

Receiver Block Diagram

Low Noise Amplifier

- Low IM Distortion
- High Current
- Optimized Gain FB Design

Front End RF Frequency Selectivity

- Helical Filters - UHF
- Voltage Tuned-VHF

Dual Conversion

- 45 or 21.4 MHz 1st IF
- 455 KHz 2nd IF

PLL Synthesizer

- VCO on Final Frequency
- Microprocessor Controlled
- High Stability 1 ppm TCXO

Double Balanced 1st Mixer

- Low IM Products
- +13 dBm LO

2 Stage 1st IF Amplifier

- 1st Stage Terminates Mixer
- Two 2 Pole Xtal Filters

2nd Mixer, Limiter, Discriminator

- 2 x 455 KHz Ceramic Filters
- 12.5 or 25 KHz Channel Space
- RSSI

Voice Audio Processing

- 4KHz Low Pass Filter
- 300 Hz HPF and 240 Hz Notch
- De-Emphasis
- Line and Monitor Output
- Discriminator Output

Noise Squelch

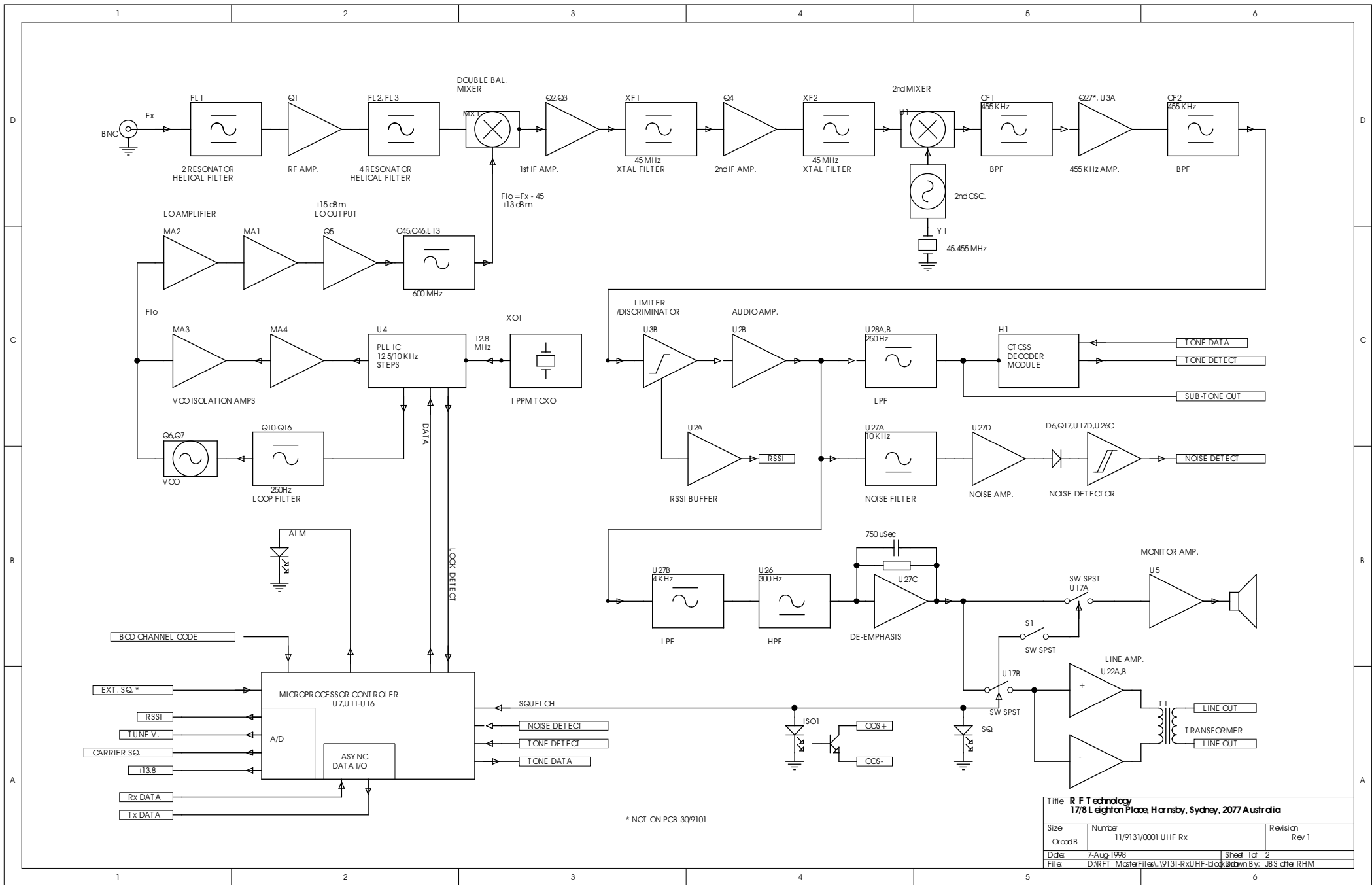
- 10 KHz Noise Filter and Amp.
- Detector with 2 dB Hysteresis
- Timing Controlled by Microprocessor
- Adapts to Strength of Signal

CTCSS

- 250 Hz Low Pass Filter
- Output for External Tone Panel
- DSP Decoder (NO DCS tones or codes)

DCS Option

- Includes DCS, CTCSS, Pilot Tone functions



* NOT ON PCB 30/9101

Title: R F T echnology 17/8 Leighton Place, Hornsby, Sydney, 2077 Australia		
Size: Orad B	Number: 11/9131/0001 UHF Rx	Revision: Rev 1
Date: 7-Aug-1998	Sheet: 1 of 2	
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Transmitter Block Diagram

PLL Synthesizer

- Single Loop
- VCO on Output Frequency
- Fast Locking and Settling
- 1 ppm TCXO-UHF
- 2.5 ppm Osc-VHF
- Microprocessor Controlled

Buffer Amplifiers

- MMICs'
- Isolate VCO from Output
- Switched to Enable/Disable Tx

Power Amplifier

- 4-10 mW Input
- 25 Watt Output - VHF, 0.5-1Watt 25-50 MHz
- 25 Watt Output – UHF, 10 Watt 800-930 MHz
- Output Power Regulated
 - Forward Power
 - Reverse Power
 - Temperature
- Variable Gain Amplifier
- Power Modules
- Low Pass Filter

Audio Inputs

- 600 Ohm Transformer
- Direct ac Coupled
- Sub-Audible
- Test Microphone

Voice Band Audio Processing

- Input Amplifier
- 750 uSec. Pre-Emphasis
- Peak Deviation Limiter/Clipper
- Summing Amplifier
- 3 KHz Low Pass Filter

Sub-Audible Audio Processing

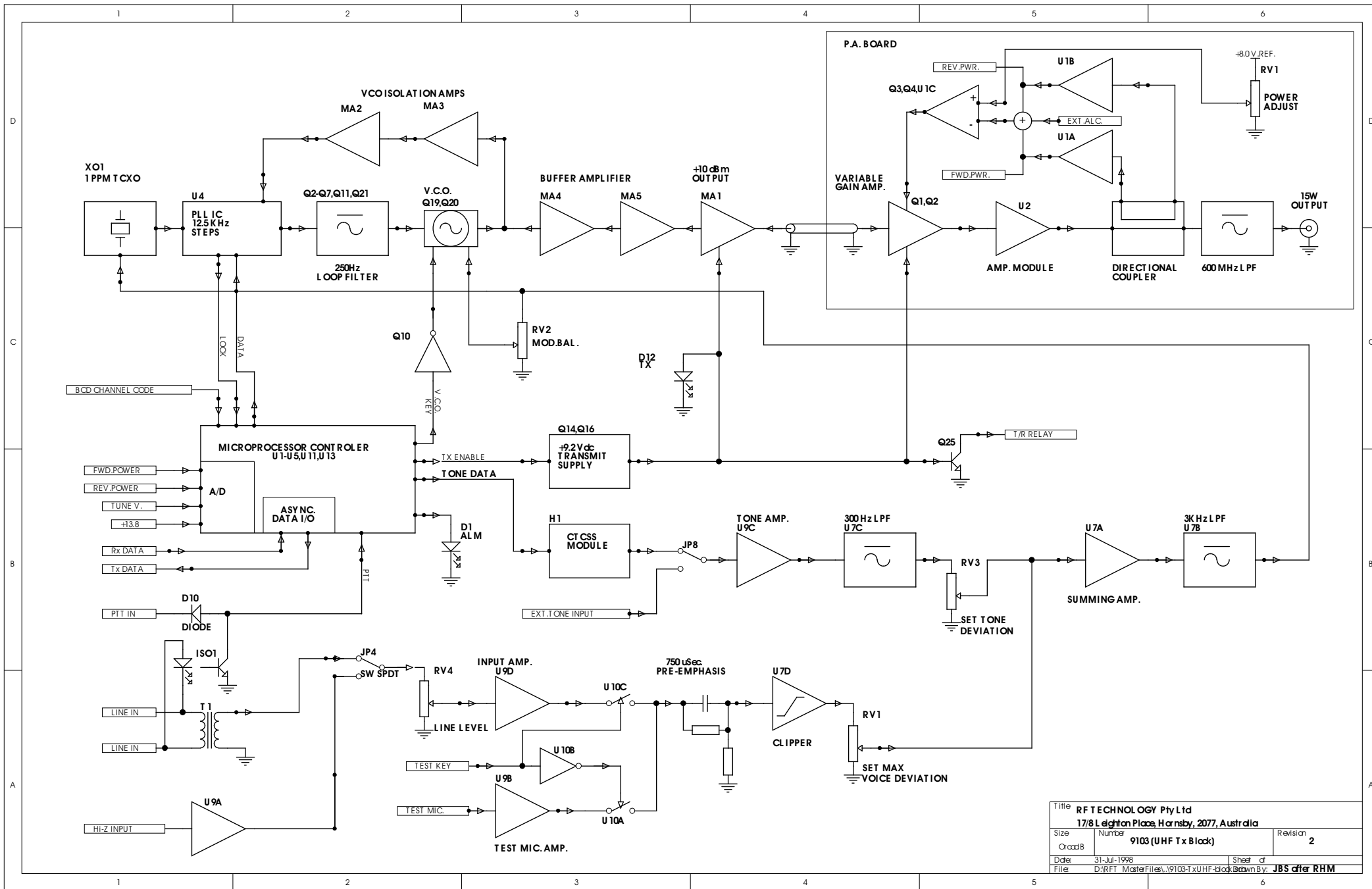
- External or CTCSS Module Input
- Tone Amplifier and Low Pass Filter
- Separate Deviation Adjustment

DCS Option

- Includes DCS, CTCSS, CWID functions

Two Point Modulation Used

- VCO and Reference Modulated
- High/Low Frequency Balanced



Title RF TECHNOLOGY Pty Ltd		
17/8 Leighton Place, Hornsby, 2077, Australia		
Size	Number	Revision
Orad B	9103 (UHF Tx Block)	2
Date	31-Jul-1998	Sheet of
File	D:\RFT MasterFiles\9103-TxUHF-Block.dwg Drawn By: JBS after RHM	

Power Amplifier Block Diagram

Power Amplifier Stage

Broad Band Design
Single or Parallel Combined

Power Combiner/Splitter

Transmission Line
Lumped Element

Directional Coupler

Forward and Reverse Power
Frequency Compensated

Low Pass Filter

Power Control Circuits

Forward and Reverse
Summed
Separate
Compared to dc Reference
ALC Voltage for Transmitter

Temperature Protection

Thermistor on Transistor Case
90 Celsius Maximum
Reduces Power to 10-25%
Front Panel LED

Fan Box Option – external or fitted to PA

RF Output Detector

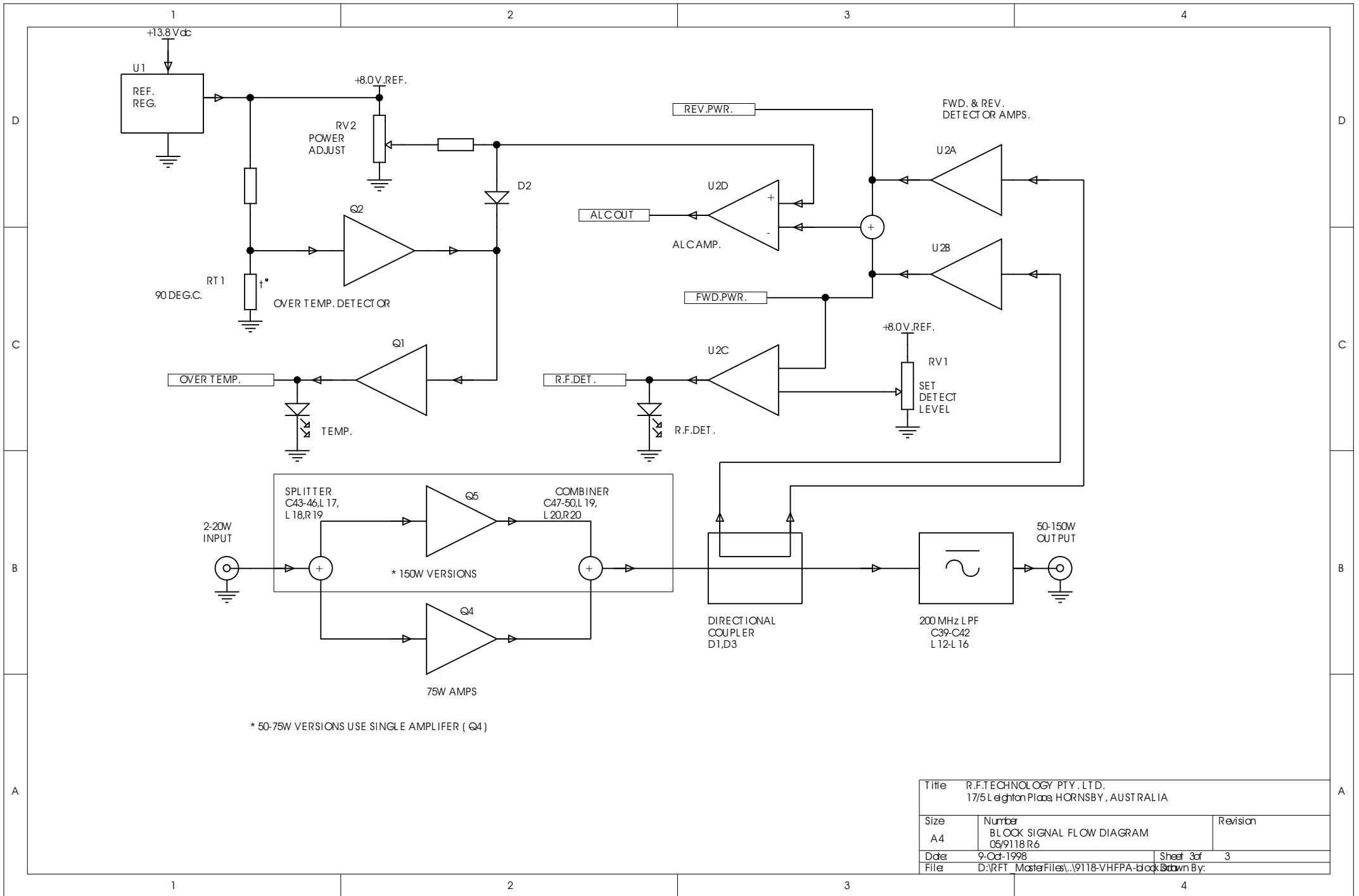
Indicates RF Output on LED
Preset Level - 50%

Special Assembly/Repair Requirements

Silver/Tin Solder
Power Transistors
Coils
Combiner Terminations

Heatsink Compound

DC340
Transistors
Combiner Terminations



Title R.F. TECHNOLOGY PTY. LTD. 17/5 Leighton Place, HORNSBY, AUSTRALIA			
Size A4	Number BLOCK SIGNAL FLOW DIAGRAM 05/9118 R6	Revision	
Date 9-Oct-1998	Sheet 3 of	3	
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* 50-75W VERSIONS USE SINGLE AMPLIFIER (Q4)