

II. Semiconductor function description:

Logic Control Module Sch. A

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| U2 | FPGA logic controller |
| Q8, Q9 | Transmitter enable switch |
| U8 | Received signal comparator |
| U6 | Reference 20MHz Oscillator |

Ramp generator Circuit Sch. B

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|--------|--------------------------|
| Q7, Q6 | Current mirror |
| U4,U5 | Voltage comparator |
| U1 | Tuning Voltage amplifier |
| U3 | Reference voltage switch |

Power Supply Circuit Sch . C

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|-------|-------------------------|
| U10 | 5V Voltage Regulator |
| U4 | 2.50V Voltage Regulator |
| U9 | DC/DC converter |
| Q1,Q4 | Power enable switch |

Video Amplifier Sch D

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| Q1,Q2,Q3 | Amplifiers |
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Transmitter/Receiver Sch. E, F

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|-------|--------------------|
| T1 | VCO |
| T2,T3 | Buffer amplifiers |
| T4 | Preamplifier |
| T5,T6 | Power Amplifier |
| T7 | Receiver amplifier |

III. Description of frequency determining and stabilizing circuits:

Frequency is determined by the tuning voltage, which is controlled by charging and discharging C17 by current mirror Q7,Q8 and adjustable limit comparators U4,U5

IV. Description of circuits used for suppression of spurious radiation, limiting modulation, and/or limiting power

Modulation (frequency sweep) is controlled and limited by comparators U4,U5 and U2 FPGA logic module.

Power output is controlled (limited) by operating the output amplifier T1&T6 in saturation with approx. 2dB of compression. Shielding and circulator on the transmitter Module is used to suppress spurious radiation.