

Dear Mr. Leimer,

You Wrote:

>To: Ken Addy, Alarm Device Manufacturing Company
>From: Andy Leimer
> aleimer@fcc.gov
> FCC Application Processing Branch
>
>Re: FCC ID CFS8DL5894PI-1
>Applicant: Alarm Device Manufacturing Company
>Correspondence
>Reference Number: 24998
>731 Confirmation
>Number: EA366975
>
>1) Submit analyzer or oscilloscope plots of the timing
> used to calculate the duty cycle correction factor.
> This is needed for verification.
>
>2) Is this device battery operated?
>

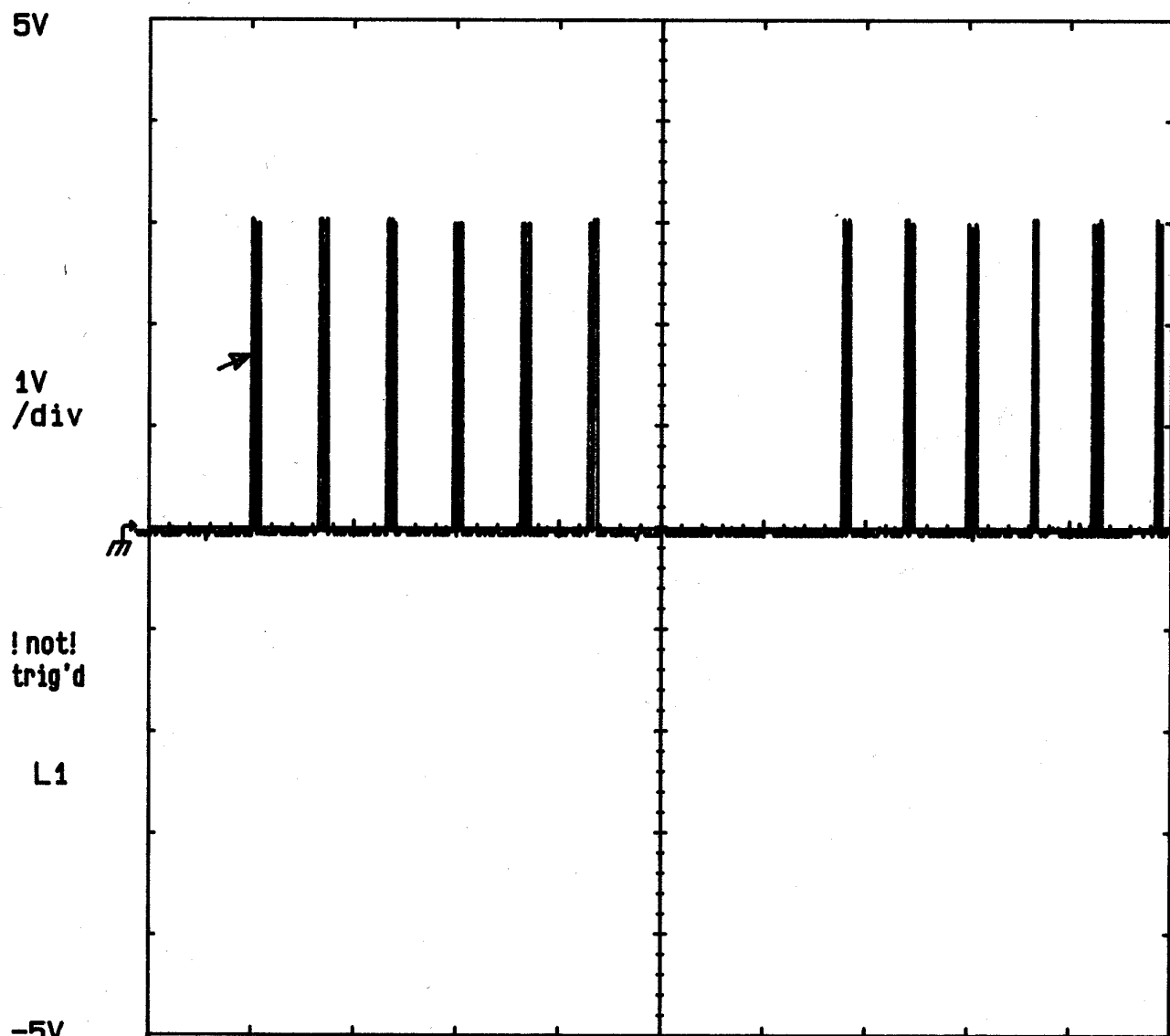
I Reply:

- Item (1) Please see the next five pages, as they are actual plots of the messages, and an extra copy of exhibit 3-1 (page six) where we calculated the timing.
- Item (2) Yes it is a battery operated device. Please see page seven (schematic) and page eight (picture of battery s in battery holders).

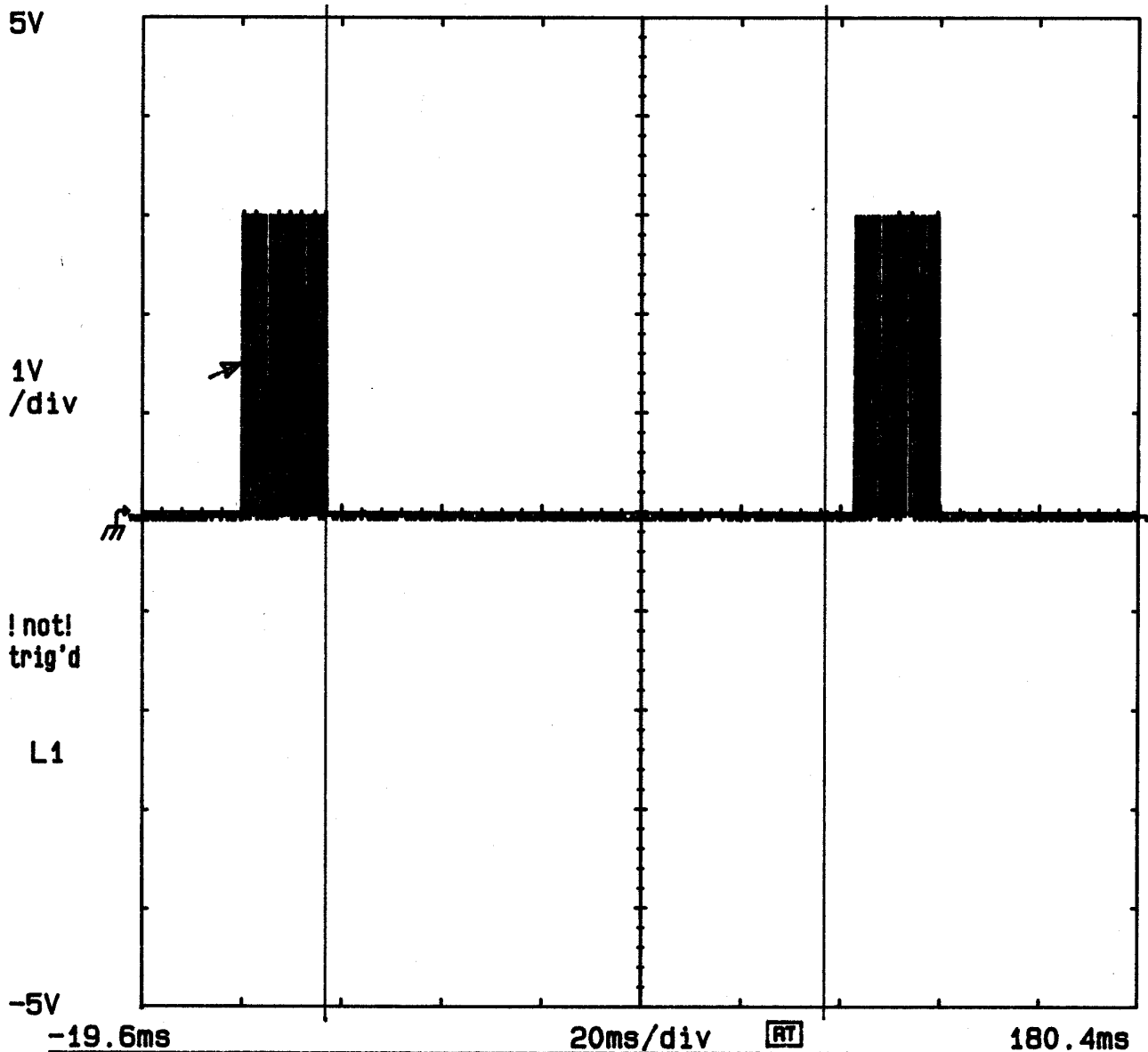
Best Regards,
Greg Barbato
for
Ken Addy

DSA 602 DIGITIZING SIGNAL ANALYZER

date: 27-MAR-03 time: 11:48:22



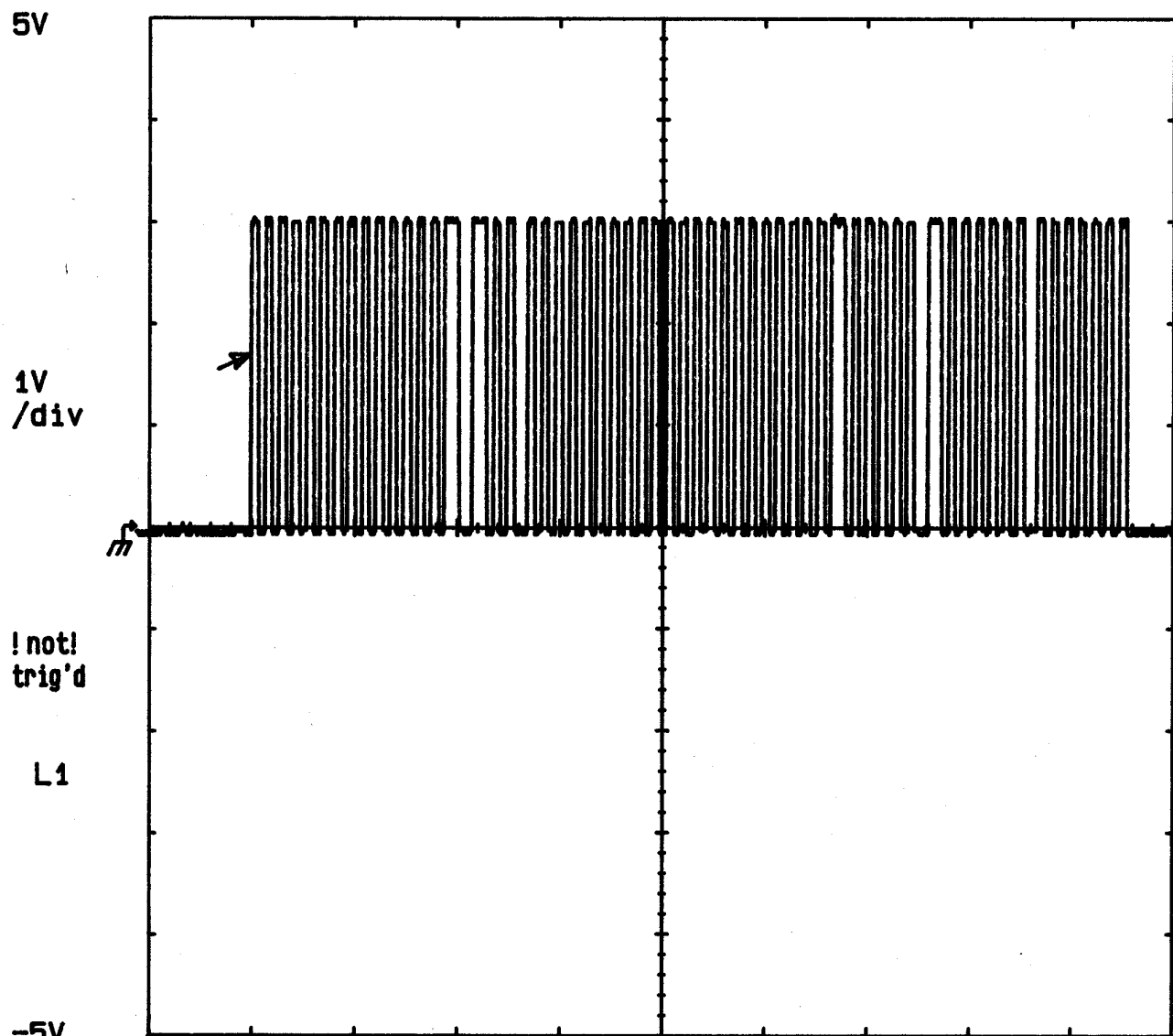
-196ms		200ms/div		RT		1.804s
Vertical Desc L1 Fast	Horizontal Desc Main 500S/sec	Acquire Desc Stopped	Graticules		Page to All Wfms Status	Rem Wfm 1 L1 Main
Input Parameters DC 500/100MHz	FFT Control dBm Rectang	Act on Delta None	Main Size 200m s/div	Pan/ Zoom Off	Main Position -220m s	



t1= 17.20ms t2= 117.2ms Δt = 100.0ms $1/\Delta t$ = 10.00Hz	Cursor Type Vertical Bars	Page to Previous Menu	Rem Wfm 1 L1 Main
	Cursor 1		Cursor 2
	17.20ms		117.2ms

DSA 602 DIGITIZING SIGNAL ANALYZER

date: 27-MAR-03 time: 11:46:02

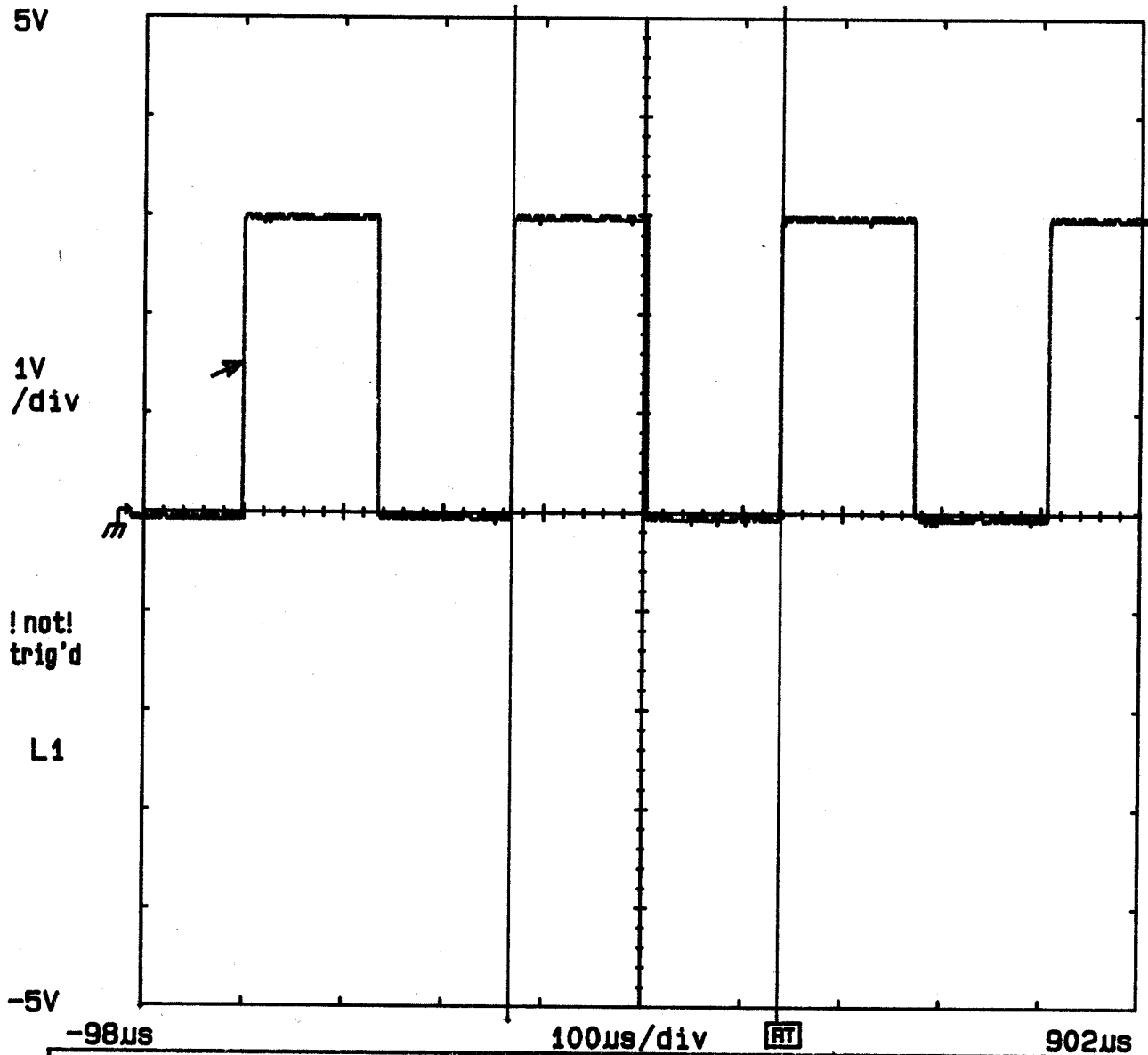


-1.96ms 2ms/div RT 18.04ms

Vertical Desc L1 Fast	Horizontal Desc Main 50kS/sec	Acquire Desc Continuous	Graticules	Page to All Wfms Status	Rem Wfm 1 L1 Main
Input Parameters DC 500/100MHz	FFT Control dBm Rectang	Act on Delta None	Main Size 2m s/div	Pan/ Zoom Off	Main Position -2.2m s

DSA 602 DIGITIZING SIGNAL ANALYZER

date: 27-MAR-03 time: 12:26:56



t1= 270.0μs t2= 540.0μs Δt= 270.0μs 1/Δt= 3.704kHz	Cursor Type	Page to	Rem
	Vertical Bars	Previous Menu	Wfm 1
	Cursor 1	Cursor 2	L1 Main
	270.0μs	540.0μs	

5894PI-1 Duty Cycle Calculation

Message protocol, timing and duty cycle calculation.

The data output is phase-encoded Manchester that has inherent 50% duty cycle and consists of 64 bits per word

A supervision transmission is six identical words separated by (start to start) by nominal 125mSec (100 mSec min, 150 mSec max). Each message has a nominal data rate of 3.7 kb/s (3.2kb/s min to 4.2kb/s max).

Therefore the duty cycle calculation is as follows:

The word format consists of 64 bits,

The duration of each bit is 312.5 uSec max.

The duty cycle over a 100 mSec measuring period is calculated as follows:

Duty cycle = Actual RF transmission ON time / 100 mSec

Actual transmission ON time = 64 bits X 50% X 312.5 uSec = 10 mSec

Therefore duty cycle = 10 / 100 mSec = .10 = 10%, and peak to average field strength is 20 db.

Total on-air time for a supervision transmission is:

$64 \times 312.5 \text{ uSec} + (5 \times 150 \text{ mSec}) = 0.77 \text{ seconds}$

In the case of an alarm transmission, the group of six transmissions is repeated twice, with the second group delayed from the first by a max time of 2 seconds.

The worst case on-air time is $2 \times (\text{supervision time}) + 2 = 3.54 \text{ seconds}$

Summary: - Duty cycle = 10%

On airtime = 3.54 seconds

