

Prepared (also subject responsible if other) EAB/RBI/R Per Helmersson		No. B5KDKRC1311004-1		
Approved KI/EAB/RBI/R (P Helmersson)	Checked	Date 2004-04-26	Rev A	Reference

Exhibit 10 - Components, Tune Up

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

1.1 Printed Board TBU 1900 MHz GMSK ROA 117 2970/2

1.1.1 Function Block CPU

<Product>ROZ 104 221/1
<Revision>PB18

Pos	Prod name/Func des	Product number
L3100	FILTER/EMI,3A 50 OHM 1206 SMD	REG 706 21/1
V3100	LIGHT EMITTING DIODE/LED red 0.5-1.3mcd(20mA) chip	RKZ 433 606/3
V3900	LIGHT EMITTING DIODE/LED super-red 56-140mcd(20mA)	RKZ 433 681/1
V3901	LIGHT EMITTING DIODE/LED TRUE GREEN 90-180mcd(20mA)	RKZ 433 681/5
V3902	LIGHT EMITTING DIODE/LED YELLOW 90-224mcd(20mA) SID	RKZ 433 681/4
V3903	LIGHT EMITTING DIODE/LED YELLOW 90-224mcd(20mA) SID	RKZ 433 681/4
Z3001	MICROCIRCUIT/74'08 LVC TSSOP14 Nor gate, qu	RYT 331 0008/3C
Z3100	PROD. ADAPT. CIRCUIT/ASIC POWER GARP	ROP 101 1192/1
Z3303	MICROCIRCUIT/74'14 LVC TSSOP14 6x INVERT SC	RYT 331 0014/3C
Z3400	MICROCIRCUIT/SDRAM 16M16 133MHz CL=3 100MHz	RYT 119 6142/5
Z3401	MICROCIRCUIT/SDRAM 16M16 133MHz CL=3 100MHz	RYT 119 6142/5
Z3402	MICROCIRCUIT/74'08 LVC1G SC70-5 1x 2-INP D-	RYT 326 6008/52C
Z3403	MICROCIRCUIT/FLASH TB 2M16 90NS 3.3V I	RYT 118 6152/6
Z3404	MICROCIRCUIT/FLASH 8M16 150NS 3.3V E	RYT 118 6153/1
Z3601	MICROCIRCUIT/LVDS LINE DRIVER x4 TSSOP16 /9	RYT 109 6181/2C
Z3602	MICROCIRCUIT/LVDS LINE RECEIVER x4 TSSOP16	RYT 109 6158/2C
Z3603	MICROCIRCUIT/RS485/422 TRANSCEIVER SO8/MAX3	RYT 109 165/C
Z3604	MICROCIRCUIT/RS485/422 TRANSCEIVER SO8/MAX3	RYT 109 165/C
Z3605	MICROCIRCUIT/RS485/422 TRANSCEIVER SO8/MAX3	RYT 109 165/C
Z3606	MICROCIRCUIT/RS485/422 TRANSCEIVER SO8/MAX3	RYT 109 165/C
Z3607	FUNCTIONAL COMPONENT/CDU MUX PLD	RON 107 496
Z3700	MICROCIRCUIT/74'244 LVC SSOP20 8x BUFFER NO	RYT 331 0244/C
Z3701	MICROCIRCUIT/74'244 LVC SSOP20 8x BUFFER NO	RYT 331 0244/C
Z3702	MICROCIRCUIT/74'244 LVC SSOP20 8x BUFFER NO	RYT 331 0244/C

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1.1.2 Function Block SPARC1

<Product>ROZ 104 222/2
<Revision>PB9

Pos	Prod name/Func des	Product number
L5200	FILTER/EMI,3A 50 OHM 1206 SMD	REG 706 21/1
L5201	FILTER/EMI,3A 50 OHM 1206 SMD	REG 706 21/1
L5300	FILTER/EMI,3A 50 OHM 1206 SMD	REG 706 21/1
L5301	FILTER/EMI,3A 50 OHM 1206 SMD	REG 706 21/1
Z5000	MICROCIRCUIT/74'08 LVC TSSOP14 Nor gate, qu	RYT 331 0008/3C
Z5001	MICROCIRCUIT/FLASH SPI 128K8 20MHz 2.7V I	RYT 118 6154/2
Z5002	MICROCIRCUIT/74'86 LVC,Z1G SC70-5 1x 2-INP	RYT 326 6086/42C
Z5003	MICROCIRCUIT/74'08 LVC1G SC70-5 1x 2-INP D-	RYT 326 6008/52C
Z5004	MICROCIRCUIT/74'86 LVC,Z1G SC70-5 1x 2-INP	RYT 326 6086/42C
Z5200	PROD. ADAPT. CIRCUIT/EDGE BASE BAND ASIC, EBBA	ROP 101 1189/1
Z5201	MICROCIRCUIT/SDRAM 16M16 133MHz CL=3 100MHz	RYT 119 6142/5
Z5300	PROD. ADAPT. CIRCUIT/TARAC_U+	ROP 101 1128/2

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1.1.3 Function Block SPARC2

<Product>ROZ 104 223/2
<Revision>PB12

Pos	Prod name/Func des	Product number
L6200	FILTER/EMI,3A 50 OHM 1206 SMD	REG 706 21/1
L6201	FILTER/EMI,3A 50 OHM 1206 SMD	REG 706 21/1
L6300	FILTER/EMI,3A 50 OHM 1206 SMD	REG 706 21/1
L6301	FILTER/EMI,3A 50 OHM 1206 SMD	REG 706 21/1
Z6000	MICROCIRCUIT/74'08 LVC TSSOP14 Nor gate, qu	RYT 331 0008/3C
Z6001	MICROCIRCUIT/74'86 LVC,Z1G SC70-5 1x 2-INP	RYT 326 6086/42C
Z6002	MICROCIRCUIT/74'08 LVC1G SC70-5 1x 2-INP D-	RYT 326 6008/52C
Z6003	MICROCIRCUIT/74'86 LVC,Z1G SC70-5 1x 2-INP	RYT 326 6086/42C
Z6200	PROD. ADAPT. CIRCUIT/EDGE BASE BAND ASIC, EBBA	ROP 101 1189/1
Z6201	MICROCIRCUIT/SDRAM 16M16 133MHz CL=3 100MHz	RYT 119 6142/5
Z6300	PROD. ADAPT. CIRCUIT/TARAC_U+	ROP 101 1128/2
Z6301	MICROCIRCUIT/FLASH SPI 128K8 20MHz 2.7V I	RYT 118 6154/2

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1.1.4 Function Block DC/DC

<Product>ROZ 104 224/1
<Revision>PB11

Pos	Prod name/Func des	Product number
D700	RECTIFIER/REC SCH x2 30V 2x6A DPAK	RKZ 323 6047/1
D701	DIODE/SWI x2 70V 200mA SOT23 serial	RKZ 123 03/1
D702	DIODE/SWI x2 70V 200mA SOT23 com.cat	RKZ 123 03/3
D704	DIODE/SWI x2 70V 200mA SOT23 serial	RKZ 123 03/1
D705	DIODE/SWI x2 70V 200mA SOT23 serial	RKZ 123 03/1
D706	MICROCIRCUIT/MOSFET DRIVERx2 INV/NONINV /44	RYT 109 6204/1
D707	MICROCIRCUIT/MOSFET DRIVERx2 INV/NONINV /44	RYT 109 6204/1
D708	RECTIFIER/REC 200V 1A SMA 35ns	RKZ 123 05/2
D709	RECTIFIER/REC 200V 1A SMA 35ns	RKZ 123 05/2
D711	DIODE/REC SCH 40V 2A SMB 0.44V(2A)	RKZ 323 487/2
D712	DIODE/REC SCH 40V 2A SMB 0.44V(2A)	RKZ 323 487/2
D713	DIODE/SWI SCH x2 40V 120mA SOT23 ser	RKZ 323 17/1
D716	MICROCIRCUIT/MOSFET DRIVERx2 INV/NONINV /44	RYT 109 6204/1
D717	MICROCIRCUIT/MOSFET DRIVERx2 INV/NONINV /44	RYT 109 6204/1
N700	MICROCIRCUIT/2 Chan Sync Current Mode PWM	RYT 113 142/C
N701	MICROCIRCUIT/REG LIN+ ADJ 1.25-13.8 +/-1% 8	RYT 113 6302/3
N702	MICROCIRCUIT/REG SW- ADJ 1.5A	RYT 113 6373/1
N703	MICROCIRCUIT/Quad Voltage Supervisory Circu	RYT 113 296/C
N704	MICROCIRCUIT/OPAMP 2.5V/30V R/R 21MHz	RYT 101 6339/1
N705	MICROCIRCUIT/REG SW- ADJ 150kHz 0.5A	RYT 113 6320/1
N706	MICROCIRCUIT/PWM CMOS	RYT 113 479/C
N707	MICROCIRCUIT/OPAMP 2.5V/30V R/R 21MHz	RYT 101 6339/1
N708	MICROCIRCUIT/COMP x2 36V	RYT 101 6169/1
N709	MICROCIRCUIT/OPAMP 2.5V/30V R/R 21MHz	RYT 101 6339/1
N710	MICROCIRCUIT/COMP x2 36V	RYT 101 6169/1
N711	REGULATOR/REG LIN- 5.0V +/-4% 100mA 1.7V	RYT 113 6021/1C
N712	MICROCIRCUIT/PWM ADJ 0.8V to 90% of VIN	RYT 113 6374/1
N713	MICROCIRCUIT/COMP x2 36V	RYT 101 6169/1
N714	MICROCIRCUIT/Current Sense Ampl.	RYT 101 142/2C
N715	MICROCIRCUIT/Current Sense Ampl.	RYT 101 142/2C
R704	TEMPERATURE SENSOR/KTY13A	RYT 124 6001/2C
T700	TRANSFORMER/DCDC OOPS	REG 544 2313
T701	TRANSFORMER/	REG 520 2310
T702	TRANSFORMER/SMD EFD30	REG 258 2304
V700	TRANSISTOR/NFET 100V 4.5A SO8 60mohm(10V)	RYN 123 6013/1
V701	TRANSISTOR/NFET 100V 4.5A SO8 60mohm(10V)	RYN 123 6013/1
V702	TRANSISTOR/NFET 30V 14A SO8 10mohm(4.5V)	RYN 123 6012/1
V706	TRANSISTOR/NFET 30V 14A SO8 10mohm(4.5V)	RYN 123 6012/1
V707	TRANSISTOR/NFET 30V 14A SO8 10mohm(4.5V)	RYN 123 6012/1
V709	TRANSISTOR/NPN SS 45V 100mA SOT23 hFE>250	RYN 121 629/1

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V712 TRANSISTOR/NFET 55V 56A DPAK 16mohm(10V)	RYN 123 6023/1
V713 TRANSISTOR/NFET 100V 46A DPAK 26mohm(10V)	RYN 123 6061/1
V714 TRANSISTOR/NFET 100V 46A DPAK 26mohm(10V)	RYN 123 6061/1
V715 TRANSISTOR/NFET 100V 46A DPAK 26mohm(10V)	RYN 123 6061/1
V716 TRANSISTOR/NFET 100V 46A DPAK 26mohm(10V)	RYN 123 6061/1
V717 OVERVOLTAGE ARRESTER/TVS ZEN unidir 36V SMC 1.5kW(1	RKZ 223 485/36
V718 DIODE/REC SCH 40V 2A SMB 0.44V(2A)	RKZ 323 487/2
V720 TRANSISTOR/PNP SS 45V 100mA SOT23 hFE>250	RYN 120 614/1
V721 ZENERDIODE/ZEN 12.0V 6% 0.2W SOT23	RKZ 223 01/18
V722 ZENERDIODE/ZEN 12.0V 6% 0.2W SOT23	RKZ 223 01/18
V723 ZENERDIODE/ZEN 12.0V 6% 0.2W SOT23	RKZ 223 01/18
V724 RECTIFIER/REC SCH x2 30V 2x15A D2PAK	RKZ 323 6012/3
V725 RECTIFIER/REC SCH x2 30V 2x15A D2PAK	RKZ 323 6012/3
V727 DIODE/SWI x2 70V 200mA SOT23 serial	RKZ 123 03/1
V728 DIODE/SWI x2 70V 200mA SOT23 serial	RKZ 123 03/1
V729 DIODE/SWI x2 70V 200mA SOT23 serial	RKZ 123 03/1
V730 TRANSISTOR/NFET 30V 14A SO8 10mohm(4.5V)	RYN 123 6012/1
V731 TRANSISTOR/NFET 30V 14A SO8 10mohm(4.5V)	RYN 123 6012/1
V732 TRANSISTOR/NFET 30V 14A SO8 10mohm(4.5V)	RYN 123 6012/1
V733 TRANSISTOR/NFET 100V 4.5A SO8 60mohm(10V)	RYN 123 6013/1
V734 DIODE/SWI x2 70V 200mA SOT23 serial	RKZ 123 03/1
V735 TRANSISTOR/PNP SS 45V 100mA SOT23 hFE>250	RYN 120 614/1
V736 TRANSISTOR/PNP SS 45V 100mA SOT23 hFE>250	RYN 120 614/1
V737 TRANSISTOR/NPN SS 45V 100mA SOT23 hFE>250	RYN 121 629/1

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1.1.5 Function Block LTU

<Product>ROZ 104 225/1

<Revision>PA8

Pos	Prod name/Func des	Product number
V500	DIODE/SWI SCH x2 70V 70mA SOT23 seri	RKZ 323 08/2
Z500	MICROCIRCUIT/REG LIN+ ADJ 1.8-20V +/-1% 500	RYT 113 6303/1
Z501	MICROCIRCUIT/74'74 AC SOP14 2xD FLIP-FLOP	RYT 318 0074/C
Z503	MICROCIRCUIT/PLL SSOP16 MB15E07 PFV-ER	RYT 102 6057/1
Z504	OSCILLATOR/26.000MHZ	RTL 202 610/02
Z505	MICROCIRCUIT/74'04 LVC SSOP14 6x INVERTER	RYT 331 0004/C
Z506	MICROCIRCUIT/74'04 ACT TSSOP14 6x INVERTER	RYT 317 6004/22C
Z507	MICROCIRCUIT/74'04 ACT TSSOP14 6x INVERTER	RYT 317 6004/22C
Z508	MICROCIRCUIT/REG LIN+ 3.3V 150mA 0.575V	RYT 113 6110/12

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1.1.6 Function Block RX Front end

<Product>ROZ 104 228/1

<Revision>PA21

Pos	Prod name/Func des	Product number
D1050	MICROCIRCUIT/74'595 HCT TSSOP16 8B S-IN S/P	RYT 310 6031/2C
D1051	MICROCIRCUIT/74'04 HC1G SSOP5-P 1x INVERTER	RYT 326 6004/C
D1052	MICROCIRCUIT/74'595 HCT TSSOP16 8B S-IN S/P	RYT 310 6031/2C
D1053	MICROCIRCUIT/74'04 HC1G SSOP5-P 1x INVERTER	RYT 326 6004/C
D1054	MICROCIRCUIT/74'595 HCT TSSOP16 8B S-IN S/P	RYT 310 6031/2C
N1050	MICROCIRCUIT/OPAMP x1 +/-6V	RYT 101 6161/1
N1051	MICROCIRCUIT/Switch. AS186-302 MSOP-8	RYT 101 6438/1
N1052	MICROCIRCUIT/attenuator AA106-86	RYT 115 6032/1
N1053	MICROCIRCUIT/OPAMP x1 +/-6V	RYT 101 6161/1
N1054	MICROCIRCUIT/attenuator AA106-86	RYT 115 6032/1
N1055	MICROCIRCUIT/OPAMP x1 +/-6V	RYT 101 6161/1
N1057	MICROCIRCUIT/attenuator AA106-86	RYT 115 6032/1
N1058	MICROCIRCUIT/OPAMP x1 +/-6V	RYT 101 6161/1
N1059	MICROCIRCUIT/attenuator AA106-86	RYT 115 6032/1
N1061	DIRECTIONAL COUPLER/PD18-73 Y010	UND 106 039/1
N1062	DIRECTIONAL COUPLER/PD18-73 Y010	UND 106 039/1
N1063	DIRECTIONAL COUPLER/PD18-73 Y010	UND 106 039/1
N1064	DIRECTIONAL COUPLER/PD18-73 Y010	UND 106 039/1
N1065	DIRECTIONAL COUPLER/PD18-73 Y010	UND 106 039/1
N1200	MICROCIRCUIT/microsynth (RX 1900)	RYT 902 6046/1
N1201	MICROCIRCUIT/microsynth (RX 1900)	RYT 902 6046/1
N1202	MICROCIRCUIT/TEMP SENSOR, SOT-23, LM50C	RYT 124 6009/C
N1203	MICROCIRCUIT/IC ASIC ULLA II	ROP 101 664/C
N1204	MICROCIRCUIT/IC ASIC ULLA II	ROP 101 664/C
N1205	MICROCIRCUIT/TEMP SENSOR, SOT-23, LM50C	RYT 124 6009/C
N1206	MICROCIRCUIT/microsynth (RX 1900)	RYT 902 6046/1
N1207	MICROCIRCUIT/microsynth (RX 1900)	RYT 902 6046/1
T1200	TRANSFORMER/SMD TRANSFORMER	REG 135 55/7
T1201	TRANSFORMER/SMD TRANSFORMER	REG 135 55/7
T1202	TRANSFORMER/BALUN 50/50 OHM 1880 MHZ	REG 135 58/5
T1203	TRANSFORMER/BALUN 50/50 OHM 1880 MHZ	REG 135 58/5
T1204	TRANSFORMER/SMD TRANSFORMER	REG 135 55/7
T1205	TRANSFORMER/SMD TRANSFORMER	REG 135 55/7
T1206	TRANSFORMER/BALUN 50/50 OHM 1880 MHZ	REG 135 58/5
T1207	TRANSFORMER/BALUN 50/50 OHM 1880 MHZ	REG 135 58/5
V1050	TRANSISTOR/RF_HEMT 4V 60mA SC70 (SOT343)	RYN 123 697/1
V1051	TRANSISTOR/RF_HEMT 4V 60mA SC70 (SOT343)	RYN 123 697/1
V1052	TRANSISTOR/RF_HEMT 4V 60mA SC70 (SOT343)	RYN 123 697/1
V1053	TRANSISTOR/RF_HEMT 4V 60mA SC70 (SOT343)	RYN 123 697/1
V1112	DIODE/SWI x2 70V 200mA SOT23 serial	RKZ 123 03/1

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X1200 FILTER/1880MHz 60MHz BP 7x8mm	RTN 202 709/02
X1201 FILTER/1880MHz 60MHz BP 7x8mm	RTN 202 709/02
X1202 FILTER/1880MHz 60MHz BP 7x8mm	RTN 202 709/02
X1203 FILTER/1880MHz 60MHz BP 7x8mm	RTN 202 709/02
Z1051 MICROCIRCUIT/REG LIN+ LDO 5.0V +/-1% 800mA	RYT 113 6091/5
Z1052 MICROCIRCUIT/REG LIN+ LDO 5.0V +/-1% 800mA	RYT 113 6091/5
Z1200 MICROCIRCUIT/Switch. AS186-302 MSOP-8	RYT 101 6438/1
Z1201 MICROCIRCUIT/Switch. AS186-302 MSOP-8	RYT 101 6438/1

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1.1.7 Function Block RXIF1

<Product>ROZ 104 226/2
<Revision>PA8

Pos	Prod name/Func des	Product number
V1300	DIODE/CAP 15V 15-6pF 1-1E1A(USC) 6pF	RKZ 323 610/1
V1301	DIODE/CAP 15V 15-6pF 1-1E1A(USC) 6pF	RKZ 323 610/1
X1301	FILTER/201MHz 160kHz BP 15x6.5mm SAW	RTN 201 851/03
X1302	FILTER/201MHz 160kHz BP 15x6.5mm SAW	RTN 201 851/03
Z1301	PROD. ADAPT. CIRCUIT/ASIC VERDI	ROP 101 609
Z1302	PROD. ADAPT. CIRCUIT/ASIC QIM	ROP 101 1115/C
Z1306	MICROCIRCUIT/REG LIN+ LDO 5.0V +/-1% 800mA	RYT 113 6091/5
Z1401	MICROCIRCUIT/DELTA-SIGMA_MODULATOR QFP48	RYT 120 6061/2
Z1402	MICROCIRCUIT/DELTA-SIGMA_MODULATOR QFP48	RYT 120 6061/2
Z1403	MICROCIRCUIT/DELTA-SIGMA_MODULATOR QFP48	RYT 120 6061/2
Z1404	MICROCIRCUIT/DELTA-SIGMA_MODULATOR QFP48	RYT 120 6061/2
Z1406	MICROCIRCUIT/REG LIN+ LDO 5.0V +/-1% 800mA	RYT 113 6091/5

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1.1.8 Function Block RXIF2

<Product>ROZ 104 227/2
<Revision>PA9

Pos	Prod name/Func des	Product number
V2300	DIODE/CAP 15V 15-6pF 1-1E1A(USC) 6pF	RKZ 323 610/1
V2301	DIODE/CAP 15V 15-6pF 1-1E1A(USC) 6pF	RKZ 323 610/1
X2301	FILTER/201MHz 160kHz BP 15x6.5mm SAW	RTN 201 851/03
X2302	FILTER/201MHz 160kHz BP 15x6.5mm SAW	RTN 201 851/03
Z2301	PROD. ADAPT. CIRCUIT/ASIC VERDI	ROP 101 609
Z2302	PROD. ADAPT. CIRCUIT/ASIC QIM	ROP 101 1115/C
Z2303	MICROCIRCUIT/REG LIN+ 3.3V 150mA 0.575V	RYT 113 6110/12
Z2306	MICROCIRCUIT/REG LIN+ LDO 5.0V +/-1% 800mA	RYT 113 6091/5
Z2401	MICROCIRCUIT/DELTA-SIGMA_MODULATOR QFP48	RYT 120 6061/2
Z2402	MICROCIRCUIT/DELTA-SIGMA_MODULATOR QFP48	RYT 120 6061/2
Z2403	MICROCIRCUIT/DELTA-SIGMA_MODULATOR QFP48	RYT 120 6061/2
Z2404	MICROCIRCUIT/DELTA-SIGMA_MODULATOR QFP48	RYT 120 6061/2
Z2406	MICROCIRCUIT/REG LIN+ LDO 5.0V +/-1% 800mA	RYT 113 6091/5

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1.1.9 Function Block TX1

<Product>ROZ 104 229/1

<Revision>PA18

Pos	Prod name/Func des	Product number
D5500	MICROCIRCUIT/74'04 HC1G SSOP5-P 1x INVERTER	RYT 326 6004/C
D5501	MICROCIRCUIT/74'04 HC1G SSOP5-P 1x INVERTER	RYT 326 6004/C
D5701	MICROCIRCUIT/74'595 HCT TSSOP16 8B S-IN S/P	RYT 310 6031/2C
D5702	MICROCIRCUIT/74'595 HCT TSSOP16 8B S-IN S/P	RYT 310 6031/2C
L5500	INDUCTOR/100NH 5% 0.4A 0603	REG 704 1123/1
N5501	PROD. ADAPT. CIRCUIT/ASIC PENNY	ROP 101 612/2
N5503	PROD. ADAPT. CIRCUIT/ASIC FINJA	ROP 101 5005
N5504	MICROCIRCUIT/Switch. AS186-302 MSOP-8	RYT 101 6438/1
N5506	MICROCIRCUIT/Switch. AS186-302 MSOP-8	RYT 101 6438/1
N5601	DIRECTIONAL COUPLER/1500-2200MHz 20dB 100W	UND 106 049/1
N5602	MICROCIRCUIT/OPAMP 5V R/R 5MHz Low power	RYT 101 6348/1
N5604	MICROCIRCUIT/OPAMP x2 +/-15V 4.5MHz	RYT 101 6076/1C
N5607	MICROCIRCUIT/TEMP. SENSOR FAHERNHEIT	RYT 124 6015/1
N5701	MICROCIRCUIT/5 bit attenuator 0.5-2.5GHz	RYT 115 6033/1
N5702	MICROCIRCUIT/5 bit attenuator 0.5-2.5GHz	RYT 115 6033/1
N5703	INTEGRATED CIRCUIT/RF Amplifier Power	RYT 101 6525/1
R5674	ATTENUATOR/2dB 8W	UMF 104 002/2
T5500	BALUN/1900MHz 3216 200ohm 1W	REG 735 58/16
T5501	BALUN/1800MHz 3216 200ohm 1W	REG 735 58/9
T5504	BALUN/1900MHz 3216 200ohm 1W	REG 735 58/16
T5505	BALUN/1800MHz 3216 200ohm 1W	REG 735 58/9
T5506	TRANSFORMER/SMD TRANSFORMER 4:1	REG 135 55/1
V5501	DIODE/CAP 15V 15-6pF 1-1E1A(USC) 6pF	RKZ 323 610/1
V5502	DIODE/CAP 15V 15-6pF 1-1E1A(USC) 6pF	RKZ 323 610/1
V5600	DIODE/RF SCH x2 20V 5mA SOT363 uncon	RKZ 323 6059/1
V5601	TRANSISTOR/PNP SS 45V 100mA SOT23 hFE>250	RYN 120 614/1
V5606	ZENERDIODE/ZEN 10.0V 6% 0.2W SOT23	RKZ 223 01/16
Z5500	FILTER/1880MHz 60MHz BP 3x3mm SAW	RTN 201 404/01
Z5501	MICROCIRCUIT/microsynth (TX 1900)	RYT 902 6047/1
Z5502	MICROCIRCUIT/microsynth (TX 1900)	RYT 902 6047/1
Z5503	MICROCIRCUIT/REG LIN+ LDO 5.0V +/-1% 800mA	RYT 113 6091/5
Z5504	AMPLIFIER/RF Amplifier. SGA-6389 SOT	RYT 101 6414/1
Z5505	MICROCIRCUIT/REG LIN+ 3.3V 150mA 0.575V	RYT 113 6110/12
Z5701	FILTER/1960MHz 60MHz BP 6.6x4.4mm	RTN 202 1021/01
Z5702	MICROCIRCUIT/RF Amplifier. SGA-6589, SiGe	RYT 101 6470/1
Z5703	MICROCIRCUIT/RF Amplifier. SGA-6589, SiGe	RYT 101 6470/1
Z5704	FILTER/1960MHz 60MHz BP 6.6x4.4mm	RTN 202 1021/01
Z5800	PROD. ADAPT. CIRCUIT/ASIC SPIRA	ROP 101 616/C

Prepared (also subject responsible if other) EAB/RBI/R Per Helmersson		No. B5KDKRC1311004-1		
Approved KI/EAB/RBI/R (P Helmersson)	Checked	Date 2004-04-26	Rev A	Reference

1.1.10 Function Block TX2

<Product>ROZ 104 230/1
<Revision>PA19

Pos	Prod name/Func des	Product number
D6500	MICROCIRCUIT/74'04 HC1G SSOP5-P 1x INVERTER	RYT 326 6004/C
D6501	MICROCIRCUIT/74'04 HC1G SSOP5-P 1x INVERTER	RYT 326 6004/C
D6701	MICROCIRCUIT/74'595 HCT TSSOP16 8B S-IN S/P	RYT 310 6031/2C
D6702	MICROCIRCUIT/74'595 HCT TSSOP16 8B S-IN S/P	RYT 310 6031/2C
N6501	PROD. ADAPT. CIRCUIT/ASIC PENNY	ROP 101 612/2
N6503	PROD. ADAPT. CIRCUIT/ASIC FINJA	ROP 101 5005
N6504	MICROCIRCUIT/Switch. AS186-302 MSOP-8	RYT 101 6438/1
N6506	MICROCIRCUIT/Switch. AS186-302 MSOP-8	RYT 101 6438/1
N6601	DIRECTIONAL COUPLER/1500-2200MHz 20dB 100W	UND 106 049/1
N6602	MICROCIRCUIT/OPAMP 5V R/R 5MHz Low power	RYT 101 6348/1
N6604	MICROCIRCUIT/OPAMP x2 +/-15V 4.5MHz	RYT 101 6076/1C
N6607	MICROCIRCUIT/TEMP. SENSOR FAHERNHEIT	RYT 124 6015/1
N6701	MICROCIRCUIT/5 bit attenuator 0.5-2.5GHz	RYT 115 6033/1
N6702	MICROCIRCUIT/5 bit attenuator 0.5-2.5GHz	RYT 115 6033/1
N6703	INTEGRATED CIRCUIT/RF Amplifier Power	RYT 101 6525/1
R6674	ATTENUATOR/2dB 8W	UMF 104 002/2
T6500	BALUN/1900MHz 3216 200ohm 1W	REG 735 58/16
T6501	BALUN/1800MHz 3216 200ohm 1W	REG 735 58/9
T6504	BALUN/1900MHz 3216 200ohm 1W	REG 735 58/16
T6505	BALUN/1800MHz 3216 200ohm 1W	REG 735 58/9
T6506	TRANSFORMER/SMD TRANSFORMER 4:1	REG 135 55/1
V6501	DIODE/CAP 15V 15-6pF 1-1E1A(USC) 6pF	RKZ 323 610/1
V6502	DIODE/CAP 15V 15-6pF 1-1E1A(USC) 6pF	RKZ 323 610/1
V6600	DIODE/RF SCH x2 20V 5mA SOT363 uncon	RKZ 323 6059/1
V6601	TRANSISTOR/PNP SS 45V 100mA SOT23 hFE>250	RYN 120 614/1
V6606	ZENERDIODE/ZEN 10.0V 6% 0.2W SOT23	RKZ 223 01/16
Z6500	FILTER/1880MHz 60MHz BP 3x3mm SAW	RTN 201 404/01
Z6501	MICROCIRCUIT/microsynth (TX 1900)	RYT 902 6047/1
Z6502	MICROCIRCUIT/microsynth (TX 1900)	RYT 902 6047/1
Z6503	MICROCIRCUIT/REG LIN+ LDO 5.0V +/-1% 800mA	RYT 113 6091/5
Z6504	AMPLIFIER/RF Amplifier. SGA-6389 SOT	RYT 101 6414/1
Z6505	MICROCIRCUIT/REG LIN+ 3.3V 150mA 0.575V	RYT 113 6110/12
Z6701	FILTER/1960MHz 60MHz BP 6.6x4.4mm	RTN 202 1021/01
Z6702	MICROCIRCUIT/RF Amplifier. SGA-6589, SiGe	RYT 101 6470/1
Z6703	MICROCIRCUIT/RF Amplifier. SGA-6589, SiGe	RYT 101 6470/1
Z6704	FILTER/1960MHz 60MHz BP 6.6x4.4mm	RTN 202 1021/01
Z6800	PROD. ADAPT. CIRCUIT/ASIC SPIRA	ROP 101 616/C

Prepared (also subject responsible if other) EAB/RBI/R Per Helmersson		No. B5KDKRC1311004-1		
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1.1.11 Function Block TX back end

<Product>ROZ 104 231/1
<Revision>PA15

Pos	Prod name/Func des	Product number
N5904	MICROCIRCUIT/OPAMP 5V R/R 5MHz Low power	RYT 101 6348/1
V5900	DIODE/RF SCH x2 20V 5mA SOT363 uncon	RKZ 323 6059/1
V5902	TRANSISTOR/PNP SS 45V 100mA SOT23 hFE>200	RYN 120 645/1
V5904	DIODE/SWI 75V 215mA SOT23 4ns	RKZ 123 612
V5905	DIODE/SWI 75V 215mA SOT23 4ns	RKZ 123 612
V5906	TRANSISTOR/NPN SS 45V 100mA SOT23 hFE200-	RYN 121 6068/1
W5901	ISOLATOR/Isolator 1930 to 1990 MHz	UNH 102 3006/02
W5902	ISOLATOR/Isolator 1930 to 1990 MHz	UNH 102 3006/02
W5903	RELAY/RF-relay;SP;x-VDC;x-VDC;	RAV 947 46/01
W5904	ISOLATOR/Isolator 1930 to 1990 MHz	UNH 102 3003/04
W5905	ISOLATOR/Isolator 1930 to 1990 MHz	UNH 102 3003/04
W5906	RELAY/RF-relay;SP;x-VDC;x-VDC;	RAV 947 46/01
W5907	DIRECTIONAL COUPLER/1805-1990MHz 3dB 16x12mm Hybri	UND 106 087/2
V5605	TRANSISTOR/RF Power transistor 1.8 to 2.	RYN 123 1631/1
V6605	TRANSISTOR/RF Power transistor 1.8 to 2.	RYN 123 1631/1
Z5903	ATTENUATOR/50 OHM, 125W	REP 015 137/1

Prepared (also subject responsible if other) EAB/RBI/R Per Helmersson		No. B5KDKRC1311004-1		
Approved KI/EAB/RBI/R (P Helmersson)	Checked	Date 2004-04-26	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 at installation. The Base Station Controller (BSC) remotely controls the output power level. If the TRX (one half of dTRU) is not able to maintain the requirements for power output, frequency stability, etc an alarm is sent to the BSC. On severe faults the TRX (or TRX:s with TCC function) will disable transmission.

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

The TRX (one half of dTRU) 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 two variable gain amplifiers between the modulator and the power amplifier.

In TCC (Transmitter Coherent Combining) mode the output power is also measured with a RF detector in the non-output branch of the hybride combiner in the dTRU. This power is kept as low as possible, by keeping the TRX:s output power in phase with each other, to get maximum output power at the output branch of the hybride combiner

The transmitter in each TRX contains three synthesized oscillators. One PLL gives a 160 MHz signal to the I/Q modulator. The two other generate a 1770 to 1830 MHz signal to the mixer where the modulated signal is converted to the transmit frequency. Two oscillators are needed in frequency hopping mode, one is retuning while the other is active. All three synthesized oscillators have a reference of 13 MHz, which is mixed down by 2, generated in a central synthesized oscillator (PLL) of 26 MHz in the LTU part of the dTRU. This PLL frequency reference is extracted from the 13 MHz signal on the Y-link, which is generated and distributed, by the DXU (Distribution Switch Unit), to all dTRU:s in the base station.

The frequency reference 13 MHz in the DXU is generated in a voltage controlled oscillator placed in an oven together with and phase-locked to a long term stable oven heated oscillator. As an option the oscillator can be phase-locked to the incoming PCM-link frequency or an incoming GPS-link frequency.