

## KG710-700MHz/800MHz Base and Repeater

### 5.0 LIST OF SEMICONDUCTORS DESIGNATIONS AND FUNCTIONS

#### 5.1 Tx VCO UNIT

|       |           |                      |
|-------|-----------|----------------------|
| Q301  | 2SK508    | Oscillator           |
| Q302  | 2SC4325   | Amplifier            |
| Q303  | 2SC3583   | VCO output amplifier |
| Q304  | DTA124EUA | Switch               |
| Q305  | 2SC2351   | B + filter           |
| Q306  | DTA114EUA | B + switch           |
| IC301 | uPC1688   | Amplifier            |

#### 5.2 Tx MAIN UNIT (YOUNGER)

|       |             |               |
|-------|-------------|---------------|
| Q201  | 2SK3018     | PTT buffer    |
| Q202  | UMG1N       | Switch        |
| Q203  | UMC2        | Switch        |
| Q207  | 2SD2351     | B + filter    |
| Q205  | 2SK3018     | Charge pump   |
| Q208  | RTU002P02   | Charge pump   |
| Q209  | 2SK3018     | Charge pump   |
| Q210  | UMC2N       | Switch        |
| Q212  | UMG1N       | Switch        |
| Q213  | DTC124EUA   | Switch        |
| Q220  | RD00HVS1    | RF amplifier  |
| Q211  | 2SC3357     | RF amplifier  |
| Q214  | 2SC4250     | Charge pump   |
| Q215  | 2SC4325     | Switch        |
| Q216  | 2SC4325     | Switch        |
| Q217  | 2SK3018     | Switch        |
| Q218  | DTC124EUA   | Switch        |
| Q219  | 2SA1576     | Switch        |
| IC201 | BAJ0BCOFP   | 10v regulator |
| IC202 | XC6202P702P | 7v regulator  |

|         |             |                   |
|---------|-------------|-------------------|
| IC204   | TC75W51F    | Mod LF amplifier  |
| IC205   | TA75S01F    | Mod. Amplifier    |
| IC208   | MB1511      | PLL               |
| IC210   | NJU7662M    | DC/DC converter   |
| IC209   | TC4S66F     | LPF, switch       |
| IC211   | BA00CC0WFP  | Tx power adjust   |
| IC212-B | NJM2904     | Power control     |
| IC212-A | NJM2904     | Error amplifier   |
| IC203   | XC6202P502M | 5v regulator      |
| IC213   | TA75S01F    | Mod. LF amplifier |
| IC206   | TC7TW125FU  | Level converter   |
| IC207   | TC7TW125FU  | Level converter   |

### 5.3 TX POWER AMPLIFIER

|         |          |                        |
|---------|----------|------------------------|
| Q501    | 2SK3018  | Switch                 |
| Q502    | DTB143EK | B + switch             |
| IC501-B | BAM4558F | Reverse power control  |
| IC501-A | BAM4558F | Error amplifier        |
| IC502   | TA75S01F | Power control          |
| IC504   | AN78L05M | 5v regulator           |
| IC503   | TA75S01F | Power signal amplifier |
| Q503    | PD57018S | Driver amplifier       |
| Q504    | PD57018S | Power amplifier        |
| Q505    | PD57018S | Power amplifier        |

### 5.4 RX VCO UNIT

|       |           |                      |
|-------|-----------|----------------------|
| Q301  | 2SK508    | Oscillator           |
| Q302  | 2SC4325   | Amplifier            |
| Q303  | 2SC3583   | VCO output amplifier |
| Q304  | DTA124EUK | Switch               |
| Q305  | 2SC2351   | B + filter           |
| Q306  | DTA114EUA | B + switch           |
| IC301 | uPC1688   | Amplifier            |

## 5.5 RX MAIN UNIT

|       |             |                                   |
|-------|-------------|-----------------------------------|
| Q861  | 3SK177      | RF amplifier                      |
| Q810  | 2SK508      | 1 <sup>st</sup> High IF amplifier |
| Q809  | 2SD2351     | B + filter                        |
| Q806  | RTU002P02   | Charge pump                       |
| Q805  | 2SK3018     | Charge pump                       |
| Q807  | 2SK3018     | Charge pump                       |
| Q808  | UMC2N       | Switch                            |
| Q804  | UMC2N       | Switch                            |
| Q811  | DTA144EUA   | Switch                            |
| Q803  | 33061MCH    | Rx switch                         |
| Q802  | 2SD2351     | Rx switch                         |
| Q801  | 2SK3018     | Rx switch                         |
| Q812  | 2SC4250     | Charge pump                       |
| Q813  | 2SC4325     | Switch                            |
| Q814  | 2SC4325     | Switch                            |
| Q815  | UMC2N       | Switch                            |
|       |             |                                   |
| IC806 | MB1511      | PLL                               |
| IC807 | NJU7662M    | DC/DC inverter                    |
| IC808 | TC4S66F     | LPF switch                        |
| IC805 | XC6202P502M | 5v regulator                      |
| IC809 | TA75S01F    | VCO error amplifier               |
| IC811 | SPM5001     | 1 <sup>st</sup> mixer             |
| IC802 | XC221A200   | AF LPF                            |
| IC801 | BA70BCOFP   | 7v regulator                      |
| IC803 | TCWT125FU   | Level converter                   |
| IC804 | TCWT125FU   | Level converter                   |
| IC810 | XC221A1200  | DC amplifier                      |
| IC812 | XC6201P502M | 5v regulator                      |
| IC813 | MB1511      | PLL                               |

## 5.6 IF UNIT

|      |         |                         |
|------|---------|-------------------------|
| Q001 | 2SC4250 | 2 <sup>nd</sup> High IF |
| Q002 | 2SK880  | Wide/Narrow switch      |

|       |          |                            |
|-------|----------|----------------------------|
| Q003  | DTC623TU | Wide/Narrow switch         |
| Q004  | 2SK880   | Wide/Narrow switch         |
| Q005  | 2SK3018  | Wide/Narrow switch         |
| Q006  | 2SD2351  | Noise amplifier            |
| Q007  | XP01501  | Squelch switch             |
| Q010  | 2SC4250  | Amplifier                  |
|       |          |                            |
| IC001 | BA4116FV | Low IF/oscillator/detector |
| IC002 | M02551GP | AF amplifier               |

## 5.7 ANALOG LOGIC UNIT

|      |             |                    |
|------|-------------|--------------------|
| Q1   | 2SK3018     | Power switch       |
| Q2   | DTA144EUA   | Power switch       |
| Q3   | 2SK3018     | Switch             |
| Q4   | 2SK3018     | Switch             |
| Q5   | 2SK3018     | Switch             |
| Q6   | 2SB1698     | Switch             |
| Q7   | 2SK3018     | AF/Switch          |
| Q9   | UMX1N       | ALC                |
| Q11  | 2SK3018     | Switch             |
|      |             |                    |
| IC1  | H8S2239     | CPU                |
| IC2  | AK2344      | Rx audio processor |
| IC3  | AK2344      | Tx audio processor |
| IC4  | NJM2405     | Voltage detector   |
| IC5  | BD3931FP    | 5v regulator       |
| IC6  | TA24C256    | EE ROM             |
| IC7  | TA75S393F   | Voltage detector   |
| IC8  | BA33BC0T    | 3.3v regulator     |
| IC9  | M62551GP    | Tx power detector  |
| IC10 | R1180D33C   | 3.3v regulator     |
| IC11 | BU4819FVE   | Reset              |
| IC12 | USBN9604    | USB control        |
| IC13 | BH33FB1WHFV | 3.3v regulator     |
| IC14 | TC74HC541   | BUS switch         |
| IC15 | BU4S69F     | Inverter           |

|      |           |                         |
|------|-----------|-------------------------|
| IC16 | BU4S01F   | Switch                  |
| IC17 | BU4S81F   | Switch                  |
| IC18 | NJU2073   | Rx audio amplifier      |
| IC19 | MAX7412   | Rx LPF                  |
| IC20 | M62551GP  | Squelch control         |
| IC21 | BU4S666G2 | Rx AF switch            |
| IC22 | M62551GP  | D/A converter buffer    |
| IC23 | DP7113    | Rx audio volume control |
| IC24 | BU4S66CF  | Rx audio switch         |
| IC25 | BU4S81F   | BUSY buffer             |
| IC27 | TC7PA53FU | Rx audio switch         |
| IC28 | FX828     | Rx CTCSS/DCS            |
| IC29 | FX828     | Tx CTCSS/DCS            |
| IC30 | BU4S66G2  | Beep switch             |
| IC31 | MAX7412   | Tx LPF                  |
| IC32 | M62551GP  | Mic amplifier           |
| IC33 | M62551GP  | Bias                    |
| IC34 | XC221A12  | Rx audio buffer         |

## 5.8 DIGITAL LOGIC UNIT

|      |                       |                 |
|------|-----------------------|-----------------|
| Q1   | 2SK3018               | Inverter        |
| Q2   | 2SK3018               | Inverter        |
| IC1  | TMS320VC5509A         | DSP             |
| IC2  | A29L160A              | Flash ROM       |
| IC3  | TL16C550C1            | SIO             |
| IC4  | S1131B1QPD            | 1.6v regulator  |
| IC5  | IS61WV12816DBLL-10BLI | SRAM            |
| IC6  | M62551GP              | Tx LPF          |
| IC7  | M62551GP              | Rx LPF          |
| IC8  | MAX7414               | Rx LPF          |
| IC9  | M62551GP              | Tx LPF          |
| IC10 | TLV320AIC23B          | A/D converter   |
| IC11 | BU4819FVE             | Reset           |
| IC12 | BU7262SFVM            | Noise generator |

## 5.9 FRONT CONTROL UNIT

|       |             |                        |
|-------|-------------|------------------------|
| Q401  | UMC2N       | Tx out                 |
| Q402  | 2SA1576     | Back light control     |
| Q403  | 2SD2118     | Back light control     |
| Q404  | DTA144FUA   | Monitor switch         |
| Q405  | DTA144FUA   | Call switch            |
| Q406  | 2SK3018     | R/W switch             |
| Q407  | 2SK3018     | R/S switch             |
| Q408  | 2SK3018     | EN switch              |
| Q409  | DTC314TU    | Low power switch       |
| Q410  | UMC2N       | LED driver             |
| Q411  | UMC2N       | LED driver             |
| Q412  | UMC2N       | LED driver             |
| Q413  | UMC2N       | LED driver             |
| Q414  | UMC2N       | LED driver             |
| Q415  | 2SK3018     | R/W switch             |
| Q416  | 2SK880      | Switch                 |
| Q417  | 2SD2351     | AF power/Switch        |
| Q418  | DTA124EUA   | AF power/switch        |
| Q419  | DTA124EUA   | AF power/switch        |
| Q420  | DTA114EUA   | AF power/switch        |
|       |             |                        |
| IC401 | BAJ2000WT   | 12v regulator          |
| IC402 | TDA1519C    | AF power amplifier     |
| IC403 | XC6202P502P | 5v regulator           |
| IC404 | TA75S01F    | LED back light control |
| IC405 | TC7W125FU   | Level converter        |
| IC406 | TC7W125FU   | Level converter        |
| IC407 | TC7W125FU   | Level converter        |
| IC408 | TC7W125FU   | Level converter        |
| IC409 | M62551GP    | LCD control            |
| IC410 | TA75S558F   | Rx AF amplifier        |
| IC411 | M62551GP    | Mic amplifier          |

## 5.10 DC/DC CONVERTER

|    |        |        |
|----|--------|--------|
| Q1 | 2SJ634 | Switch |
|----|--------|--------|

|      |           |                 |
|------|-----------|-----------------|
| Q2   | RJU002N06 | Switch          |
| Q3   | RJP020N06 | Ant.switch      |
| IC1  | BD3932FP  | Regulator       |
| CVT1 |           | DC/DC c0nverter |