

Summary of Active Devices

APPLICANT: MOTOROLA

TRANSMITTER TYPE: IHET6AP1

Multicoupler Preselector Card (MPC6)

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|------------------------------------|------------------------------|
| MMPT3906LT1 | Transistor PNP 40V 2A | D.C. |
| MMBT3904LT1 | Transistor NPN 40V 2A | D.C. |
| MC33164D-5R2 | IC Undervolt Sensing Ckt, Motorola | D.C. |
| MMSZ6685T | Zener Diode 3.9V 500mV, Motorola | D.C. |
| MMBD6050LT1 | Diode 70V, 5A, Motorola | D.C. |
| HSMP-3800-L31 | RF PIN Diode | 1850-1910 MHz |
| PALCE22VIOH-15JC/4 | IC Programmable Logic Device | D.C. |
| BRPG1204W-TR | Bicolor LED 70mA 2.5V | D.C. |
| BCW69 | Transistor PNP | D.C. |
| CFK-0301 | RF FET | 1850-1910 MHz |
| MGA-82563 | IC RF Amplifier | 1850-1910 MHz |
| SNA-486 | IC RF Amplifier | 1850-1910 MHz |
| MMBZV6ALT1 | Dual Diode Common Anode 5.6V | D.C. |
| MC33060ADR2 | PWM Control Circuit | D.C. |
| MTD2955ET4 | Power MOSFET Pch 60V, 12A | D.C. |
| MBRD340T4 | Rectifier Schottky, 3A, 40V | D.C. |
| MC33182DR2 | Low Pwr Dual Op-Amp | D.C. |
| P6SMB12CAT3 | 12V Transient Suppressor | D.C. |

Multicoupler Preselector Card (MPC6) (continued)

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|-------------------------------------|------------------------------|
| MMBD7000 | Zener Diode | D.C. |
| RELAY_G6S_2G_DC12 | DPDT 12V Relay | D.C. |
| MBRS140T3 | Schottky Rectifier40V 1A | D.C. |
| LT1054IS | IC Voltage Converter with Regulator | D.C. |
| LM317 | Adj. Voltage Regulator 500mA | D.C. |
| X9241 | IC CMOS Quad EEPOT | D.C. |
| MC3303DR2 | IC Gen Purpose Quad Op-Amp | D.C. |
| X2502D | IC EPROM 256x8 | D.C. |

Group Line Interface II (GLI2)

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|------------------------------|----------------------------------|
| MB3240T10TBDG60 | DRAM 4Mx32 DIMM | 40 MHz |
| VSA51015 | 32.768MHz PLL-VCXO | 32.768 MHz |
| SG-636PCE | 40MHz OSC | 40 MHz |
| MAX732CWE | FLASH PWR SUPPLY | 170 kHz |
| I74F776A | FUTURE BUS RX | 2.048 MHz |
| I74F777A | FUTURE BUS TX | 2.048 MHz |
| LTC1435CS | SWITCHER IC | 230 kHz |
| MPC860MHzP40 | MICROPROCESSOR | 40MHz |
| MC10ELT21 | PECL | 3 MHz |
| MPC946FAR2 | CLOCK DIST IC | 40 MHz, 20 MHz |
| MC68160CFB | EEST | 20 MHz |
| MC34058FTA | RS485 XCVR | 4.096 MHz |
| MC74LCX16244DTR2 | BUFFERS | 2.048 MHz |
| SX05TR009ZQ01 | PPC ASIC | 40MHz |
| MT9082AP | TSI DIGITAL SWITCH | 8.192 MHz |
| PEB2254H-V13 | E1/T1 FRAMER/LIU/HDLC | 8.192, 12.352 MHz, 16.384 MHz |
| OR2C26A-3PS208-DB | LUCENT FPGA | 8.192, 16.384 MHz 20 MHz |
| W42C70-01G | ZERO DELAY BUFFER | 16 MHz |
| MAX250ESD | RS232 XCVR | 9600 - 19.2K BPS |
| MAX251ESD | 9600 - 19.2K BPS | RS232 XCVR |

Broadband Tranceiver Card (BBX2) (1.9GHZ BBX2 STLG4011AA)

Digital Module

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|----------------------------------|--------------------------------|
| XC5210 | Xilinx FPGA | 20 MHz 19.6608 MHz 1 MHz |
| 74LCX574 | Octal FlipFlop | 19.6608 MHz |
| BRPG1204W-TR | Red/Green LED | 0 - 2 Hz |
| MMBT3904LT1 | NPN Transistor | DC 0 - 2 Hz |
| 74ACT02 | Quad 2In NOR | 20 MHz |
| AD9762 | 12Bit DAC | 4.9152 MHz |
| AD826AR | Dual Op Amp | 0 - 630 KHz |
| MC79M05BDTRK | 5V Linear Regulator | DC |
| MC33269DT_3.3 | 3.3V Linear Regulator | DC |
| MC33161 | Univ Voltage Ref | DC |
| MMSZ5237BT1 | 8.2V Zener Diode | DC |
| MC33063AD | DC to DC Converter | 45 KHz |
| MMDF2P02HDR2 | Dual P-channel FET | 45 KHz |
| MBRS340T3 | 3.0A Schottky Diode | 45 KHz |
| MC10ELT21D | PECL to TTL Converter | 3 MHz |
| MC10H641 | Octal ECL to TTL Clk Distributor | 19.6608 MHz |
| MC10EL16D | ECL Buffer | 19.6608 MHz |
| MC10EL58 | PECL Buffer | 19.6608 MHz |
| MMBT3906LT1 | PNP Transistor | 19.6608 MHz |

Broadband Tranceiver Card (BBX2)
(1.9 GHz BBX2 STL4011AA)
(continued)

Digital Module cont.

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|------------------------------|--|
| 74ABT125D | BiCMOS Hex Tri-state Buffer | DC 0.5 Hz 4.096 MHz |
| ISPLSI2032 | Lattice CPLD | .5Hz 3 MHz 19.6608 MHz 50 MHz |
| SG615HC | 50 MHz Crystal Oscillator | 50 MHz |
| 74HC4066 | Analog Mux | 3 MHz |
| 74ACT08 | Quad 2In And | DC 20 MHz |
| 74LCX244 | Octal Tri-State Buffer | 4.096 MHz 100Hz |
| MBR0530T1 | 0.5A Schottky Diode | 100Hz |
| MC68EN360ZP | QUICC | 20 MHz |
| DS1232S | Reset/Watchdog | 2 Hz |
| HSM636 | 20 MHz Crystal Oscillator | 20 MHz |
| 28F800CV | FLASH | 20 MHz |
| MCM518160 | DRAM | 20 MHz |

Broadband Tranceiver Card (BBX2)
(1.9GHZ BBX2 STLG4011AA)
(continued)

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|------------------------------|---------------------------------|
| SX02RH029DH01 | DTC ASIC | 0.5 Hz 19.6608 MHz 20 MHz |
| IDT74FCT162500ATPV | 18Bit Transceiver | 19.6608 MHz |
| MMBD7000LT1 | Dual Diode | DC |
| LT1081IS | RS-232 Transceiver | 9.6 KHz |
| MMSZ5243BT1 | Dual 13V Zener Diode | DC |

ADC Module

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|------------------------------|------------------------------|
| AD9059 | 8 Bit ADC | 9.8304 MHz 0 - 630 KHz |
| MMBD201LT1 | 30V Hot Carrier Diode | DC |

RF Control Module

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|------------------------------|------------------------------|
| MMBD201LT1 | 30V Hot Carrier Diode | DC |
| AD680AR | 2.5VDC Reference | DC |
| TLC5620 | Serial Quad DAC | DC |
| MC145041 | 11in Serial ADC | 0 - 630 KHz 1 MHz |

Multiple Channel CDMA (MCC-24E) Card: Issue O

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|---------------------------------|--|
| SG636PH-50MHz | XTAL OSC | X2 50 MHz |
| SG636PFT-20MHz | XTAL OSC | X1, X3 20 MHz |
| MTD20N03NDLT4 | N Ch FET 30V, 20A | Q1, Q2 ~275 kHz |
| MMBT3904LT1 | NPN Trans 40V .2A | Q3, Q4 DC |
| MBRS140T3 | Schottky Diode 1A, 40V | D1, D2 ~275 KHz |
| SY38157JU02 | EMAXX-II ASIC | U100,101,200,201 19.6608 MHz U300,301,400,401 19.6608 MHz U500,501,600,601 19.6608 MHz |
| LTC1435CS | Switching Regulator | U38 ~275 kHz |
| XC5204-6FQ160C | 4K Gate FPGA | U64 19.6608 MHz |
| XC5215-6FQ160C | 15K Gate FPGA | U67 4.096 MHz |
| XC9572-7PQ100C | 1.6K Gate ISP EPLD | U8,U16 ~8 MHz |
| XC9572-10PQ100C | 1.6K Gate ISP EPLD | U50,U51 ~22 MHz |
| DS1705ESA | Reset Controller | U3,U21,U44-U49 DC |
| 74LCX16500MEAX | 18Bit Trans Latch | U53,U54,U58,U59 19.6608 MHz |
| 74LCX16501MEAX | 18Bit Trans Latch | U63,U65,U68,U90 19.6608 MHz |
| MC68EN360ZP25 | Comm uP with Ethernet 25 MHz | U27 |
| DSP56167FV60 | Digital Signal Processor | U104,U204,U304 44 MHz U404,U504,U604 44 MHz |
| 74ACT00D | NAND Quad 2 Input | U10 DC |
| 74ACT02D | NOR Quad 2 Input | U17 DC |
| 74ACT08D | AND Quad 2 Input | U2,U39,U40,U41 DC |
| 74ACT14D | Hex Schmitt Trig | U20,U22 DC |
| 74ACT32D | OR Quad 2 Input | U56 DC |
| 74ACT74D | Dual FF | U1,U35,U36,U37 DC |
| 74ACT574DW | Oct D Flip/Flop | U52 DC |
| 74ACT541DW | Oct 3ST Line DRVR/CVR | U57 DC |
| 74ACT05D | Hex Inverter w/Opn DRN | U13 DC |

Multiple Channel CDMA (MCC-24E) Card: Issue O (continued)

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|------------------------------|------------------------------|
| MC10H641FN | PDECL-TTL 1:9 Clk Drvr | U60 19.6608 MHz |
| MC10EL16D | PDECL Receiver | U81,U83 19.6608 MHz |
| MC10EL58D | PDECL 2:1 Mux. | U82 19.6608 MHz |
| MC100ELT23D | PDECL to TTL Translator | U80 19.6608 MHz |
| MC88913D | Clk Driver | U26 50, 25 MHz |
| | | U55 20, 10 MHz |
| 74LCX244DT | Oct Line Driver | U66,U78,U88 4.096 MHz |
| 74LCX86DT | QUAD EOR 2 Input | U69-77, U84-87 |
| MCM6226BJ15 | SRAM 128Kx8 | U102,103,202,203 22 MHz |
| | | U302,303,402,403 22 MHz |
| | | U502,503,602,603 22 MHz |
| MCM518165BT60 | DRAM EDO 16Mx16 | U5,U12 ~8 MHz |
| 74ABT125D | Quad Buffer | U31,61,62,79 DC |
| 74FCT162501ATPV | 18Bit Transceiver | U25,U30 ~1.4 MHz |
| | | U28,29,32,33,34,43 DC |
| 74FCT162827BTPV | 20Bit Buffer | U23,U24 ~1.4 MHz |
| LXT907 APC | Ethernet Interface | U19 20.0 MHz |
| LT1081IS | RS232 XMTR RCVR | U9 ~9.6 kHz |
| X25020 | Serial 256x8 EEPROM | U18 DC |
| GAL26CV12C-7LJ | PAL | U89 19.6608 MHz |
| E28F008SC85 | FLASH 1MX8 | U6,U7,U14 ~1.4 MHz |

CDMA Clock Distribution (CCD) Module: Issue A or B

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|------------------------------|------------------------------|
| GAL22V10C-7LJ | PAL | U2 50 MHz |
| 2520N-50MHz | XTAL OSC | X1 50 MHz |
| MMBT3904 | NPN Transistor | Q1 DC |
| 74ACT04D | Hex Inverter | U1 DC |
| MC10EL16D | PDECL Receiver | U5,U8,U9 DC |
| | | U16 19.6608 MHz |
| MC10EL111FN | PDECL 1:9 Clk Driver | U13,U14,U15 19.6608 MHz |
| MC10EL23D | PDECL to TTL Translator | U6,U7,U10,U11 DC |
| | | U12 19.6608 MHz |
| DS1232S | Micro Power Monitor | U4 DC |
| X25020 | Serial 256x8 EEPROM | U3 DC |

Clock Synchronization Module (CSM2)

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|-------------------------------|-----------------------------------|
| MJD243RL | Q13, Q11, Q10, Q9, Q8, Q1 | 3 MHz |
| MJD2955T4 | Q15 | D.C. |
| MMFT3055V | Q17, Q18 | 307.2 KHz |
| MMBT3904 | Q19, Q14, Q12, Q7, Q5, Q4, Q2 | D.C. |
| MMBT3906 | Q6, Q3 | D.C. |
| MMBT3906 | Q16 | 307.2 KHz |
| 74ACT14D | U1 | 0.5 Hz |
| 74ACT14D | U75, U66, U65, U37 | 1 Hz |
| MC14538B | U10 | D.C. |
| IDT71024S15TY | U82, U81, U12, U11 | 16 MHz |
| 74ACT00D | U13 | 19.6608 MHz |
| 74ACT00D | U60 | D.C. |
| AM29F040 | U15, U14 | 16 MHz |
| AD817AR | U16 | 19.6608 MHz, 3 MHz |
| 74ACT245DW | U19, U17 | 1 Hz |
| AD9850 | U18 | 19.6608 MHz |
| MC68302FC | U2 | 16 MHz |
| XC5206-160 | U20 | 307.2 KHz, 19.6608 MHz, 10 MHz |
| AD7846JP | U24 | 1 Hz |
| MC10ELT21D | U25 | 10 MHz |
| MC78M12 | U26, U53 | D.C. |
| MC10E1651FN | U27 | 19.6608 MHz |
| LM317D | U28 | D.C. |
| MC78M15CDTRK | U29 | D.C. |
| LT1081IS | U3 | 130 KHz |
| MC79M15CDT | U30 | D.C. |
| MC100ELT23D | U31 | 19.6608 MHz |
| MC100ELT23D | U73, U72 | D.C. |

Clock Synchronization Module (CSM2)

(continued)

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|------------------------------|------------------------------|
| MC100ELT23D | U36, U35 | 19.6608 MHz |
| MC100ELT23D | U78, U77 | 3 MHz |
| LT1054IS | U32 | 25 kHz |
| MC10EL16D | U33 | 19.6608 MHz |
| GAL22V10B-7LJ | U34 | 50 MHz |
| 74ACT74D | U38 | 9.8304 MHz |
| X25020 | U4 | D.C. |
| 78ST305HC | U40 | 1 MHz |
| 10H20EV8 | U41 | 50 MHz |
| MC10EL07D | U49, U43 | 19.6608 MHz |
| MC10EL51D | U52, U50, U45, U44 | D.C. |
| MC10EL51D | U55 | 0.5 Hz |
| MC10EL31D | U56, U51, U46 | D.C. |
| 75175D | U74, U59 | 8000 Hz |
| 75175D | U76, U47 | 4800 Hz |
| 75175D | U79 | 9600 Hz |
| MC10EL04D | U57, U48 | D.C. |
| 74ACT05D | U5 | D.C. |
| 75172BDW | U67, U54 | 4800 Hz |
| 75172BDW | U71 | 0.5 Hz |
| MC10EL16D | U62, U61, U58 | D.C. |
| MC10EL16D | U63 | 19.6608 MHz |
| MC10EL16D | U64 | D.C. |
| DS1232S | U6 | D.C. |
| MC10EL111FN | U68 | 0.5 Hz |
| MC10EL111FN | U69 | D.C. |
| MC10EL111FN | U70 | 19.6608 MHz |

Clock Synchronization Module (CSM2)

(continued)

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|------------------------------|------------------------------|
| MC68681FN | U7 | 4 MHz, 9600 Hz |
| 74ACT32D | U8 | 16 MHz |
| MC34025 | U83 | 307.2 MHz |
| 78M05 | U84 | D.C. |
| 74ACT04D | U9 | 16 MHz |
| MA505-16MHz | Y1 | 16.0 MHz |
| 19.6608 MHz VCXO | Y2 | 19.6608 MHz |
| SG615H-50MHz | Y3 | 50 MHz |

Switchboard 1900 MHz (STLG4009A)

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|--|------------------------------|
| MMBZ5231BL | 5.1V Zener Voltage Regulator Diode | DC |
| MMBT3904 | NPN Transist | DC |
| MC33161 | Universal Voltage Monitor | DC |
| MC33063 | Switching Regulator | 40 kHz |
| MMDF2P02HD | P-Channel MOSFET | 40 kHz |
| MBRS340T3 | Schottky Power Rectifier (1A) | 40 kHz |
| MIC2920A-5.0BS | Low-Dropout Voltage Regulator (0.4A) | DC |
| MIC2940A | Low-Dropout Voltage Regulator (1.25A) | DC |
| MIC5205-3.3BM5 | Low-Dropout Voltage Regulator (150mA) | DC |
| MIC2941ABU | Low-Dropout Variable Voltage Regulator (200mA) | DC |
| MBR0530T1 | Schottky Power Rectifier (0.5A) | DC |
| 74LCX244 | Low-Voltage CMOS Octal Buffer | DC |
| MMBD7000 | Dual Switching Diode | DC |
| pLSI2032 | Programmable Logic Device | DC |
| 25020 | Serial E ² PROM | 100 kHz |
| 74ACT04 | Hex Inverter | DC |
| 74ACT00 | Hex NAND Gate | DC |
| BRPG1204 | Red-Green LED | DC |
| LM2901 | Quad Comparator | DC |
| HMC182S14 | GaAs SP4T Terminated Switch | 1800 - 2000 MHz |
| SW338 | GaAs SPDT Terminated Switch | 1800 - 2000 MHz |
| HMC183QS24 | GaAs SP8T Terminated Switch | 1800 - 2000 MHz |
| SW419 | GaAs SP4T Terminated Switch | 1800 - 2000 MHz |
| SNA-486 | GaAs FET MMIC (100mA) RF Amplifier | 1900 - 2000 MHz |

High Stability Oscillator (HSO)

| <u>Device Type</u> | <u>Component Description</u> | <u>Operating Frequencies</u> |
|--------------------|------------------------------|---|
| SN74AC240DW | LINE DRIVER | 1 HZ |
| X2502OS | EEPROM | 9.6 kHz |
| DS3695AM | RS485 DRIVER | 1 HZ |
| FE5680A | Rb MODULE | 500 HZ 8.388608 MHz 38 MHz 50.255 MHz 100.51 MHz 6.8 GHZ |