EXHIBIT # 7&8

FCC Requirements CRF 47 Part 2.1033,c (7)&(8)

Power Rating and DC Power Input

JXBLMDSXP4-DS3

28/31 GHz hybrid specifications for FSK applications

This document provides a functional description of the emission hybrid in the 28/31 GHz frequency range.

Functional description

The general block diagram of the emission hybrid is shown in figure 1.

The main hybrid functions are

a. The frequency is generated by a bipolar VCO with two active variable capacitors to control and tune across the frequency of interest and to introduce the modulation signal. The fundamental VCO signal is divided by 2 to provide a lower frequency signal that is used in the PLL.

b The VCO signal is also multiplied by 8 with 3 frequency doublets to the 28/31 GHz frequency range. The unwanted spurious signals are filtered out by filters (BP,HP) in between the doublers and amplifier stages.

c. A variable gain amplifier provides +20,5 dBm with a power detector and an output low pass filter which is used to remove harmonic signals to be in compliance with ETS spurious emission specification. The amplifier can also be muted to limit the output power to less than -30 dBm.

d. A coaxial to waveguide transition is used to provide a waveguide output and to also suppress out of band harmonic signals.

Construction

The assemblies for all RF to mmwave components (VCO, amplifiers, multipliers etc) are achieved using alumina substrates and chip & wire techniques to obtain optimum performance. The power supply board is constructed with fiberglass substrates. Micro strip construction techniques are used to connect the PCBs and the alumina substrates. A shielding cover is used to protect the hybrid from external pollution, RF and environmental.

Functional Block Diagram

28 / 31 GHz Emission Hybrid

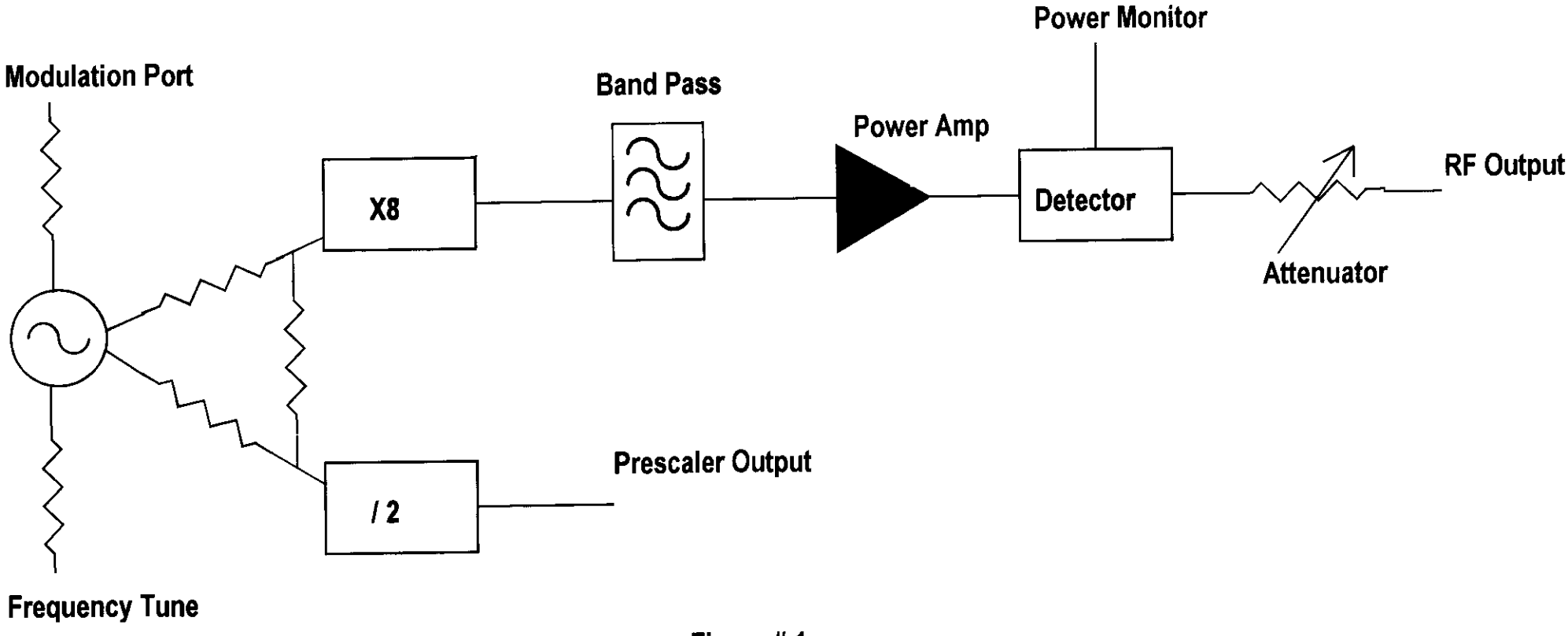

Figure # 1

28/31 GHz Emission Hybrid Specifications:

Parameter	Specification
Frequency Range	27.5-31.3 GHz
Output Power	+23 dBm max, Typ = 22 dBm
Power detection	>.4 V <2.0 V into 1OKohm load
Power Mute	-30 dBm max.
Spurious Outputs	-40 dBm max from 3-32.3 GHz -60 dBm max @+- 400 MHz or less -30 dBm max from 32.3-55 GHz measured w/ unmodulated output
Output Phase noise	-82 dBc/Hz min at 100 KHz offset
Modulation Sensitivity	9-45 MHz/V
Mod. Sense. Changes	+-7 % over 250 MHz
Prescaler Output	-10 to 0 dBm
Prescaler frequency	VCO divided by 2
RF Output	WR.28 wave-guide
Power consumption	7 watts
DC Voltages	*+10, +5, -5* volts
Operating temp	-30 to +75 deg C case temp.
Final Amplifier Voltage	3.5 V Max
Final Amplifier Current	350 ma Max