



## Duty Cycle Correction for Intentional Radiators

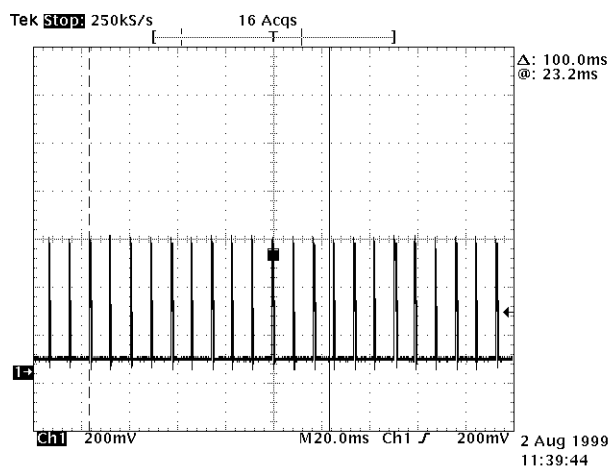
This document shows the duty cycle calculations for the **473T** Security/Remote Control transmitter (per Section 15.35 (c)). The following lists the formulas involved and screen shots of the radiated signal from a digital Oscilloscope.

- Oscilloscope used is the **Tektronix TDS 544A w/TEK P6137 10x probe**.
- Formula for calculating the duty cycle correction:

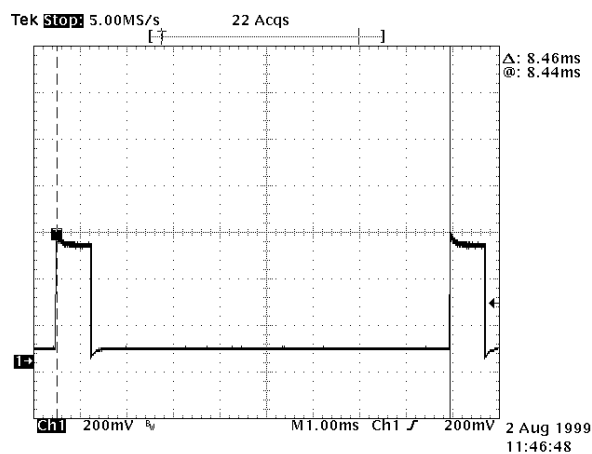
$$dB = 20 \log (DC)$$

Where as  $DC = (\text{Max. time data is on in } 100 \text{ ms} \div 100 \text{ ms})(\text{Max. duty cycle})$

“Max. Time data is on in 100 ms” refers to how many words are transmitted in 100 ms and the length of those words added together. “Max. Duty cycle” refers to the maximum bit length divided by the period of a pulse for the words recorded.

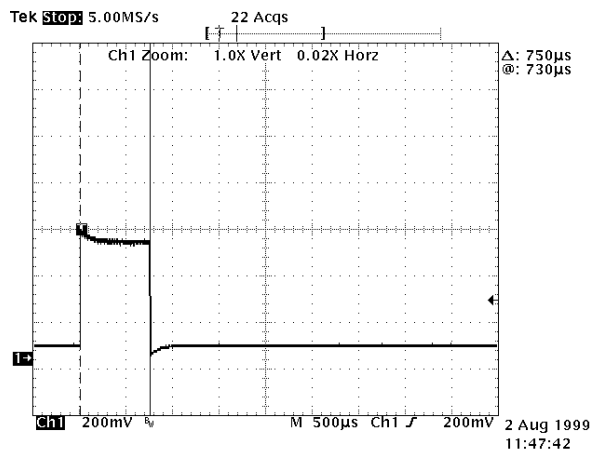


**Figure A**



**Figure B**

- Figure A: 100ms span
- Figure B: Span between each bit
- Figure C: Max. On time for data.



**Figure C**

### Duty cycle correction for 473T

DC	=	$[(750 \mu s * 12) \div 100 \text{ ms}]$
	=	$(9\text{ms} \div 100\text{ms})$
	=	90ms
dB	=	$20 \log (DC)$
	=	$20 \log (90\text{ms})$
	=	-20.915

*Max. Duty Cycle Credit is -20 dB Credit.*