

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?
>

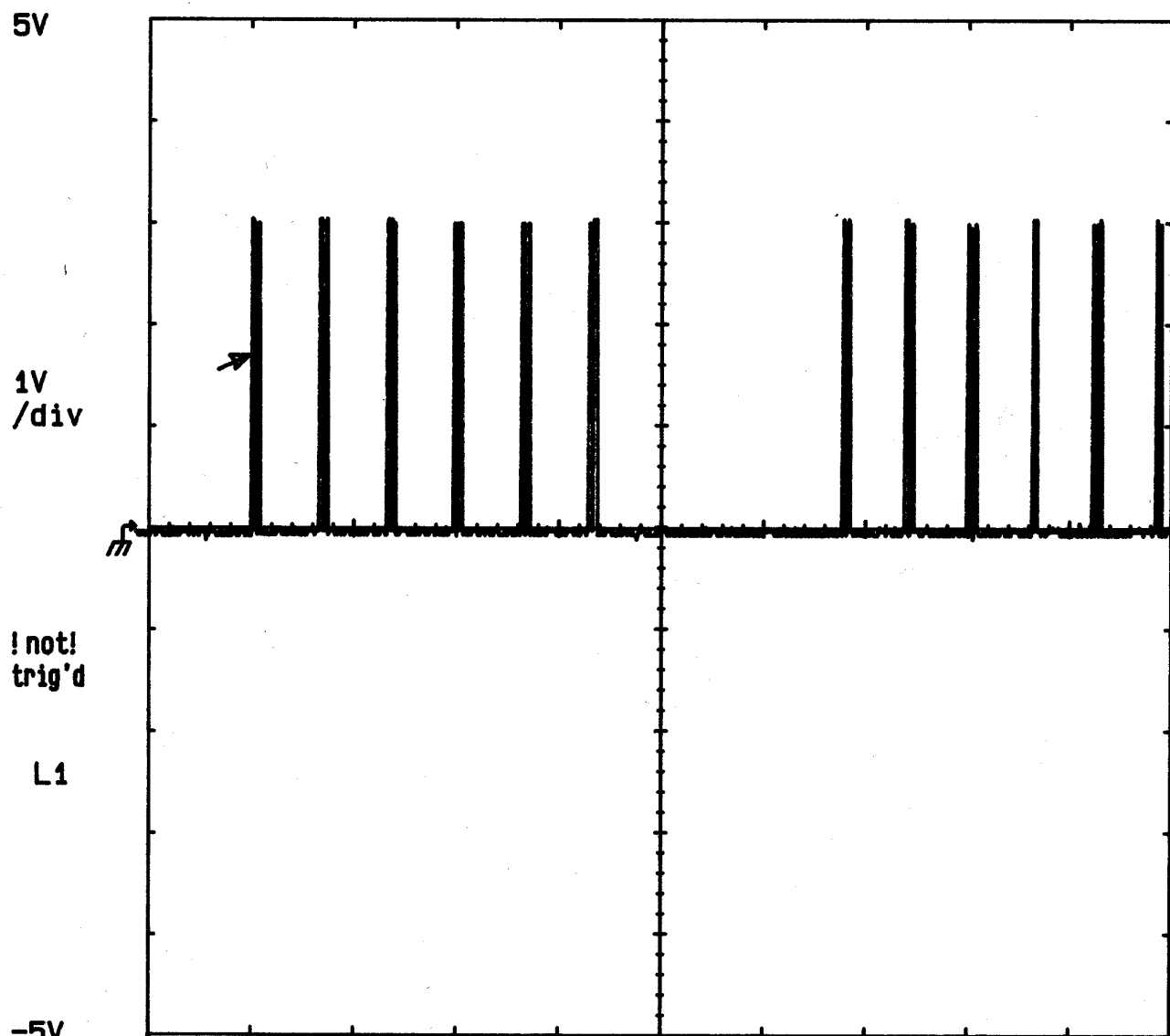
I Reply:

- 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).

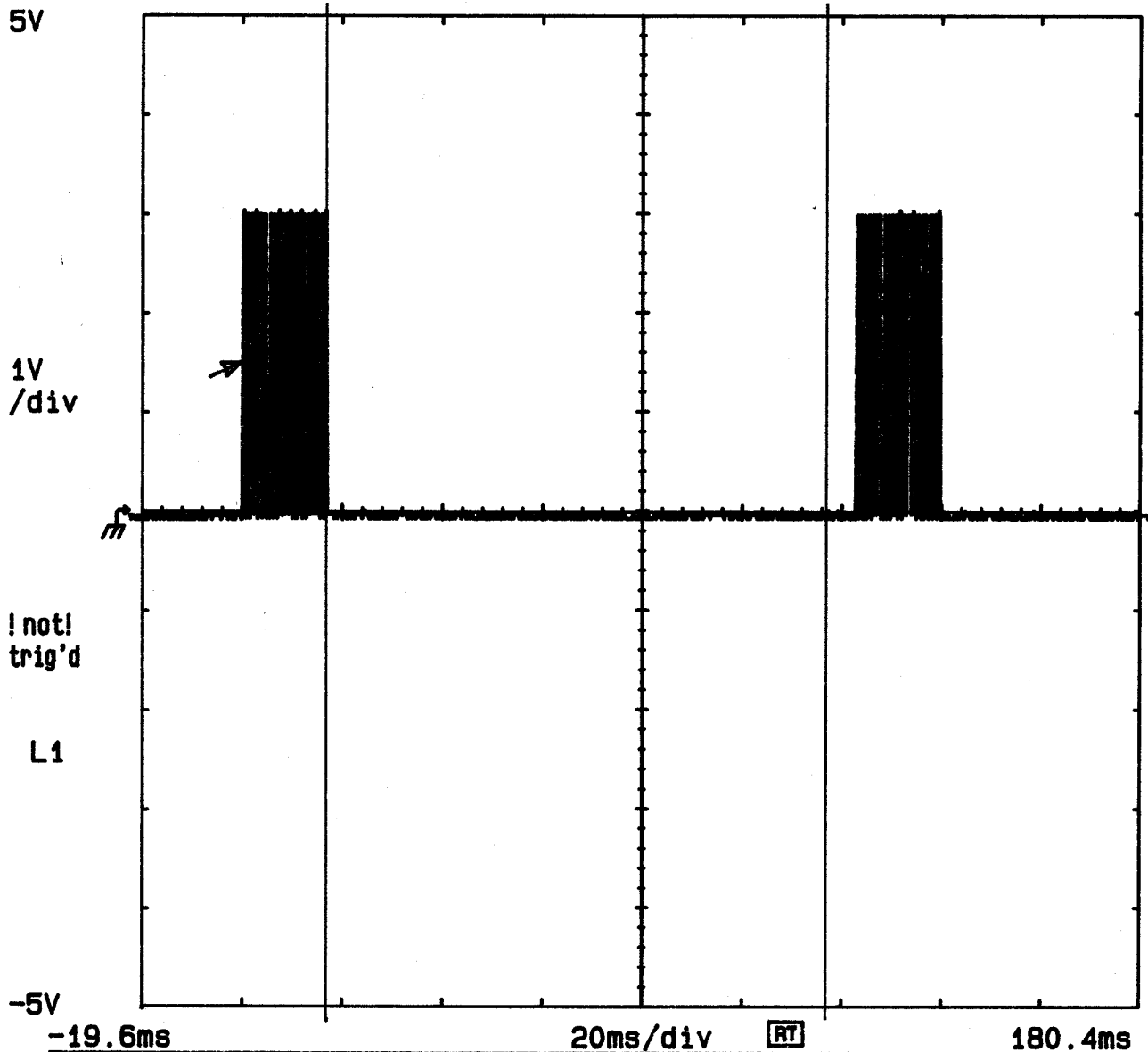
Best Regards,
Greg Barbato
for
Ken Addy

DSA 602 DIGITIZING SIGNAL ANALYZER

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



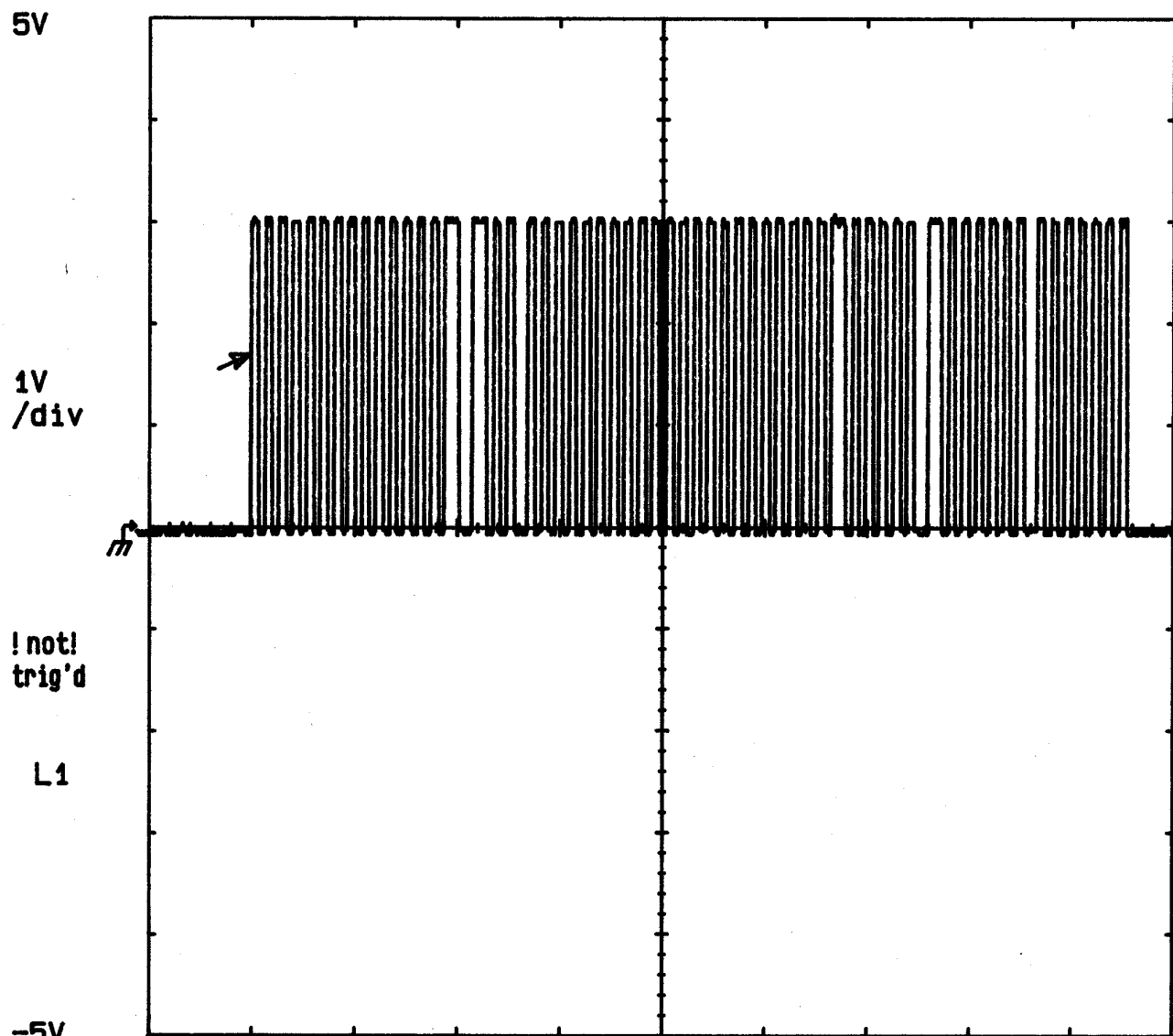
-196ms		200ms/div		1.804s	
Vertical Desc L1 Fast	Horizontal Desc Main 500S/sec	Acquire Desc Stopped	Graticules	Page to All Wfms Status	Rem Wfm 1 L1 Main
Input Parameters DC 500/100MHz	FFT Control dBm Rectang	Act on Delta None	Main Size 200m s/div	Pan/ Zoom Off	Main Position -220m s



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

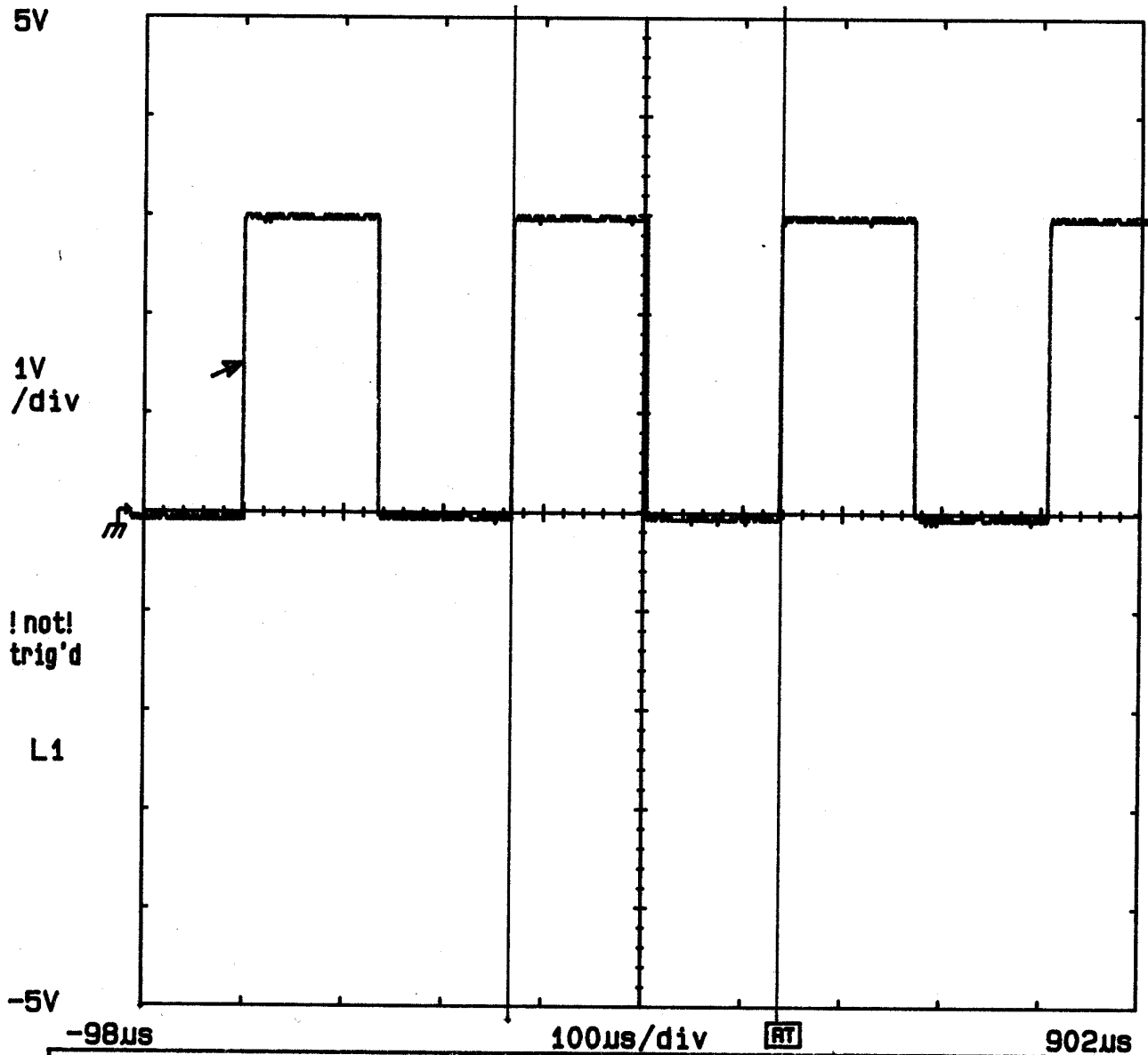


-1.96ms 2ms/div RT 18.04ms

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

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:

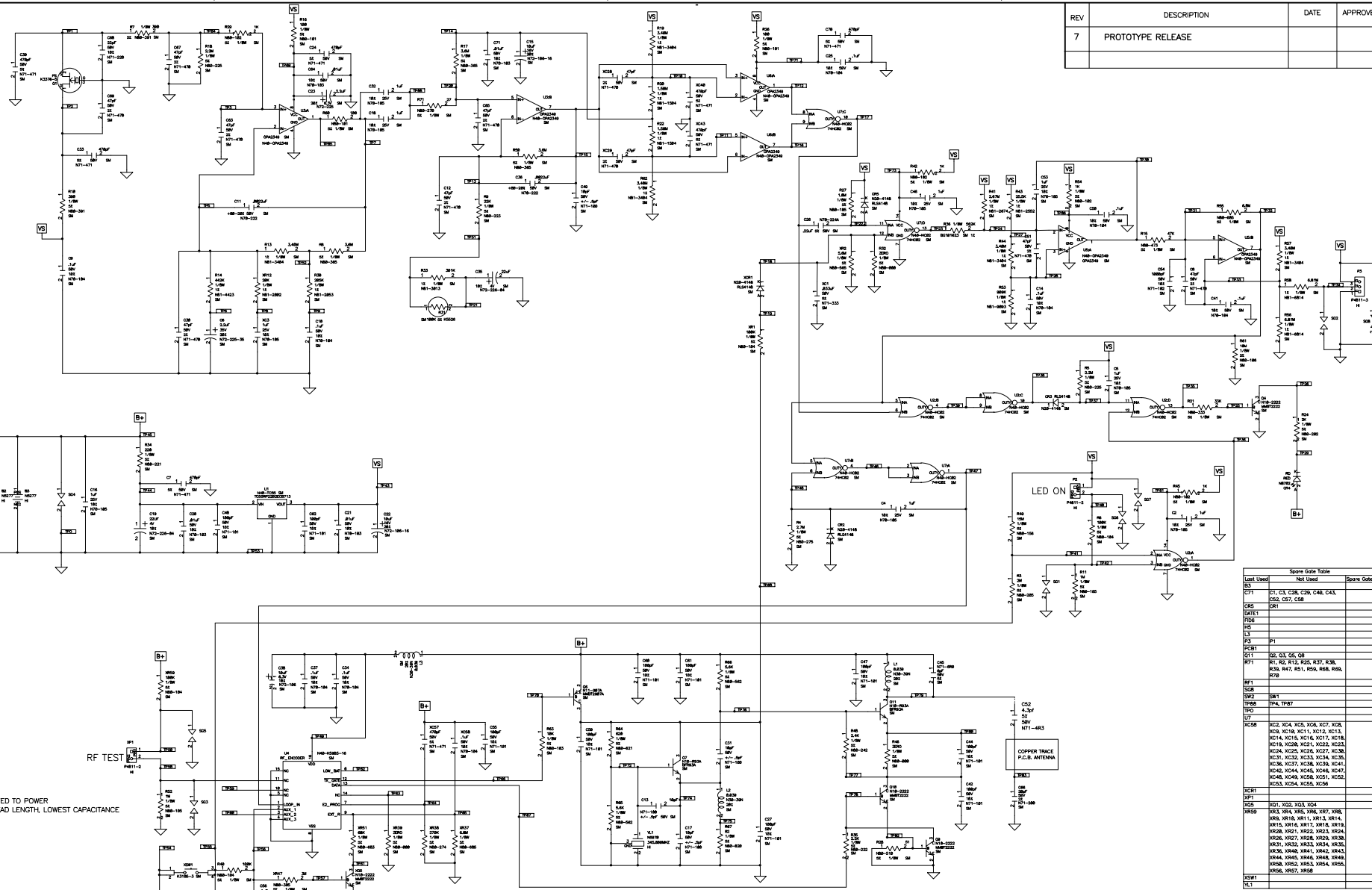
$64 \times 312.5 \text{ uSec} + (5 \times 150 \text{ mSec}) = 0.77 \text{ seconds}$

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 $2 \times (\text{supervision time}) + 2 = 3.54 \text{ seconds}$

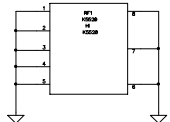
Summary: - Duty cycle = 10%

On airtime = 3.54 seconds



REV	DESCRIPTION	DATE	APPROVED
7	PROTOTYPE RELEASE		

NOTE: CAPS SHALL BE DIRECTLY CONNECTED TO POWER AND GROUND. PINS ON IC WITH MINIMAL LEAD LENGTH. LOWEST CAPACITANCE VALUE CLOSEST TO IC.



Parts List		
Part	Value	Notes
IC1	74VHC00	
IC2	74VHC04	
IC3	74VHC125	
IC4	74VHC14	
IC5	74VHC15	
IC6	74VHC16	
IC7	74VHC17	
IC8	74VHC18	
IC9	74VHC19	
IC10	74VHC20	
IC11	74VHC21	
IC12	74VHC22	
IC13	74VHC23	
IC14	74VHC24	
IC15	74VHC25	
IC16	74VHC26	
IC17	74VHC27	
IC18	74VHC28	
IC19	74VHC29	
IC20	74VHC30	
IC21	74VHC31	
IC22	74VHC32	
IC23	74VHC33	
IC24	74VHC34	
IC25	74VHC35	
IC26	74VHC36	
IC27	74VHC37	
IC28	74VHC38	
IC29	74VHC39	
IC30	74VHC40	
IC31	74VHC41	
IC32	74VHC42	
IC33	74VHC43	
IC34	74VHC44	
IC35	74VHC45	
IC36	74VHC46	
IC37	74VHC47	
IC38	74VHC48	
IC39	74VHC49	
IC40	74VHC50	
IC41	74VHC51	
IC42	74VHC52	
IC43	74VHC53	
IC44	74VHC54	
IC45	74VHC55	
IC46	74VHC56	
IC47	74VHC57	
IC48	74VHC58	
IC49	74VHC59	
IC50	74VHC60	
IC51	74VHC61	
IC52	74VHC62	
IC53	74VHC63	
IC54	74VHC64	
IC55	74VHC65	
IC56	74VHC66	
IC57	74VHC67	
IC58	74VHC68	
IC59	74VHC69	
IC60	74VHC70	
IC61	74VHC71	
IC62	74VHC72	
IC63	74VHC73	
IC64	74VHC74	
IC65	74VHC75	
IC66	74VHC76	
IC67	74VHC77	
IC68	74VHC78	
IC69	74VHC79	
IC70	74VHC80	
IC71	74VHC81	
IC72	74VHC82	
IC73	74VHC83	
IC74	74VHC84	
IC75	74VHC85	
IC76	74VHC86	
IC77	74VHC87	
IC78	74VHC88	
IC79	74VHC89	
IC80	74VHC90	
IC81	74VHC91	
IC82	74VHC92	
IC83	74VHC93	
IC84	74VHC94	
IC85	74VHC95	
IC86	74VHC96	
IC87	74VHC97	
IC88	74VHC98	
IC89	74VHC99	
IC90	74VHC100	
IC91	74VHC101	
IC92	74VHC102	
IC93	74VHC103	
IC94	74VHC104	
IC95	74VHC105	
IC96	74VHC106	
IC97	74VHC107	
IC98	74VHC108	
IC99	74VHC109	
IC100	74VHC110	
IC101	74VHC111	
IC102	74VHC112	
IC103	74VHC113	
IC104	74VHC114	
IC105	74VHC115	
IC106	74VHC116	
IC107	74VHC117	
IC108	74VHC118	
IC109	74VHC119	
IC110	74VHC120	
IC111	74VHC121	
IC112	74VHC122	
IC113	74VHC123	
IC114	74VHC124	
IC115	74VHC125	
IC116	74VHC126	
IC117	74VHC127	
IC118	74VHC128	
IC119	74VHC129	
IC120	74VHC130	
IC121	74VHC131	
IC122	74VHC132	
IC123	74VHC133	
IC124	74VHC134	
IC125	74VHC135	
IC126	74VHC136	
IC127	74VHC137	
IC128	74VHC138	
IC129	74VHC139	
IC130	74VHC140	
IC131	74VHC141	
IC132	74VHC142	
IC133	74VHC143	
IC134	74VHC144	
IC135	74VHC145	
IC136	74VHC146	
IC137	74VHC147	
IC138	74VHC148	
IC139	74VHC149	
IC140	74VHC150	
IC141	74VHC151	
IC142	74VHC152	
IC143	74VHC153	
IC144	74VHC154	
IC145	74VHC155	
IC146	74VHC156	
IC147	74VHC157	
IC148	74VHC158	
IC149	74VHC159	
IC150	74VHC160	
IC151	74VHC161	
IC152	74VHC162	
IC153	74VHC163	
IC154	74VHC164	
IC155	74VHC165	
IC156	74VHC166	
IC157	74VHC167	
IC158	74VHC168	
IC159	74VHC169	
IC160	74VHC170	
IC161	74VHC171	
IC162	74VHC172	
IC163	74VHC173	
IC164	74VHC174	
IC165	74VHC175	
IC166	74VHC176	
IC167	74VHC177	
IC168	74VHC178	
IC169	74VHC179	
IC170	74VHC180	
IC171	74VHC181	
IC172	74VHC182	
IC173	74VHC183	
IC174	74VHC184	
IC175	74VHC185	
IC176	74VHC186	
IC177	74VHC187	
IC178	74VHC188	
IC179	74VHC189	
IC180	74VHC190	
IC181	74VHC191	
IC182	74VHC192	
IC183	74VHC193	
IC184	74VHC194	
IC185	74VHC195	
IC186	74VHC196	
IC187	74VHC197	
IC188	74VHC198	
IC189	74VHC199	
IC190	74VHC200	
IC191	74VHC201	
IC192	74VHC202	
IC193	74VHC203	
IC194	74VHC204	
IC195	74VHC205	
IC196	74VHC206	
IC197	74VHC207	
IC198	74VHC208	
IC199	74VHC209	
IC200	74VHC210	
IC201	74VHC211	
IC202	74VHC212	
IC203	74VHC213	
IC204	74VHC214	
IC205	74VHC215	
IC206	74VHC216	
IC207	74VHC217	
IC208	74VHC218	
IC209	74VHC219	
IC210	74VHC220	
IC211	74VHC221	
IC212	74VHC222	
IC213	74VHC223	
IC214	74VHC224	
IC215	74VHC225	
IC216	74VHC226	
IC217	74VHC227	
IC218	74VHC228	
IC219	74VHC229	
IC220	74VHC230	
IC221	74VHC231	
IC222	74VHC232	
IC223	74VHC233	
IC224	74VHC234	
IC225	74VHC235	
IC226	74VHC236	
IC227	74VHC237	
IC228	74VHC238	
IC229	74VHC239	
IC230	74VHC240	
IC231	74VHC241	
IC232	74VHC242	
IC233	74VHC243	
IC234	74VHC244	
IC235	74VHC245	
IC236	74VHC246	
IC237	74VHC247	
IC238	74VHC248	
IC239	74VHC249	
IC240	74VHC250	
IC241	74VHC251	
IC242	74VHC252	
IC243	74VHC253	
IC244	74VHC254	
IC245	74VHC255	
IC246	74VHC256	
IC247	74VHC257	
IC248	74VHC258	
IC249	74VHC259	
IC250	74VHC260	
IC251	74VHC261	
IC252	74VHC262	
IC253	74VHC263	
IC254	74VHC264	
IC255	74VHC265	
IC256	74VHC266	
IC257	74VHC267	
IC258	74VHC268	
IC259	74VHC269	
IC260	74VHC270	
IC261	74VHC271	
IC262	74VHC272	
IC263	74VHC273	
IC264	74VHC274	
IC265	74VHC275	
IC266	74VHC276	
IC267	74VHC277	
IC268	74VHC278	
IC269	74VHC279	
IC270	74VHC280	
IC271	74VHC281	
IC272	74VHC282	
IC273	74VHC283	
IC274	74VHC284	
IC275	74VHC285	
IC276	74VHC286	
IC277	74VHC287	
IC278	74VHC288	
IC279	74VHC289	
IC280	74VHC290	
IC281	74VHC291	
IC282	74VHC292	
IC283	74VHC293	
IC284	74VHC294	
IC285	74VHC295	
IC286	74VHC296	
IC287	74VHC297	
IC288	74VHC298	
IC289	74VHC299	
IC290	74VHC300	
IC291	74VHC301	
IC292	74VHC302	
IC293	74VHC303	
IC294	74VHC304	
IC295	74VHC305	
IC296	74VHC306	
IC297	74VHC307	
IC298	74VHC308	
IC299	74VHC309	
IC300	74VHC310	
IC301	74VHC311	
IC302	74VHC312	
IC303	74VHC313	
IC304	74VHC314	
IC305	74VHC315	
IC306	74VHC316	
IC307	74VHC317	
IC308	74VHC318	
IC309	74VHC319	
IC310	74VHC320	
IC311	74VHC321	
IC312	74VHC322	
IC313	74VHC323	
IC314	74VHC324	
IC315	74VHC325	
IC316	74VHC326	
IC317	74VHC327	
IC318	74VHC328	
IC319	74VHC329	
IC320	74VHC330	
IC321	74VHC331	
IC322	74VHC332	
IC323	74VHC333	
IC324	74VHC334	
IC325	74VHC335	
IC326	74VHC336	
IC327	74VHC337	
IC328	74VHC338	
IC329	74VHC339	
IC330	74VHC340	
IC331	74VHC341	
IC332	74VHC342	
IC333	74VHC343	
IC334	74VHC344	
IC335	74VHC345	
IC336	74VHC346	
IC337	74VHC347	
IC338	74VHC348	
IC339	74VHC349	
IC340	74VHC350	
IC341	74VHC351	
IC342	74VHC352	
IC343	74VHC353	
IC344	74VHC354	
IC345	74VHC355	
IC346	74VHC356	
IC347	74VHC357	
IC348	74VHC358	
IC349	74VHC359	
IC350	74VHC360	
IC351	74VHC361	
IC352	74VHC362	
IC353	74VHC363	
IC354	74VHC364	
IC355	74VHC365	
IC356	74VHC366	
IC357	74VHC367	
IC358	74VHC368	
IC359	74VHC369	
IC360	74VHC370	
IC361	74VHC371	
IC362	74VHC372	
IC363	74VHC373	
IC364	74VHC374	
IC365	74VHC375	
IC366	74VHC376	
IC367	74VHC377	
IC368	74VHC378	
IC369	74VHC379	
IC370	74VHC380	
IC371	74VHC381	
IC372	74VHC382	
IC373	74VHC383	
IC374	74VHC384	
IC375	74VHC385	
IC376	74VHC386	
IC377	74VHC387	
IC378	74VHC388	
IC379	74VHC389	
IC380	74VHC390	
IC381	74VHC391	
IC382	74VHC392	
IC383	74VHC393	
IC384	74VHC394	
IC385	74VHC395	
IC386	74VHC396	
IC387	74VHC397	
IC388	74VHC398	
IC389	74VHC399	
IC390	74VHC400	
IC391	74VHC401	
IC392	74VHC402	
IC393	74VHC403	
IC394	74VHC404	
IC395	74VHC405	
IC396	74VHC406	
IC397	74VHC407	
IC398	74VHC408	
IC399	74VHC409	
IC400	74VHC410	
IC401	74VHC411	
IC402	74VHC412	
IC403	74VHC413	
IC404	74VHC414	
IC405	74VHC415	
IC406	74VHC416	
IC407	74VHC417	
IC408	74VHC418	
IC409	74VHC419	
IC410	74VHC420	
IC411	74VHC421	
IC412	74VHC422	
IC413	74VHC423	
IC414	74VHC424	
IC415	74VHC425	
IC416	74VHC426	
IC417	74VHC427	
IC418	74VHC428	
IC419	74VHC429	
IC420	74VHC430	

