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| Prepared (also subject responsible if other) ERA/RKF/VR Larry Lindström | | No. B5KPROJ1192211-1 | | |
| Approved KI/ERA/RKF/VR (L Lindström) | Checked | Date 2002-11-20 | Rev A | Reference |

Exhibit 10 – Components, Tune Up

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1 2.1033 (c) (10) Function of Active Circuit Devices

1.1 Transceiver TRXB WCDMA ROJ 119 2211/1

1.1.1 Printed Board ROJ 119 2211/1

Product
ROJ 119 2211/1
Revision D

| Pos | Prod name/Des | Product number |
|-------|---|------------------|
| D1 | MICROCIRCUIT/74'16244 LVTH TSSOP48 16x BUFF | RYT 329 6001/C |
| D4 | MICROCIRCUIT/10K100E-2 3.3V C=0/70 | RYT 141 6011/C |
| D5 | MICROCIRCUIT/FLASH TB 2M16 90NS 3.3V I | RYT 118 6152/6 |
| D6 | MICROCIRCUIT/FLASH TB 2M16 90NS 3.3V I | RYT 118 6152/6 |
| D8 | MICROCIRCUIT/PPC403GCX-80 | RYT 123 6046/4C |
| D10 | ASIC/SPIC-MZ | ROP 101 1149/2 |
| D12 | MICROCIRCUIT/DRAM EDO 4M16 50NS 3.3V C | RYT 119 6056/1 |
| D13 | MICROCIRCUIT/DRAM EDO 4M16 50NS 3.3V C | RYT 119 6056/1 |
| D14 | MICROCIRCUIT/7128AE-7 3.3V C=0/70 | RYT 141 6006/4C |
| D15 | MICROCIRCUIT/74'14 Z1G SOT23-5 1X SCHMITT I | RYT 326 6014/41C |
| D16 | OSCILLATOR/19.44 MHz | RTL 201 629/24 |
| D20 | MICROCIRCUIT/FLASH TB 2M16 90NS 3.3V I | RYT 118 6152/6 |
| D21 | MICROCIRCUIT/FLASH TB 2M16 90NS 3.3V I | RYT 118 6152/6 |
| D96 | MICROCIRCUIT/DRAM EDO 4M16 50NS 3.3V C | RYT 119 6056/1 |
| D97 | MICROCIRCUIT/DRAM EDO 4M16 50NS 3.3V C | RYT 119 6056/1 |
| D98 | MICROCIRCUIT/74'02 Z1G SSOP5-P-A 1x 2-INP N | RYT 326 6002/42C |
| D1001 | PRODUKTANPASS. KRETS/ASIC SURVEYOR_2, TRX-DIG | ROP 101 25/2 |
| D1002 | MICROCIRCUIT/74'16374 LVTH TSSOP48 16x D-TY | RYT 329 6004/C |
| D1003 | MICROCIRCUIT/74'16374 LVTH TSSOP48 16x D-TY | RYT 329 6004/C |
| D1004 | MICROCIRCUIT/74'16244 LVTH TSSOP48 16x BUFF | RYT 329 6001/C |
| D1005 | MICROCIRCUIT/ECL TRANSLATOR LVPECL:LVTTL x2 | RYT 407 6008/C |
| D1006 | MICROCIRCUIT/74'74 LVT TSSOP14 2xD FLIP-FLO | RYT 329 0074/C |
| D2080 | MICROCIRCUIT/74'04 Z1G SSOP5-P-A 1x INVERTE | RYT 326 6004/42C |
| D2180 | MICROCIRCUIT/74'04 Z1G SSOP5-P-A 1x INVERTE | RYT 326 6004/42C |
| D2600 | MICROCIRCUIT/10-bit serial AD conv. 0.5LSB | RYT 120 6070/1 |
| D2602 | FILTER/1960MHz BP | RTN 202 814/02 |
| D2603 | MICROCIRCUIT/OPAMP x2 3.6-16V 1.40MHz | RYT 101 6043/2C |
| D2604 | FILTER/1946.5MHz BP | RTN 202 1007/02 |
| D2605 | FILTER/1973.5MHz BP | RTN 202 1008/02 |
| D2700 | MICROCIRCUIT/10-bit serial AD conv. 0.5LSB | RYT 120 6070/1 |
| D2702 | FILTER/1960MHz BP | RTN 202 814/02 |
| D2704 | FILTER/1946.5MHz BP | RTN 202 1007/02 |

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| Approved | Checked | Date | Rev | Reference |
| KI/ERA/RKF/VR (L Lindström) | | 2002-11-20 | A | |

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|-------|--|-----------------|
| D2705 | FILTER/1973.5MHz BP | RTN 202 1008/02 |
| D2706 | MICROCIRCUIT/OPAMP x2 3.6-16V 1.40MHz | RYT 101 6043/2C |
| D3000 | MICROCIRCUIT/Amplifier. GaAs MMIC | RYT 101 6479/2 |
| D3001 | FILTER/1880MHz BP | RTN 202 1006/02 |
| D3002 | MIXER/SYM-20DHW | RYT 901 6170/1 |
| D3010 | MICROCIRCUIT/Amplifier. GaAs MMIC | RYT 101 6479/2 |
| D3011 | FILTER/1880MHz BP | RTN 202 1006/02 |
| D3012 | MIXER/SYM-20DHW | RYT 901 6170/1 |
| D3301 | FILTER/208MHz BP SAW | RTN 201 402/01 |
| D3302 | FILTER/208MHz BP SAW | RTN 201 402/01 |
| D3303 | ASIC KIRKE VER 1 | ROP 101 10/1 |
| D3600 | MICROCIRCUIT/100ELT22 TTL/PECL TRANSLATOR | RYT 407 1012/2C |
| D6101 | MICROCIRCUIT/74'04 AC SOP14 6X1 INVERTER | RYT 318 0004/C |
| D6110 | MICROCIRCUIT/74HC04 | RYT 306 2007/C |
| D6111 | MICROCIRCUIT/74HC04 | RYT 306 2007/C |
| D6170 | MICROCIRCUIT/ECL TRANSLATOR LVTTTL:LVPECL x2 | RYT 407 6007/C |
| D6171 | MICROCIRCUIT/100LVEL32 DIVIDER :2 | RYT 407 1023/3C |
| D6200 | MICROCIRCUIT/74HC04 | RYT 306 2007/C |
| D6302 | MICROCIRCUIT/161 MHz synth | RYT 901 6162/2 |
| D6303 | MICROCIRCUIT/SI-MMIC-AMPLIFIER, SMD (PLAST) | RYT 101 274/17C |
| D6400 | MICROCIRCUIT/SI-MMIC-AMPLIFIER, SMD (PLAST) | RYT 101 274/17C |
| D6401 | MICROCIRCUIT/272.64 MHz | RYT 902 6033/2 |
| D6402 | MICROCIRCUIT/SI-MMIC-AMPLIFIER, SMD (PLAST) | RYT 101 274/17C |
| D7100 | MICROCIRCUIT/LVDS SERIALIZER 10-BIT SS0P28 | RYT 109 6143/C |
| D7101 | MICROCIRCUIT/LVDS QUAD LINE RECEIVER | RYT 109 127/5C |
| D7102 | MICROCIRCUIT/LVDS QUAD LINE RECEIVER | RYT 109 127/5C |
| D7103 | MICROCIRCUIT/LVDS SERIALIZER 10-BIT SS0P28 | RYT 109 6143/C |
| D7104 | MICROCIRCUIT/LVDS QUAD LINE RECEIVER | RYT 109 127/5C |
| D7105 | MICROCIRCUIT/BLVDS CLK BUFFER/TRANSC 1:6 TS | RYT 109 6191/C |
| D7106 | MICROCIRCUIT/BLVDS CLK BUFFER/TRANSC 1:6 TS | RYT 109 6191/C |
| H1 | LED RED SMD, SIDELED, RED | RKZ 433 25/3 |
| H2 | LED GREEN SMD, SIDELED, PURE G | RKZ 433 25/4 |
| H3 | LED YE SMD, SIDELED, YELLOW | RKZ 433 25/2 |
| N2 | MICROCIRCUIT/LM4041C REFERENCE | RYT 113 045/2C |
| N9 | MICROCIRCUIT/SUP.V 3.08V +/-2.3% L/HI RESET | RYT 113 6065/7 |
| N2000 | MICROCIRCUIT/14BIT 125MSPS D/A CONVERTER | RYT 120 6074/2 |
| N2100 | MICROCIRCUIT/14BIT 125MSPS D/A CONVERTER | RYT 120 6074/2 |
| N2300 | MICROCIRCUIT/AH1-1, selekterad AH1 | RYT 101 6898/2 |
| N2301 | ASIC GUTE | ROP 101 1147/1 |
| N2302 | ASIC GRAIP | ROP 101 1148/2 |
| N2350 | MICROCIRCUIT/AH1-1, selekterad AH1 | RYT 101 6898/2 |
| N2351 | ASIC GUTE | ROP 101 1147/1 |
| N2352 | ASIC GRAIP | ROP 101 1148/2 |
| N2600 | DIRECTION COUPLER/1960MHz 19dB coupler | UND 106 084/1 |
| N2601 | MICROCIRCUIT/AH1-1, selekterad AH1 | RYT 101 6898/2 |

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|-------|---|----------------|
| N2602 | MICROCIRCUIT/MGA-82563 | RYT 101 6868/1 |
| N2604 | MICROCIRCUIT/DS1620 DIG TERM 2.7-5.5V | RYT 124 004/2C |
| N2605 | MICROCIRCUIT/AD8313 | RYT 101 6976/1 |
| N2606 | MICROCIRCUIT/LIN REG 3.3V 150mA 0.575V | RYT 113 6110/C |
| N2607 | MICROCIRCUIT/LIN REG 3.3V 150mA 0.575V | RYT 113 6110/C |
| N2608 | MICROCIRCUIT/SW -395 | RYT 101 6464/1 |
| N2609 | MICROCIRCUIT/SW -395 | RYT 101 6464/1 |
| N2610 | MICROCIRCUIT/MGA-82563 | RYT 101 6868/1 |
| N2700 | DIRECTION COUPLER/1960MHz 19dB coupler | UND 106 084/1 |
| N2701 | MICROCIRCUIT/AH1-1, selekterad AH1 | RYT 101 6898/2 |
| N2702 | MICROCIRCUIT/MGA-82563 | RYT 101 6868/1 |
| N2703 | MICROCIRCUIT/LIN REG 3.3V 150mA 0.575V | RYT 113 6110/C |
| N2704 | MICROCIRCUIT/LIN REG 3.3V 150mA 0.575V | RYT 113 6110/C |
| N2705 | MICROCIRCUIT/AD8313 | RYT 101 6976/1 |
| N2706 | MICROCIRCUIT/SW -395 | RYT 101 6464/1 |
| N2707 | MICROCIRCUIT/SW -395 | RYT 101 6464/1 |
| N2708 | MICROCIRCUIT/MGA-82563 | RYT 101 6868/1 |
| N3020 | MICROCIRCUIT/MGA-82563 | RYT 101 6868/1 |
| N3030 | MICROCIRCUIT/MGA-82563 | RYT 101 6868/1 |
| N3301 | AMPLIFIER/MSA-2743 | RYT 101 6474/1 |
| N3302 | AMPLIFIER/MSA-2743 | RYT 101 6474/1 |
| N3310 | MICROCIRCUIT/DS1620 DIG TERM 2.7-5.5V | RYT 124 004/2C |
| N3600 | MICROCIRCUIT/12-BIT,66MSPS,A/D CONVERTER | RYT 120 6069/1 |
| N3601 | MICROCIRCUIT/12-BIT,66MSPS,A/D CONVERTER | RYT 120 6069/1 |
| N5000 | OPTOCIRCUIT/CTR>100% 30V 2.5kV SO8 | RYR 353 606/2 |
| N5001 | MICROCIRCUIT/DC/DC-conv. 48/5V, 25W | RYT 913 260/1 |
| N5002 | MICROCIRCUIT/DC/DC 48V/3.3V 3A | RYT 913 6003/1 |
| N5003 | HYBRIDE CIRCUIT/DC/DC conv 48V/1.8V 5A | RYT 913 6003/2 |
| N5004 | MICROCIRCUIT/REG LIN ADJ +/-9.7% 5A 0.37V | RYT 113 6195/1 |
| N6100 | MICROCIRCUIT/MB15A02PFV | RYT 102 6088/1 |
| N6101 | OSCILLATOR/61.44 MHz SMD | RTL 202 627/02 |
| N6200 | MICROCIRCUIT/MB15A02PFV | RYT 102 6088/1 |
| N6201 | OSCILLATOR/10 MHz SMD | RTL 202 628/02 |
| N6300 | MICROCIRCUIT/REG LIN 4.20V 150mA 0.165V | RYT 113 6156/3 |
| N6400 | DIRECTION COUPLER/273MHz 3dB | UND 106 086/1 |
| N6401 | MICROCIRCUIT/REG LIN 4.20V 150mA 0.165V | RYT 113 6156/3 |
| N6500 | MICROCIRCUIT/1672 MHz RF-synth. | RYT 902 6031/1 |
| N6501 | DIRECTION COUPLER/1600MHz 3dB | UND 106 085/1 |
| N6502 | MICROCIRCUIT/MGA-82563 | RYT 101 6868/1 |
| N6503 | MICROCIRCUIT/REG LIN 4.20V 150mA 0.165V | RYT 113 6156/3 |
| N6505 | MICROCIRCUIT/MGA-81563 | RYT 101 6873/1 |
| N6600 | MICROCIRCUIT/1672 MHz RF-synth. | RYT 902 6031/1 |
| N6601 | DIRECTION COUPLER/1600MHz 3dB | UND 106 085/1 |
| N6602 | MICROCIRCUIT/MGA-82563 | RYT 101 6868/1 |
| N6603 | MICROCIRCUIT/REG LIN 4.20V 150mA 0.165V | RYT 113 6156/3 |

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| N6605 | MICROCIRCUIT/MGA-81563 | RYT 101 6873/1 |
| N7005 | MICROCIRCUIT/DIG.TEMP.SENSOR 2 WIRE INT | RYT 124 6018/1 |
| T2000 | TRANSFORMER/0.4 TO 800 MHZ SMD | REG 735 22/5 |
| T2100 | TRANSFORMER/0.4 TO 800 MHZ SMD | REG 735 22/5 |
| T2300 | TRANSFORMER/SMD TRANSFORMER 4:1 | REG 135 55/1 |
| T2301 | TRANSFORMER/SMD TRANSFORMER 4:1 | REG 135 55/1 |
| T2302 | TRANSFORMER/SMD TRANSFORMER 4:1 | REG 135 55/1 |
| T2303 | BALUN/2140 MHZ | REG 735 58/7 |
| T2304 | BALUN/1742 MHZ | REG 735 58/6 |
| T2350 | TRANSFORMER/SMD TRANSFORMER 4:1 | REG 135 55/1 |
| T2351 | TRANSFORMER/SMD TRANSFORMER 4:1 | REG 135 55/1 |
| T2352 | TRANSFORMER/SMD TRANSFORMER 4:1 | REG 135 55/1 |
| T2353 | BALUN/2140 MHZ | REG 735 58/7 |
| T2354 | BALUN/1742 MHZ | REG 735 58/6 |
| T3303 | TRANSFORMER/SMD TRANSFORMER 4:1 | REG 135 55/1 |
| T3600 | TRANSFORMER/SMD TRANSFORMER 4:1 | REG 135 55/1 |
| T3601 | TRANSFORMER/SMD TRANSFORMER 4:1 | REG 135 55/1 |
| V1 | TRANSISTOR/NPN 65V 100mA SOT23 | RYN 121 37/2 |
| V2 | TRANSISTOR/NPN 65V 100mA SOT23 | RYN 121 37/2 |
| V3 | TRANSISTOR/NPN 65V 100mA SOT23 | RYN 121 37/2 |
| V3020 | DIODE/SWix2 70V 0.2A SOT23 6ns | RKZ 123 03/1 |
| V3030 | DIODE/SWix2 70V 0.2A SOT23 6ns | RKZ 123 03/1 |
| V5000 | REFERENCE DIODE/REC 600V 3A SMC | RKZ 123 465/2 |
| V5001 | REFERENCE DIODE/REC 600V 3A SMC | RKZ 123 465/2 |
| V5002 | TRANSISTOR/NPN 45V 100mA SOT23 | RYN 121 629/1 |
| V5003 | TRANSISTOR/NPN 45V 100mA SOT23 | RYN 121 629/1 |
| V5004 | TRANSISTOR/NFET 100V 35A D2PAK 0.045ohm | RYN 123 6010/1 |
| V5005 | REGULATION DIODE/REG 5.6V 7% 0.2W SOT-23 | RKZ 223 01/10 |
| V5009 | REFERENCE DIODE/REC 600V 3A SMC | RKZ 123 465/2 |
| V5010 | REFERENCE DIODE/REC 600V 3A SMC | RKZ 123 465/2 |
| V5011 | TRANSISTOR/NPN 45V 100mA SOT23 | RYN 121 629/1 |
| V5012 | TRANSISTOR/NPN 45V 100mA SOT23 | RYN 121 629/1 |
| V6100 | DIODE/SCHx2 70V 70mA SOT23 Common ca | RKZ 323 08/1 |
| V6200 | DIODE/SCHx2 70V 70mA SOT23 Common ca | RKZ 323 08/1 |
| V6500 | DIODE/SWix2 70V 0.2A SOT23 6ns | RKZ 123 03/1 |
| V6600 | DIODE/SWix2 70V 0.2A SOT23 6ns | RKZ 123 03/1 |
| V6700 | DIODE/SCHx2 70V 70mA SOT23 Common ca | RKZ 323 08/1 |
| V6800 | DIODE/SCHx2 70V 70mA SOT23 Common ca | RKZ 323 08/1 |

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1.2 Multi Carrier Power Amplifier MCPA WCDMA KRB 901 02/3

1.2.1 Power Amplifier Block KRY 901 001/1

1.2.1.1 Printed Board MCPA First Stage 1900 WCDMA ROA 117 8766/1

Product
ROA 117 8766/1
Revision A

| Pos | Prod name/Des | Product number |
|-----|--|-----------------|
| AR1 | MICROCIRCUIT/ | RYT 101 6467/2 |
| AR2 | MICROCIRCUIT/ | RYT 101 6467/2 |
| AR3 | MICROCIRCUIT/ | RYT 101 6467/2 |
| AT1 | ATTENUATOR 3/6DB SMD, TEMP. COEFF. -0.009 | UMF 101 207/6 |
| AT2 | ATTENUATOR/Temp. -variable 3db atten. | UMF 901 04/3 |
| AT3 | MICROCIRCUIT/AV132-315 voltage controled (0 | RYT 115 6040/1 |
| CR1 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| CR2 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| CR3 | DIODE/E100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| CR4 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| CR5 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| CR6 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| FL1 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL2 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL3 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL4 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL5 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL6 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL7 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| HY1 | DIRECTION COUPLER/3DB, 90 DEG | UND 103 46/1 |
| HY2 | DIRECTION COUPLER/3DB, 90 DEG | UND 103 46/1 |
| HY3 | DIRECTION COUPLER/1.7-2GHz 100W LCC 014.4x8.9x2. | UND 106 079/1 |
| HY4 | DIRECTION COUPLER/1.7-2GHz 100W LCC 014.4x8.9x2. | UND 106 079/1 |
| N2 | MICROCIRCUIT/REG LIN+ 8.0V +/-3.75% 500mA 2 | RYT 113 6041/1C |
| N3 | MICROCIRCUIT/REG LIN+ 8.0V +/-3.75% 500mA 2 | RYT 113 6041/1C |
| N4 | REGULATOR/REG LIN+ 5.0V +/-4% 100mA 1.7V | RYT 113 6018/1C |
| N5 | REGULATOR/REG LIN+ 5.0V +/-4% 100mA 1.7V | RYT 113 6018/1C |

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1.2.1.2 Printed Board MCPA Second Stage 1900 WCDMA ROA 117 8810/1

Product
ROA 117 8810/1
Revision B

| Pos | Prod name/Des | Product number |
|-----|--|-----------------|
| AR1 | MICROCIRCUIT/AH1 | RYT 101 6898/1 |
| AR2 | MICROCIRCUIT/ | RYT 101 6467/2 |
| AR3 | MICROCIRCUIT/ | RYT 101 6467/2 |
| AT1 | ATTENUATOR 3/6DB SMD, TEMP. COEFF. -0.009 | UMF 101 207/6 |
| AT2 | ATTENUATOR/Temp. -variable 3db atten. | UMF 901 04/3 |
| AT3 | MICROCIRCUIT/AV132-315 voltage controled (0 | RYT 115 6040/1 |
| CR1 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| CR2 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| CR3 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| CR4 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| CR5 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| CR6 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| FL1 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL2 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL3 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL4 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL5 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL6 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| FL7 | EMI FILTER/2A 100VDC 3300pF | REG 706 264/33 |
| HY1 | DIRECTION COUPLER/3DB, 90 DEG | UND 103 46/1 |
| HY2 | DIRECTION COUPLER/3DB, 90 DEG | UND 103 46/1 |
| HY3 | DIRECTION COUPLER/1.7-2GHz 100W LCC 014.4x8.9x2. | UND 106 079/1 |
| HY4 | DIRECTION COUPLER/1.7-2GHz 100W LCC 014.4x8.9x2. | UND 106 079/1 |
| N2 | MICROCIRCUIT/REG LIN+ 8.0V +/-3.75% 500mA 2 | RYT 113 6041/1C |
| N3 | MICROCIRCUIT/REG LIN+ 8.0V +/-3.75% 500mA 2 | RYT 113 6041/1C |
| N4 | REGULATOR/REG LIN+ 5.0V +/-4% 100mA 1.7V | RYT 113 6018/1C |
| N5 | REGULATOR/REG LIN+ 5.0V +/-4% 100mA 1.7V | RYT 113 6018/1C |

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| Approved | Checked | Date | Rev | Reference |
| KI/ERA/RKF/VR (L Lindström) | | 2002-11-20 | A | |

1.2.1.3 Printed Board MCPA Third Stage 1900 WCDMA ROA 117 8811/1

Product
ROA 117 8811/1
Revision A

| Pos | Prod name/Des | Product number |
|------|---|-----------------|
| N101 | MICROCIRCUIT/TEMP SENSOR, SOT-23, LM50C | RYT 124 6009/C |
| N102 | MICROCIRCUIT/MOTOROLA MC78M05CDT | RYTR 113 4008/C |
| Z101 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| Z102 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| Z103 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| Z104 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| Z105 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |
| Z106 | DIODE/100V DOUBLE SW, IN SERIES | RKZ 123 10/1 |

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| Prepared (also subject responsible if other) ERA/RKF/VR Larry Lindström | | No. B5KPROJ1192211-1 | | |
| Approved KI/ERA/RKF/VR (L Lindström) | Checked | Date 2002-11-20 | Rev A | Reference |

1.2.1.4 Power Amplifier Block KRY 901 001/1

Product
KRY 901 001/1
Revision A

| Pos | Prod name/Des | Product number |
|------|--|----------------|
| V101 | TRANSISTOR/MRF19125 MOSFET 1.9 - 2GHz | RYN 123 1644/1 |
| V102 | TRANSISTOR/MRF19125 MOSFET 1.9 - 2GHz | RYN 123 1644/1 |
| V103 | TRANSISTOR/MRF19125 MOSFET 1.9 - 2GHz | RYN 123 1644/1 |
| T101 | DIRECTION COUPLER/4E3006 | UND 106 069/2 |
| T102 | DIRECTION COUPLER/4E3006 | UND 106 069/2 |
| V401 | TRANSISTOR/MRF19030 , RF Power FET | RYN 123 1642/1 |
| V402 | TRANSISTOR/MRF19030 , RF Power FET | RYN 123 1642/1 |
| V403 | TRANSISTOR/MRF19030 , RF Power FET | RYN 123 1642/1 |
| V404 | TRANSISTOR/MRF19030 , RF Power FET | RYN 123 1642/1 |
| V405 | TRANSISTOR/MRF19045 | RYN 123 1619/1 |
| V406 | TRANSISTOR/MRF19045 | RYN 123 1619/1 |
| | Printed Board MCPA First Stage 1900 WCDMA | ROA 117 8766/1 |
| | Printed Board MCPA Second Stage 1900 WCDMA | ROA 117 8810/1 |
| | Printed Board MCPA Third Stage 1900 WCDMA | ROA 117 8811/1 |

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| Prepared (also subject responsible if other) ERA/RKF/VR Larry Lindström | | No. B5KPROJ1192211-1 | | |
| Approved KI/ERA/RKF/VR (L Lindström) | Checked | Date 2002-11-20 | Rev A | Reference |

1.2.2 MCPA Control Unit Block KRY 112 64/3

1.2.2.1 MCPA Control Stage 1 1900 WCDMA ROA 117 8497/1

Product
ROA 117 8497/1
Revision A

| Pos | Prod name/Des | Product number |
|-----|---|------------------|
| D1 | MICROCIRCUIT/A/D-converter, 8-ch, 12-bit | RYT 120 248/3C |
| D2 | MICROCIRCUIT/SMP04ES SAMPLE AND HOLD AMPL | RYT 130 008/C |
| D3 | MICROCIRCUIT/SMP04ES SAMPLE AND HOLD AMPL | RYT 130 008/C |
| D4 | MICROCIRCUIT/SMP04ES SAMPLE AND HOLD AMPL | RYT 130 008/C |
| D5 | MICROCIRCUIT/OPAMP x2 3V R/R 110MHz | RYT 101 150/3 |
| D6 | MICROCIRCUIT/16ch Analog Mux | RYT 122 6001/1 |
| D7 | MICROCIRCUIT/A/D converter, AD9223AR | RYT 120 6029/1 |
| D8 | MICROCIRCUIT/12-BIT D/A x4 2.5V R/R O=// | RYT 120 6077/1 |
| D9 | MICROCIRCUIT/12-BIT D/A x4 2.5V R/R O=// | RYT 120 6077/1 |
| D10 | MICROCIRCUIT/12-BIT D/A x4 2.5V R/R O=// | RYT 120 6077/1 |
| D11 | MICROCIRCUIT/12-BIT D/A x4 2.5V R/R O=// | RYT 120 6077/1 |
| D12 | MICROCIRCUIT/FLASH 512K16 95NS 2.7V B I | RYT 118 6142/1 |
| D13 | MICROCIRCUIT/REG LIN+ 8.0V +/-3.75% 100mA 1 | RYT 113 6018/4C |
| D14 | MICROCIRCUIT/SRAM 256K16 10NS 3.3V C | RYT 119 6059/2 |
| D15 | MICROCIRCUIT/QUADR. 2-INPUT POS. NOR GATE | RYTR 335 002/C |
| D16 | MICROCIRCUIT/LMC6484 QUAD OPAMP | RYT 101 064/2C |
| D17 | MICROCIRCUIT/LMC6484 QUAD OPAMP | RYT 101 064/2C |
| D18 | MICROCIRCUIT/LMC6484 QUAD OPAMP | RYT 101 064/2C |
| D19 | MICROCIRCUIT/ST16C2550 DUAL UART with FIFO | RYT 121 6088/C |
| D20 | MICROCIRCUIT/MAX706 | RYT 113 036/C |
| D21 | MICROCIRCUIT/DSP 320LC549 80MIPS | RYT 134 6015/C |
| D22 | MICROCIRCUIT/2128VE 3.3V 100MHz C=0/70 | RYT 141 6016/C |
| D23 | MICROCIRCUIT/2128VE 3.3V 100MHz C=0/70 | RYT 141 6016/C |
| D24 | MICROCIRCUIT/74'04 AHC1G SSOP5-P-A 1x INVER | RYT 326 6004/32C |
| D25 | MICROCIRCUIT/QUADR. 2-INPUT POS. NOR GATE | RYTR 335 002/C |
| D26 | MICROCIRCUIT/74LCX245 8 X BUS TRANSCEIVER T | RYT 334 0245/2C |
| D28 | MICROCIRCUIT/IC LM 2903 DUAL COMP | RYT 101 034/C |
| G2 | OSCILLATOR/11.0592 MHz SMD 5x7mm | RTL 201 629/26 |
| V2 | MICROCIRCUIT/REFERENCE 5.0V +/-0.2% SOT-23 | RYT 113 481/10 |

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| Prepared (also subject responsible if other) ERA/RKF/VR Larry Lindström | | No. B5KPROJ1192211-1 | | |
| Approved KI/ERA/RKF/VR (L Lindström) | Checked | Date 2002-11-20 | Rev A | Reference |

1.2.2.2 M CPA Control Stage 2 1900 WCDMA ROA 117 8633/1

Product
ROA 117 8633/1
Revision B

| Pos | Prod name/Des | Product number |
|-----|---|------------------|
| B1 | CRYSTAL/3.6864MHZ | RTM 501 627/01 |
| D1 | MICROCIRCUIT/74LCX16244 16-BIT BUFFER/LINE | RYT 334 1244/C |
| D6 | MICROCIRCUIT/FLASH TB 2M16 90NS 3.3V I | RYT 118 6152/4 |
| D8 | MICROCIRCUIT/PPC403GCX-80 | RYT 123 6046/4C |
| D11 | OSCILLATOR/PXO 38.880MHz +/-100ppm 3.3V CM | RTL 201 028/11 |
| D13 | MICROCIRCUIT/DRAM EDO 4M16 50NS 3.3V C | RYT 119 6056/1 |
| D14 | MICROCIRCUIT/7512AE-10 3.3V C= -40/+85 | RYT 141 6015/4C |
| D15 | MICROCIRCUIT/RS485 TRANSC FD x1 3.3V SOP14 | RYT 109 6153/2C |
| D16 | MICROCIRCUIT/74'14 Z1G SOT23-5 1X SCHMITT I | RYT 326 6014/41C |
| D17 | MICROCIRCUIT/ST16C2550 DUAL UART with FIFO | RYT 121 6088/C |
| D18 | MICROCIRCUIT/74HC04 | RYT 306 2007/C |
| D20 | MICROCIRCUIT/RS232 TRANSC 2+2 3.3V SSOP20 / | RYT 109 6081/C |
| D21 | MICROCIRCUIT/DIG.TEMP.SENSOR 2 WIRE INT | RYT 124 6018/1 |
| H1 | LED YE SMD, SIDELED, YELLOW | RKZ 433 25/2 |
| H2 | LED RED SMD, SIDELED, RED | RKZ 433 25/3 |
| H3 | LED RED SMD, SIDELED, PURE GREEN | RKZ 433 25/4 |
| N9 | MICROCIRCUIT/SUP.V 3.08V +/-2.3% L/HI RESET | RYT 113 6065/7 |
| T1 | TRANSISTOR/NPN 45V 100mA SOT23 | RYN 121 629/1 |
| T2 | TRANSISTOR/NPN 45V 100mA SOT23 | RYN 121 629/1 |
| T3 | TRANSISTOR/NPN 45V 100mA SOT23 | RYN 121 629/1 |

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| Prepared (also subject responsible if other) ERA/RKF/VR Larry Lindström | | No. B5KPROJ1192211-1 | | |
| Approved KI/ERA/RKF/VR (L Lindström) | Checked | Date 2002-11-20 | Rev A | Reference |

1.2.2.3 Printed B. MCPA Radio Control 1900 WCDMA ROA 128 0185/1

Product
ROA 128 0185/1
Revision A

| Pos | Prod name/Des | Product number |
|------|---|-----------------|
| N301 | Delay line 11.3ns | UMJ 103 202/02 |
| Q200 | Coupler Directional, 10db, Chi | UND 106 10/2 |
| Q201 | Coupler Directional, 03db, Chi | UND 106 10/1 |
| Q202 | MICROCIRCUIT/ | RYT 101 6467/2 |
| Q203 | MICROCIRCUIT/OPAMP x2 3.3V R/R | RYT 101 6336/1 |
| Q204 | MIKROKRETS/ADJ 3A VOLT REG WITH ON/OFF | RYT 113 6186/1 |
| Q205 | MICROCIRCUIT/REG LIN+ 3.3V 100mA 0.375V | RYT 113 6095/4 |
| Q206 | TRANSISTOR/NPN 30V 100mA SOT323 | RYN 121 692/1 |
| Q207 | TRANSISTOR/PNP 30V 100mA SOT323 | RYN 120 625/1 |
| Q300 | Coupler, Directional, High Iso | UND 106 09/1 |
| Q301 | Coupler, Directional, High Iso | UND 106 09/1 |
| Q302 | Coupler, Directional, High Iso | UND 106 09/1 |
| Q500 | Coupler Directional, 10db, Chi | UND 106 10/2 |
| Q501 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q502 | MICROCIRCUIT/ | RYT 101 6467/2 |
| Q503 | TRANSISTOR/NPN 30V 100mA SOT323 | RYN 121 692/1 |
| Q504 | TRANSISTOR/PNP 30V 100mA SOT323 | RYN 120 625/1 |
| Q600 | Coupler Directional, 03db, Chi | UND 106 10/1 |
| Q601 | MICROCIRCUIT/OPAMP 2.2V R/R 10MHZ | RYT 101 6316/1 |
| Q602 | Coupler Directional, 03db, Chi | UND 106 10/1 |
| Q603 | TRANSISTOR/NPN 30V 100mA SOT323 | RYN 121 692/1 |
| Q604 | MICROCIRCUIT/OPAMP R/R 1.8-23V | RYT 101 130/2C |
| Q700 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q702 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q703 | TRANSISTOR/NPN 30V 100mA SOT323 | RYN 121 692/1 |
| Q704 | MICROCIRCUIT/OPAMP R/R 1.8-23V | RYT 101 130/2C |
| Q705 | TRANSISTOR/NPN 30V 100mA SOT323 | RYN 121 692/1 |
| Q706 | MICROCIRCUIT/OPAMP R/R 1.8-23V | RYT 101 130/2C |
| Q707 | MICROCIRCUIT/vector modulator 1.94-2.24 GHz | RYT 101 6478/1 |
| Q708 | MICROCIRCUIT/OPAMP R/R 1.8-23V | RYT 101 130/2C |
| Q709 | Coupler Directional, 03db, Chi | UND 106 10/1 |
| Q800 | MICROCIRCUIT/DELAY LINE , DIGITAL SWITCHED | RYT 108 6022/C |
| Q801 | MICROCIRCUIT/74'04 HCT TSSOP14 6x INVERTER | RYT 310 6008/2C |
| Q802 | MICROCIRCUIT/74'04 HCT TSSOP14 6x INVERTER | RYT 310 6008/2C |
| Q900 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q901 | Coupler Directional, 10db, Chi | UND 106 10/2 |

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| Prepared (also subject responsible if other) ERA/RKF/VR Larry Lindström | | No. B5KPROJ1192211-1 | | |
| Approved KI/ERA/RKF/VR (L Lindström) | Checked | Date 2002-11-20 | Rev A | Reference |

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| Q902 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q1100 | Coupler Directional, 10db, Chi | UND 106 10/2 |
| Q1101 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q1102 | Coupler Directional, 03db, Chi | UND 106 10/1 |
| Q1103 | Coupler, Directional, 16db thi | UND 106 07/1 |
| Q1104 | Coupler, Directional, 16db thi | UND 106 07/1 |
| Q1105 | MICROCIRCUIT/OPAMP R/R 1.8-23V | RYT 101 130/2C |
| Q1106 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q1200 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q1201 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q1203 | TRANSISTOR/NPN 30V 100mA SOT323 | RYN 121 692/1 |
| Q1204 | MICROCIRCUIT/OPAMP R/R 1.8-23V | RYT 101 130/2C |
| Q1206 | TRANSISTOR/NPN 30V 100mA SOT323 | RYN 121 692/1 |
| Q1207 | MICROCIRCUIT/OPAMP R/R 1.8-23V | RYT 101 130/2C |
| Q1209 | MICROCIRCUIT/vector modulator 1.94-2.24 GHz | RYT 101 6478/1 |
| Q1210 | MICROCIRCUIT/OPAMP R/R 1.8-23V | RYT 101 130/2C |
| Q1211 | Coupler Directional, 03db, Chi | UND 106 10/1 |
| Q1300 | MICROCIRCUIT/DELAY LINE , DIGITAL SWITCHED | RYT 108 6022/C |
| Q1301 | MICROCIRCUIT/74'04 HCT TSSOP14 6x INVERTER | RYT 310 6008/2C |
| Q1302 | MICROCIRCUIT/74'04 HCT TSSOP14 6x INVERTER | RYT 310 6008/2C |
| Q1400 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q1401 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q1502 | MICROCIRCUIT/ERA-3SM | RYT 101 6893/1 |
| Q1503 | MICROCIRCUIT/OPAMPx4 2.7-5.5V R/R 1MHz | RYT 101 030/5C |
| Q1504 | MICROCIRCUIT/REF LIN 2.5V +/-0.8% 15mA | RYT 113 6207/1 |
| Q1703 | Coupler Directional, 03db, Chi | UND 106 10/1 |
| Q1704 | MICROCIRCUIT/ERA-3SM | RYT 101 6893/1 |
| Q1800 | MICROCIRCUIT/AD8313 | RYT 101 6976/1 |
| Q1802 | MICROCIRCUIT/OPAMP x2 3.3V R/R | RYT 101 6336/1 |
| Q1803 | MICROCIRCUIT/REF LIN 2.5V +/-0.8% 15mA | RYT 113 6207/1 |
| Q1900 | MICROCIRCUIT/AD8361ARM+ | RYT 101 6441/1 |
| Q1901 | MICROCIRCUIT/OPAMP x2 3.3V R/R | RYT 101 6336/1 |
| Q2100 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q2101 | Coupler Directional, 03db, Chi | UND 106 10/1 |
| Q2102 | ASIC QGPA-E-series | ROP 101 1172/1 |
| Q2103 | BALUN/1900 MHZ 200 Ohm | REG 735 58/16 |
| Q2104 | MICROCIRCUIT/ERA-3SM | RYT 101 6893/1 |
| Q2105 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q2200 | Coupler, Directional, High Iso | UND 106 09/1 |
| Q2201 | Coupler Directional, 03db, Chi | UND 106 10/1 |
| Q2202 | Coupler Directional, 03db, Chi | UND 106 10/1 |
| Q2302 | MICROCIRCUIT/ERA-3SM | RYT 101 6893/1 |
| Q2303 | MICROCIRCUIT/OPAMPx4 2.7-5.5V R/R 1MHz | RYT 101 030/5C |
| Q2304 | MICROCIRCUIT/REF LIN 2.5V +/-0.8% 15mA | RYT 113 6207/1 |
| Q2500 | MICROCIRCUIT/PLL SYNTH MODULE 1950MHZ | RYT 903 702/1 |

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| Prepared (also subject responsible if other) | | No. | | |
| ERA/RKF/VR Larry Lindström | | B5KPROJ1192211-1 | | |
| Approved | Checked | Date | Rev | Reference |
| KI/ERA/RKF/VR (L Lindström) | | 2002-11-20 | A | |

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| Q2501 | Coupler Directional, 10db, Chi | UND 106 10/2 |
| Q2502 | MICROCIRCUIT Mixer, balanced, 1.75-3.5 GHz | RYT 901 6151/1 |
| Q2503 | MICROCIRCUIT/REG LIN+ 5V 150mA 0.6V | RYT 113 6076/2 |
| Q2504 | MICROCIRCUIT/AT-108 | RYT 115 6035/1 |
| Q2505 | Coupler Directional, 10db, Chi | UND 106 10/2 |
| Q2600 | MICROCIRCUIT/Selected version of - /1 | RYT 101 6892/2 |
| Q2601 | MICROCIRCUIT/ERA-3SM | RYT 101 6893/1 |
| Q2602 | MICROCIRCUIT/Mixer, balanced, 1.75-3.5 GHz | RYT 901 6151/1 |
| Q2603 | RIKTKOPPLARE/PD18-73 Y010 | UND 106 039/1 |
| Q2604 | MICROCIRCUIT/MIXER, DOWNCONVERTER | RYT 102 6116/1 |
| Q2605 | MICROCIRCUIT/MIXER, DOWNCONVERTER | RYT 102 6116/1 |
| Q2606 | Coupler Directional, 03db, Chi | UND 106 10/1 |
| Q2607 | MICROCIRCUIT/OPAMPx4 2.7-5.5V R/R 1MHz | RYT 101 030/5C |
| Q2608 | MICROCIRCUIT/REG LIN+ 5V 150mA 0.6V | RYT 113 6076/2 |
| Q2609 | MICROCIRCUIT/REF LIN 2.5V +/-0.8% 15mA | RYT 113 6207/1 |
| Q2800 | MICROCIRCUIT/8-BIT DAC 3.3V R/R LOW POWER | RYT 120 6084/1 |
| Q2801 | MICROCIRCUIT/8-BIT DAC 3.3V R/R LOW POWER | RYT 120 6084/1 |
| Q2802 | MICROCIRCUIT/I2C I/O EXPANDER 8-BIT SSOP20 | RYT 109 6048/3C |
| Q2803 | MICROCIRCUIT/I2C I/O EXPANDER 8-BIT SSOP20 | RYT 109 6048/3C |
| Q2804 | MICROCIRCUIT/EEPROM I2C 1K8 EEENS 5.0V I | RYT 118 6080/3 |
| Q2805 | MICROCIRCUIT/8-BIT DAC 3.3V R/R LOW POWER | RYT 120 6084/1 |
| Q2806 | MICROCIRCUIT/8-BIT DAC 3.3V R/R LOW POWER | RYT 120 6084/1 |
| Q2900 | MICROCIRCUIT/TEMP SENSOR, SOT-23, LM50C | RYT 124 6009/C |
| Q2901 | MICROCIRCUIT/DIG.TEMP.SENSOR 2 WIRE INT | RYT 124 6018/1 |
| R317 | ATTENUATOR/3DB SMD, TEMP. COEFF. 0.007 | UMF 101 181/37TT |
| R511 | ATTENUATOR/4DB SMD,TEMP. COEFF.-0.009 | UMF 101 181/49N |
| X200 | FILTER/1960MHZ BP , RX | RTN 202 1045/2 |
| X1500 | FILTER/1960MHZ BP , RX | RTN 202 1045/2 |
| X2200 | FILTER/1960MHZ BP , RX | RTN 202 1045/2 |
| X2500 | OSCILLATOR/13 MHz SMD | RTL 204 630/01 |
| Z200 | DIODE/PIN 100V 100mA SOT23 | RKZ 323 665/1 |
| Z201 | DIODE/PIN 100V 100mA SOT23 | RKZ 323 665/1 |
| Z600 | DIODE/SCHx2 4V (1mA) SOT143 | RKZ 323 6061/1 |
| Z601 | DIODE/SCHx2 4V (1mA) SOT143 | RKZ 323 6061/1 |
| Z602 | DIODE/PIN 100V 100mA SOT23 | RKZ 323 665/1 |
| Z603 | DIODE/PIN 100V 100mA SOT23 | RKZ 323 665/1 |
| Z700 | DIODE/SW 70V 0.1A SOT23 6ns | RKZ 123 02/1 |
| Z701 | DIODE/SW 70V 0.1A SOT23 6ns | RKZ 123 02/1 |
| Z702 | DIODE/PIN 100V 100mA SOT23 | RKZ 323 665/1 |
| Z703 | DIODE/PIN 100V 100mA SOT23 | RKZ 323 665/1 |
| Z1100 | DIODE/DUAL,VARI CAP,SMV1269,SC-70 | RKZ 323 6028/2 |
| Z1101 | DIODE/DUAL,VARI CAP,SMV1269,SC-70 | RKZ 323 6028/2 |
| Z1202 | DIODE/PIN 100V 100mA SOT23 | RKZ 323 665/1 |
| Z1203 | DIODE/PIN 100V 100mA SOT23 | RKZ 323 665/1 |
| Z1204 | DIODE/SW 70V 0.1A SOT23 6ns | RKZ 123 02/1 |

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| Prepared (also subject responsible if other) ERA/RKF/VR Larry Lindström | | No. B5KPROJ1192211-1 | | |
| Approved KI/ERA/RKF/VR (L Lindström) | Checked | Date 2002-11-20 | Rev A | Reference |

Z1205 DIODE/SW 70V 0.1A SOT23 6ns
Z1501 DIODE/SCHx1 2V 1mA SOT23
Z2301 DIODE/SCHx1 2V 1mA SOT23

RKZ 123 02/1
RKZ 323 681/1
RKZ 323 681/1

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| Prepared (also subject responsible if other) ERA/RKF/VR Larry Lindström | | No. B5KPROJ1192211-1 | | |
| Approved KI/ERA/RKF/VR (L Lindström) | Checked | Date 2002-11-20 | Rev A | Reference |

2 **2.1033(c)(9) Tune-Up Procedure**

All the necessary adjustments will be set in the factory, and no adjustments are needed. The maximum output power level is remotely controlled by the Base Station Controller (BSC). If the TRXB or MCPA are not able to maintain the requirements for power output, frequency stability, etc an alarm is sent to the BSC. On severe faults the TRXB or MCPA (via TRXB) will disable transmission.

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| Prepared (also subject responsible if other) ERA/RKF/VR Larry Lindström | | No. B5KPROJ1192211-1 | | |
| Approved KI/ERA/RKF/VR (L Lindström) | Checked | Date 2002-11-20 | Rev A | Reference |

3 **2.1033(c)(9,10) Power Tune-Up – Power Limiting**

The TRXB measures the output power at its output connector via a RF-detector and the detected value is used by the power loop control block to steer the variable gain amplifiers in the exciter amplifier. The dynamic power control included in the WCDMA system is controlled by the exciter amplifier in the TRXB.

The MCPA measures the output power at its output connector via a RF-detector and the detected value is used by the power loop control block to steer the three amplifiers between the input and the output of the amplifier. The MCPA is set to a standard gain which is not normally controllable from the switch system.

The TRXB frequency chain is as follows:

The TRXB have two stabilizing clock circuits, one 10 MHz VCXO and one 61.44 MHz VCXO. Both these clocks are phase-locked to a incoming 30.72 MHz clock reference.

The 61.44 MHz clock is fed to the Digital to Analog Converter in the transmit chain and to the Analog to Digital Converter in the receive chain. The base band signal fed to the Digital to Analog Converter is digitally QPSK IQ-modulated. The output from the Digital to Analog Converter have a frequency of 15.36 MHz. This signal is mixed with a 272.64 MHz signal from the Transmit Intermediate Local Oscillator (PLL) to 288 MHz. The Transmit Intermediate Local Oscillator is phase-locked to the 10 MHz signal from the VCXO above.

The 288 MHz signal is then mixed with a signal of 1644.5 to 1699.5 MHz from one of two Local Oscillators to 1932.5 to 1987.5 MHz. The Local Oscillators are phase-locked to the same 10 MHz signal from the VCXO above. (In this case is the output frequency locked to 1947.5 MHz – LO frequency of 1659.5 MHz).

The 30.72 MHz clock reference is generated in a voltage controlled oscillator placed in the Timing Unit Board (TUB). This clock is phase-locked to a 8 kHz oscillator also placed in the TUB. This oscillator is in turn locked to the extracted frame-sync of 8 kHz from the Exchange TerMinal board (ETM). The ETM is connected to the incoming PCM-link, where the frame-sync from the PCM is extracted. As an option can the TUB be directly connected to external PCMLinks or a 10 MHz source.