | 9872 | 33.665 | 6733 |
| 13 | 49.400 | 9880 | 33.705 | 6741 |
| 14 | 49.460 | 9892 | 33.765 | 6753 |
| 15 | 49.500 | 9900 | 33.785 | 6757 |
| 16 | 49.670 | 9934 | 35.915 | 7183 |
| 17 | 49.845 | 9969 | 35.935 | 7187 |
| 18 | 49.860 | 9972 | 35.975 | 7195 |
| 19 | 49.770 | 9954 | 36.015 | 7203 |
| 20 | 49.875 | 9975 | 36.035 | 7207 |
| 21 | 49.830 | 9966 | 36.075 | 7215 |
| 22 | 49.890 | 9978 | 36.135 | 7227 |
| 23 | 49.930 | 9986 | 36.175 | 7235 |
| 24 | 49.990 | 9998 | 36.235 | 7247 |
| 25 | 49.970 | 9994 | 36.275 | 7255 |

## APPENDIX A – CHANNEL FREQUENCIES

USA CT–1 BASE SET CHANNEL FREQUENCIES (2nd LO = 10.240 MHz, Ref Divider = 2048)

| Channel Number | $T_X$ Channel Frequency (MHz) | $T_X$ Divider (5.0 kHz Ref) | 1st LO Frequency (MHz) 1st IF = 10.695 MHz | $R_X$ Divider (5.0 kHz Ref) |
|---|---|---|---|---|
| 1 | 43.720 | 8744 | 38.065 | 7613 |
| 2 | 43.740 | 8748 | 38.145 | 7629 |
| 3 | 43.820 | 8764 | 38.165 | 7633 |
| 4 | 43.840 | 8768 | 38.225 | 7645 |
| 5 | 43.920 | 8784 | 38.325 | 7665 |
| 6 | 43.960 | 8792 | 38.385 | 7677 |
| 7 | 44.120 | 8824 | 38.405 | 7681 |
| 8 | 44.160 | 8832 | 38.465 | 7693 |
| 9 | 44.180 | 8836 | 38.505 | 7701 |
| 10 | 44.200 | 8840 | 38.545 | 7709 |
| 11 | 44.320 | 8864 | 38.585 | 7717 |
| 12 | 44.360 | 8872 | 38.665 | 7733 |
| 13 | 44.400 | 8880 | 38.705 | 7741 |
| 14 | 44.460 | 8892 | 38.765 | 7753 |
| 15 | 44.480 | 8896 | 38.805 | 7761 |
| 16 | 46.610 | 9322 | 38.975 | 7795 |
| 17 | 46.630 | 9326 | 39.150 | 7830 |
| 18 | 46.670 | 9334 | 39.165 | 7833 |
| 19 | 46.710 | 9342 | 39.075 | 7815 |
| 20 | 46.730 | 9346 | 39.180 | 7836 |
| 21 | 46.770 | 9354 | 39.135 | 7827 |
| 22 | 46.830 | 9366 | 39.195 | 7839 |
| 23 | 46.870 | 9374 | 39.235 | 7847 |
| 24 | 46.930 | 9386 | 39.295 | 7859 |
| 25 | 46.970 | 9394 | 39.275 | 7855 |