APPLICANT: VDO ADOLF SCHINDLING AG

FCC ID: MZ241081963

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NO.: 15.231

REQUIREMENTS:

Fundamental Frequency MHz	Field Strength of Fundamental dBuV	Field Strength of Harmonics and Spurious Emissions (dBuV/m @ 3m)
40.66 to 40.70	67.04	47.04
70 to 130	61.94	41.94
130 to 174	61.94 to 71.48	41.94 to 51.48
174 to 260	71.48	51.48
260 to 470	71.48 to 81.94	51.48 to 61.94
470 and above	81.94	61.94

THE LIMIT FOR AVERAGE FIELD STRENGTH dBuV/m FOR THE FUNDAMENTAL FREQUENCY= 75.62 dBuV/m dBuV/m. NO FUNDAMENTAL IS ALLOWED IN THE RESTRICTED BANDS.

THE LIMIT FOR AVERAGE FIELD STRENGTH dBuV/m FOR THE HARMONICS AND SPURIOUS FREQUENCIES = 55.62 dBuV/m dBuV/m. SPURIOUS IN THE RESTRICTED BANDS MUST BE LESS THAN 54dBuV/m OR 15.209.

TEST DATA:

EMISSION FREQ. MHz	METER READING @ 3m dBuV	COAX LOSS dB	ACF dB	PEAK FIELD STRNGTH dBuV/m	AVERAGE FIELD STRNGTH dBuV/m	MARGIN dB	ANT.
314.97	48.44	1.40	15.16	65.00	59.22	16.40	V
629.94	17.64	1.60	20.76	40.00	34.22	21.40	V
944.92	25.84	2.90	24.26	53.00	47.22	8.40	V
1259.89	32.96	1.00	25.04	59.00	53.22	2.40	V
1574.86R	30.70	1.00	26.30	58.00	52.22	1.78	V
1889.83	24.43	1.01	27.56	53.00	47.22	8.40	V
2204.80R	22.43	1.06	28.51	52.00	46.22	7.78	V

SAMPLE CALCULATION OF LIMIT @ 303 MHz:

(470 - 260)Mhz = 210 MHz
(12500 - 3750)uV/m = 8750 uV/m
8750uV/m/210MHz = 41.67 uV/m/MHz
(303-260)MHz = 43 MHz
43 MHz * 41.67 uV/m/MHz = 1791.81 uV/m
(1791.81 + 3750)uV/m = 5541.81 uV/m limit @ 303 MHz

The transmitter ceases transmitting when the button is released.

TEST RESULTS: The unit DOES meet the FCC requirements.

PERFORMED BY: S. S. SANDERS DATE: OCTOBER 29, 1998

REPORT #: F:\CUS\V\VDO\VDO153A8.RAD

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CALCULATION OF DUTY CYCLE:

The period of the pulse train is determined by observing it on an oscilloscope or a spectrum analyzer with zero(0) frequency span. A plot is then made of the pulse train with a sweep time of 100milliseconds. This sweep determines the duration of the pulse train, which in this case is 100 milliseconds. This sweep allows the determination of the number of and type of pulses, i.e. long & short. Plots are then made showing the duration of each type of pulse and its duration. From the 100millisecond Plot the number of a given type of pulse is then multiplied by the duration of that type pulse. This allows the calculation of the amount of time the UUT is on within 100milliseconds. If the pulse train is longer than 100milliseconds then this number is multiplied by 100 to determine the percentage ON TIME. If the pulse train is less than 100milliseconds the total on-time is divided by the length of the pulse train and then multiplied by 100 to determine the percentage ON TIME. In this case there were 34 pulses 1.16milliseconds long and 26pulses .46milliseconds long for a total of 51.4milliseconds on time within either the 100milliseconds or the pulse train. The average field strength is determined by multiplying the peak field strength by the percent on time. In this case the percentage ON time was 51.4%percent.