APPLICANT	MANUFACTURER
Lear Corporation 5300 Auto Club Drive Dearborn, MI 48126	Lear Corporation 5100 West Waters Avenue Tampa, FL 33634

TEST SPECIFICATION: FCC Rules and Regulations Part 15, Subpart C, Para. 15.231

TEST PROCEDURE: ANSI C63.4:1992

TEST SAMPLE DESCRIPTION

BRANDNAME: GM Motor Company MODEL: RLC-X

TYPE: Pulsed RF Transmitter

POWER REQUIREMENTS: 3 VDC derived from a CR2032 Battery

FREQUENCY OF OPERATION: 315 MHz

TESTS PERFORMED

Para. 15.231(a), Radiated Emissions, Fundamental and Harmonics

Para. 15.231(c), Occupied Bandwidth

Duty Cycle Determination

REPORT OF MEASUREMENTS

Applicant:	Lear Corporation
Device:	Pulsed RF Transmitter
FCC ID:	KOBLEAR1XT
Applicable Rule Section:	Part 15, Subpart C, Section 15.231

TEST RESULTS

15.231 (a) - The device is used as a transmitter for remote control purposes.

15.231 (a)(1) & 15.231(2) - The transmitter is manually operated and ceases transmission within 5 seconds after deactivation.

15.231 (a)(3) - The transmitter does not perform periodic transmissions.

15.231 (a)(4)- The transmitter is employed for RC purposes involving Security.

15.231 (b) - The fundamental field strength did not exceed 6040 µV/M (Average) at a test distance of 3 meters. In addition, the requirements of section 15.35 for averaging pulsed emissions and for limiting peak emissions were met.

The field strength of harmonic and spurious emissions did not exceed 604 µV/M (AVERAGE).

15.231 (c) - The device operates at 315 MHz. The bandwidth of emissions did not exceed 0.25% of the operating frequency (787.5 kHz).

DETERMINATION OF FIELD STRENGTH LIMITS

The field strength limits shown below are found in Section 15.231.

Frequency			Limit		
F1	=	260	3750	=	L1
Fo	=	315			Lo
F2	=	470	12500	=	L2

The formula below was utilized to determine the limits:

Limit = L1 + [(Fo-F1)(L2-L1)/(F2-F1)]

Solving yields:

Fundamental Limit = 6,040 µV/M (AVERAGE) @ 3 Meters

Harmonic Limit = 604 µV/M (AVERAGE) @ 3 Meters

DETERMINATION OF DUTY CYCLE

The following information was supplied by Lear Corp.

Transmitter On Time	=	31.6 milliseconds (maximum- worst case in 100 ms)
Transmitter Cycle Time	=	> 110.0 milliseconds
Transmitter Duty Cycle	=	31.6 %

Duty Cycle	=	31.6 %
Correction Factor = 20 log(0.316)	=	-10.0 dB

SPECTRUM ANALYZER DESENSITIZATION CONSIDERATIONS

Due to the nature of the emissions being measured, care was taken to ensure that the resolution bandwidth of the spectrum analyzer was adequate to provide accurate measurements. The following formula was utilized:

Setting pulse desensitization equal to zero and utilizing the minimum observed pulse width of 200µs yields a minimum required bandwidth of 3333.3 Hz. FCC specified bandwidths of 100kHz and 1 MHz were utilized below and above 1 GHz, respectively.

GENERAL NOTES

1. All readings were taken utilizing a peak detector function at a test distance of 3 meters.

2. The duty cycle was applied to the peak readings in order to determine the average value of the emissions.

3. All measurements were made with 3 VDC derived from a new CR2032 battery.

4. The frequency range was scanned from 30 MHz to 3.15 GHz. All emissions not reported were more than 20 dB below the specified limit.

EQUIPMENT LIST

FCC PART 15 SUBPART C

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3 Meter	RNY	10/15/97	10/15/00
128C	Double Ridge Guide	Eaton Corporation	1 GHz - 18 GHz	96001	9/16/99	9/16/00
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/22/99	6/22/00
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	9/20/99	3/20/00
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	3/5/99	3/5/00
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	9/20/99	3/20/00
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/22/99	6/22/00
523	Biconilog	Electro-Mechanics	26 - 2000 MHz	3142B	10/22/98	4/22/00
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	6/16/99	6/16/01

FCC 15.231(b)
RADIATED EMISSIONS, FUNDAMENTAL & SPURIOUS CASE
(Please see separate e-file attachments named RedataRFM.doc and REdataMurata.doc)

FCC 15.231(c)

OCCUPIED BANDWIDTH

(Please see separate e-file attachment named Occbw.pdf)