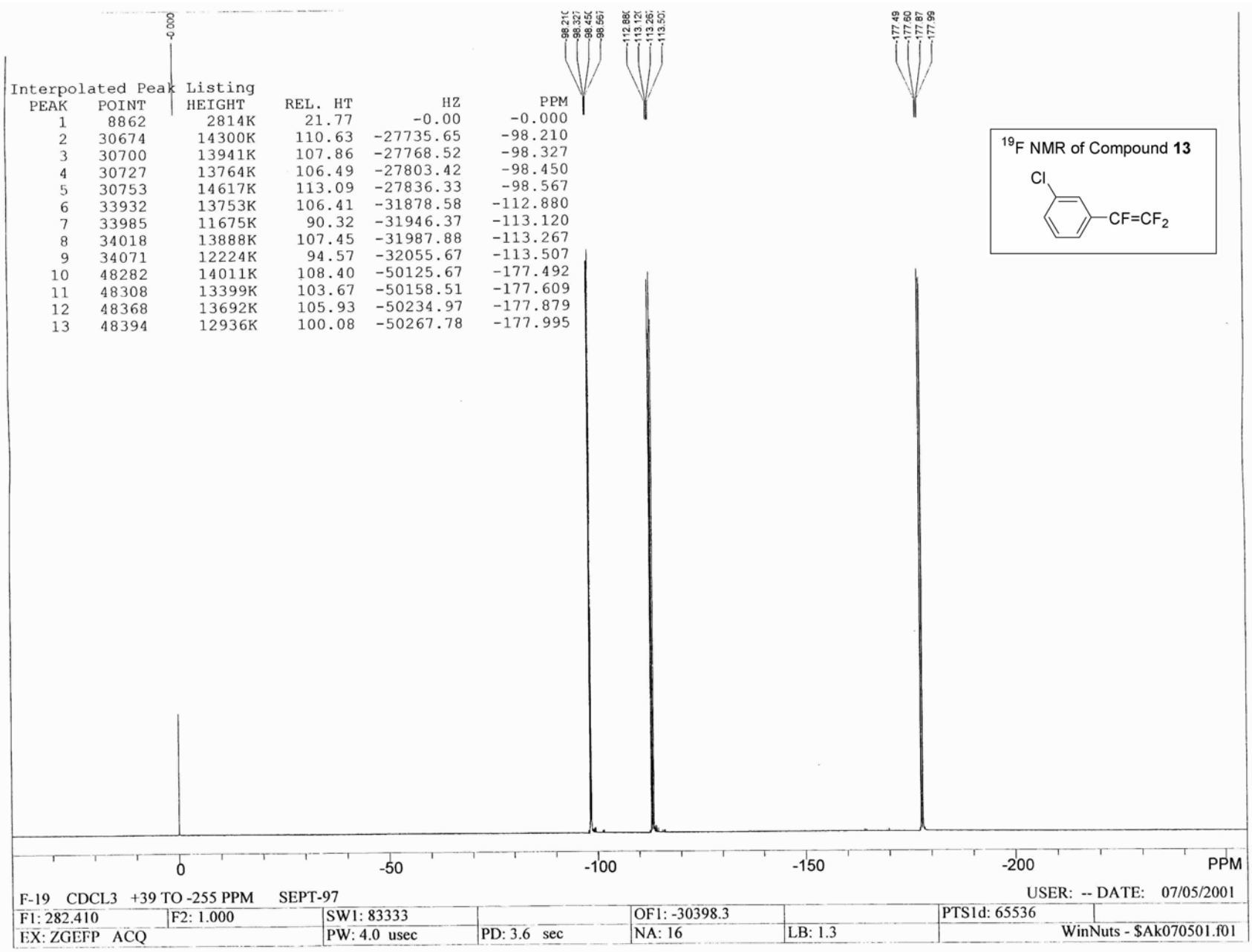
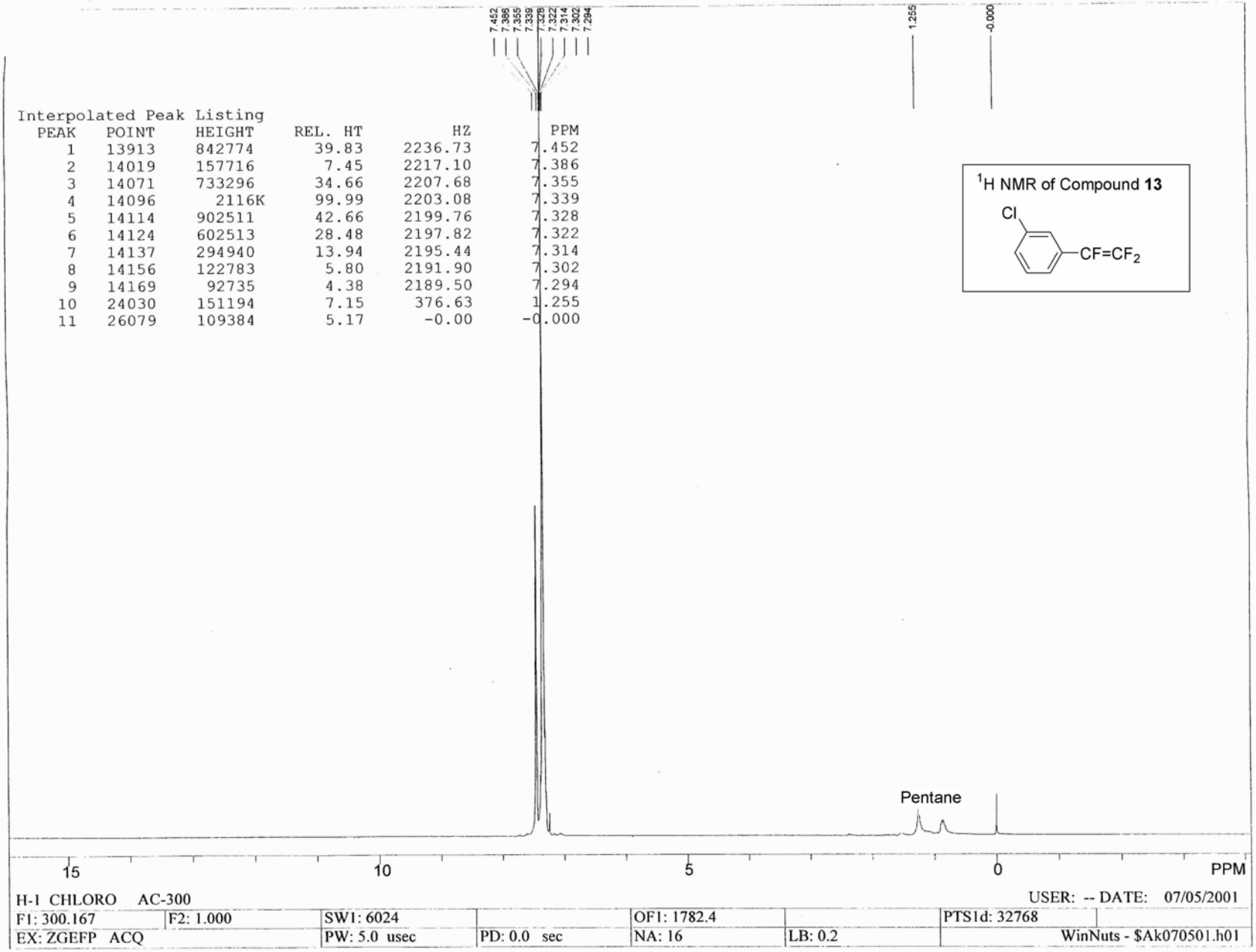


Interpolated Peak Listing

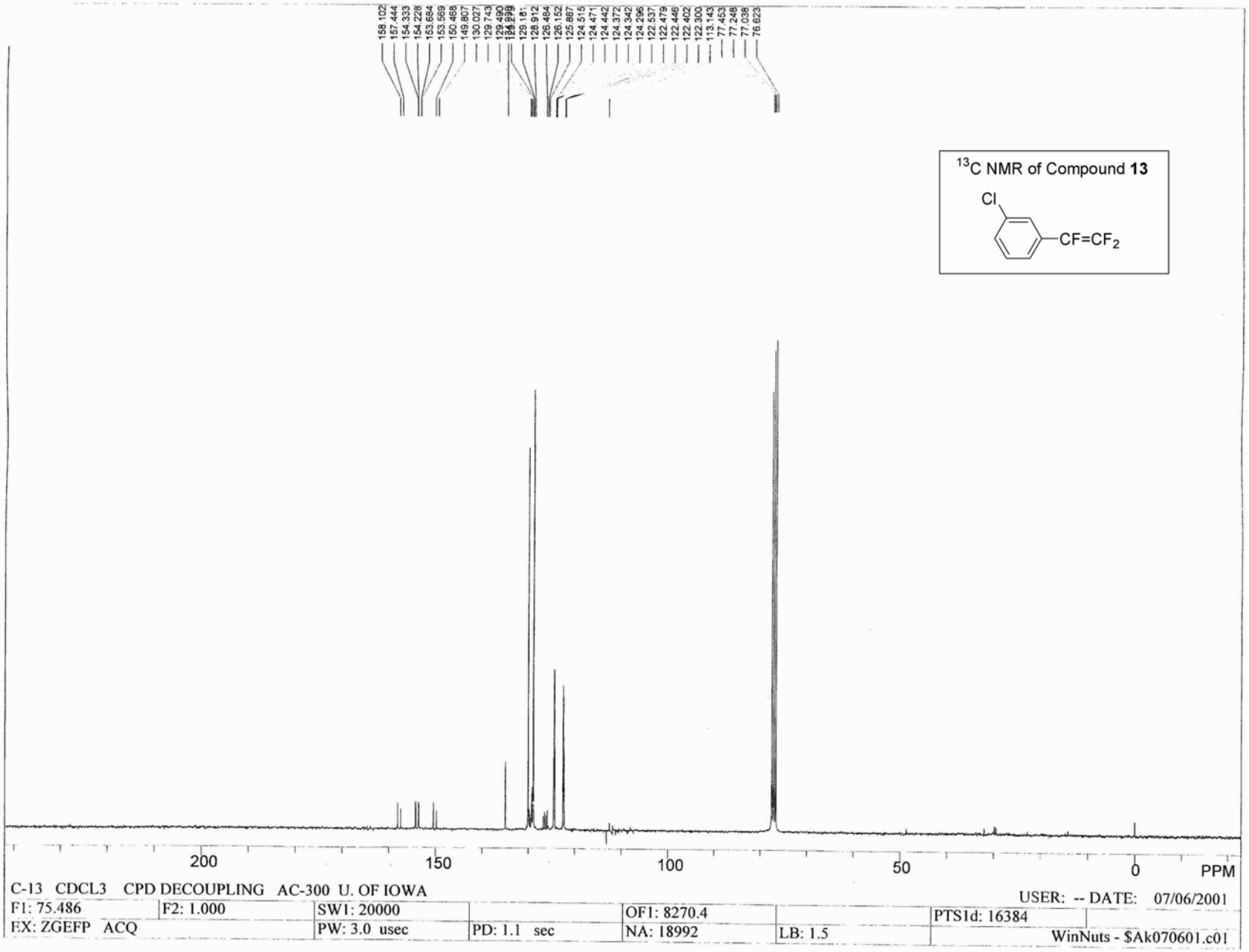
PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	8862	2814K	21.77	-0.00	-0.000
2	30674	14300K	110.63	-27735.65	-98.210
3	30700	13941K	107.86	-27768.52	-98.327
4	30727	13764K	106.49	-27803.42	-98.450
5	30753	14617K	113.09	-27836.33	-98.567
6	33932	13753K	106.41	-31878.58	-112.880
7	33985	11675K	90.32	-31946.37	-113.120
8	34018	13888K	107.45	-31987.88	-113.267
9	34071	12224K	94.57	-32055.67	-113.507
10	48282	14011K	108.40	-50125.67	-177.492
11	48308	13399K	103.67	-50158.51	-177.609
12	48368	13692K	105.93	-50234.97	-177.879
13	48394	12936K	100.08	-50267.78	-177.995

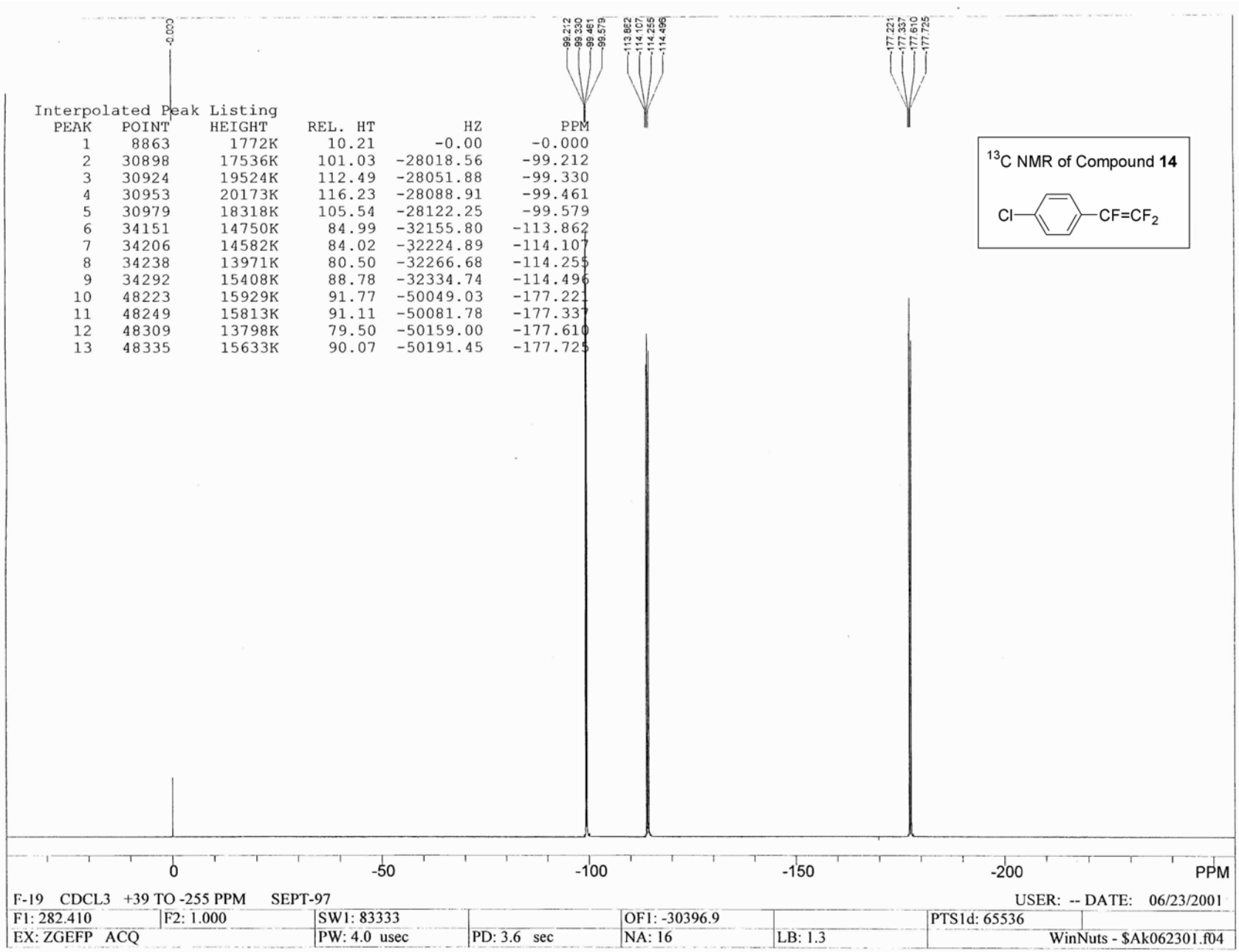


Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	13913	842774	39.83	2236.73	7.452
2	14019	157716	7.45	2217.10	7.386
3	14071	733296	34.66	2207.68	7.355
4	14096	2116K	99.99	2203.08	7.339
5	14114	902511	42.66	2199.76	7.328
6	14124	602513	28.48	2197.82	7.322
7	14137	294940	13.94	2195.44	7.314
8	14156	122783	5.80	2191.90	7.302
9	14169	92735	4.38	2189.50	7.294
10	24030	151194	7.15	376.63	1.255
11	26079	109384	5.17	-0.00	-0.000

^{1}H NMR of Compound **13**


158.102
157.444
154.333
154.228
153.684
153.569
150.468
149.807
130.027
129.743
129.181
128.912
126.484
126.152
125.887
124.515
124.471
124.442
124.372
124.342
124.296
122.537
122.479
122.446
122.402
122.300
113.143
77.453
77.248
77.038
76.623
^{13}C NMR of Compound **13**
Cl
CF=CF$_2$
200
150
100
50
0
PPM
C-13 CDCL3 CPD DECOUPLING AC-300 U. OF IOWA
USER: -- DATE: 07/06/2001
F1: 75.486
F2: 1.000
SW1: 20000
OF1: 8270.4
PTS1d: 16384
EX: ZGEFP ACQ
PW: 3.0 usec
PD: 1.1 sec
NA: 18992
LB: 1.5
WinNuts - $Ak070601.c01



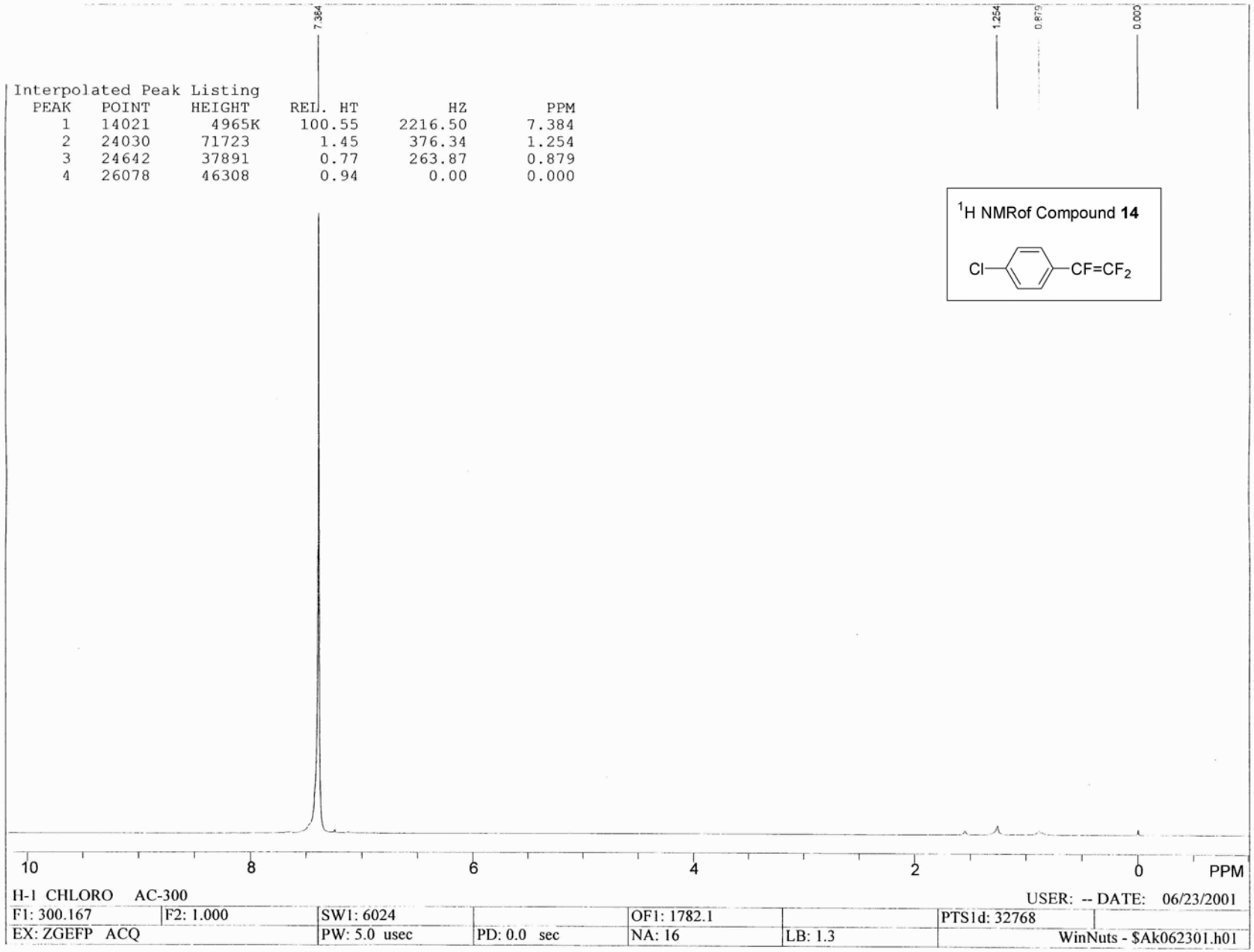
Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	8863	1772K	10.21	-0.00	-0.000
2	30898	17536K	101.03	-28018.56	-99.212
3	30924	19524K	112.49	-28051.88	-99.330
4	30953	20173K	116.23	-28088.91	-99.461
5	30979	18318K	105.54	-28122.25	-99.579
6	34151	14750K	84.99	-32155.80	-113.862
7	34206	14582K	84.02	-32224.89	-114.107
8	34238	13971K	80.50	-32266.68	-114.255
9	34292	15408K	88.78	-32334.74	-114.496
10	48223	15929K	91.77	-50049.03	-177.221
11	48249	15813K	91.11	-50081.78	-177.337
12	48309	13798K	79.50	-50159.00	-177.610
13	48335	15633K	90.07	-50191.45	-177.725

^{13}C NMR of Compound **14**

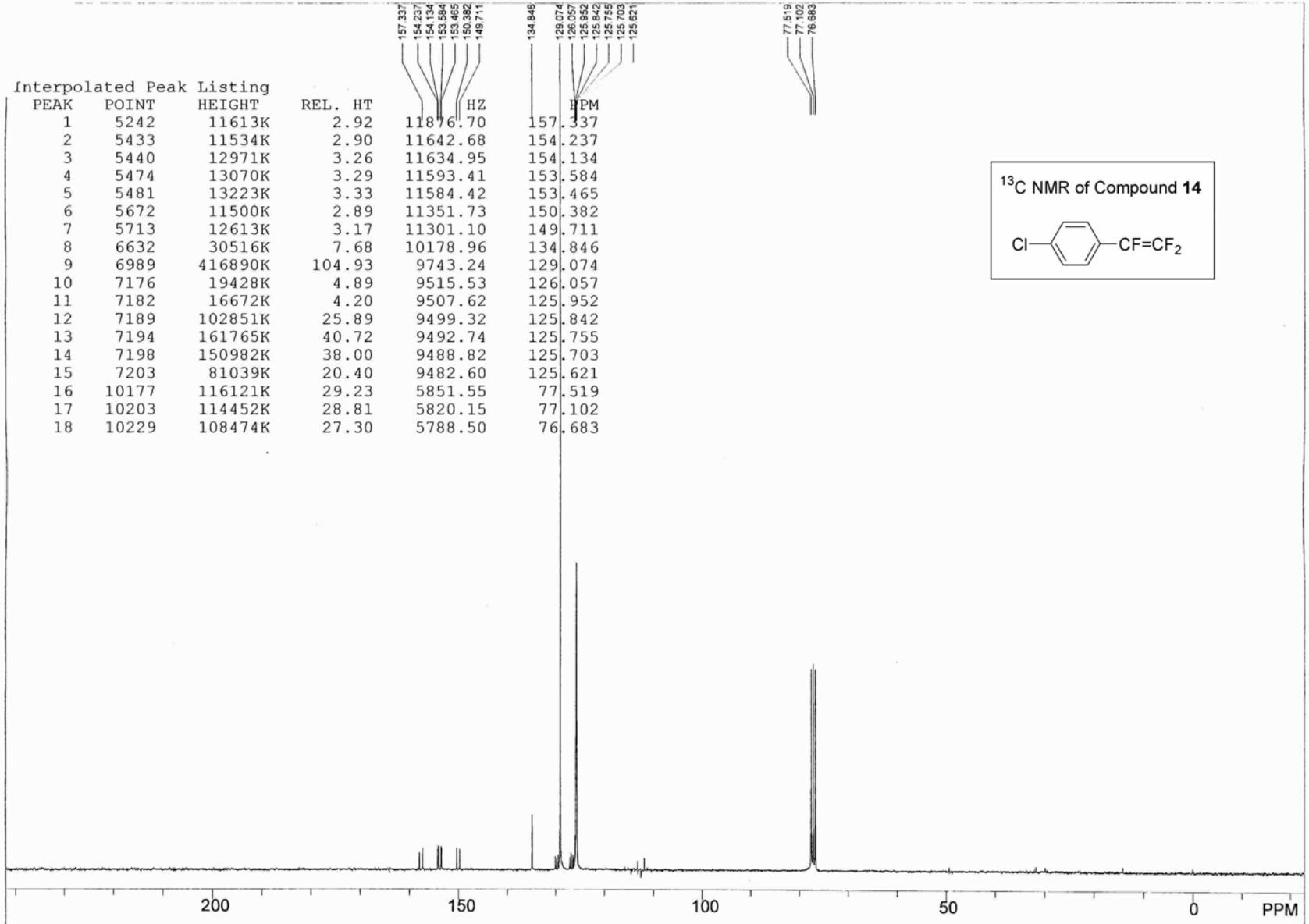
Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	14021	4965K	100.55	2216.50	7.384
2	24030	71723	1.45	376.34	1.254
3	24642	37891	0.77	263.87	0.879
4	26078	46308	0.94	0.00	0.000



Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	5242	11613K	2.92	11876.70	157.337
2	5433	11534K	2.90	11642.68	154.237
3	5440	12971K	3.26	11634.95	154.134
4	5474	13070K	3.29	11593.41	153.584
5	5481	13223K	3.33	11584.42	153.465
6	5672	11500K	2.89	11351.73	150.382
7	5713	12613K	3.17	11301.10	149.711
8	6632	30516K	7.68	10178.96	134.846
9	6989	416890K	104.93	9743.24	129.074
10	7176	19428K	4.89	9515.53	126.057
11	7182	16672K	4.20	9507.62	125.952
12	7189	102851K	25.89	9499.32	125.842
13	7194	161765K	40.72	9492.74	125.755
14	7198	150982K	38.00	9488.82	125.703
15	7203	81039K	20.40	9482.60	125.621
16	10177	116121K	29.23	5851.55	77.519
17	10203	114452K	28.81	5820.15	77.102
18	10229	108474K	27.30	5788.50	76.683

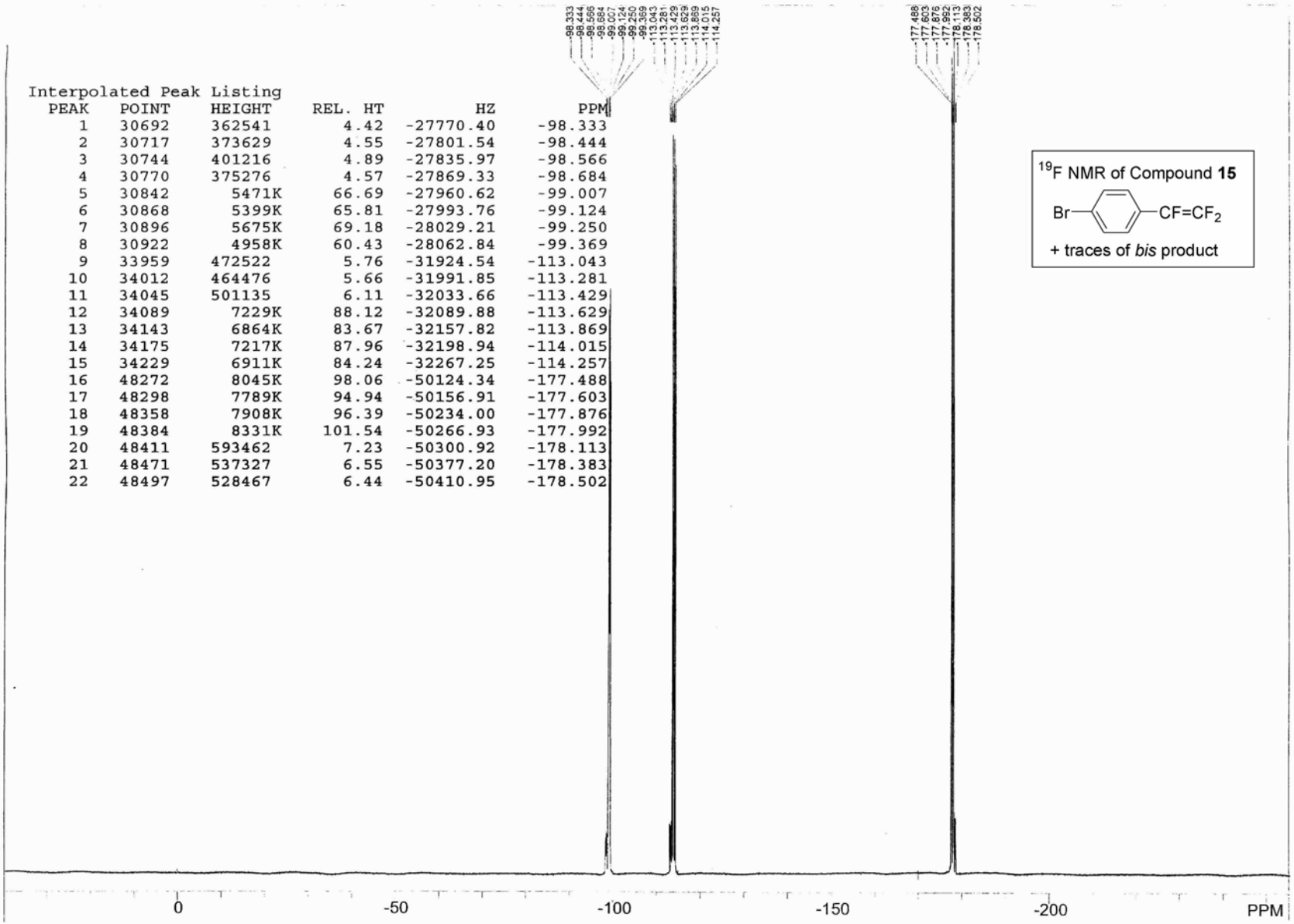


C-13 CDCL3 CPD DECOUPLING AC-300 U. OF IOWA USER: -- DATE: 06/23/2001

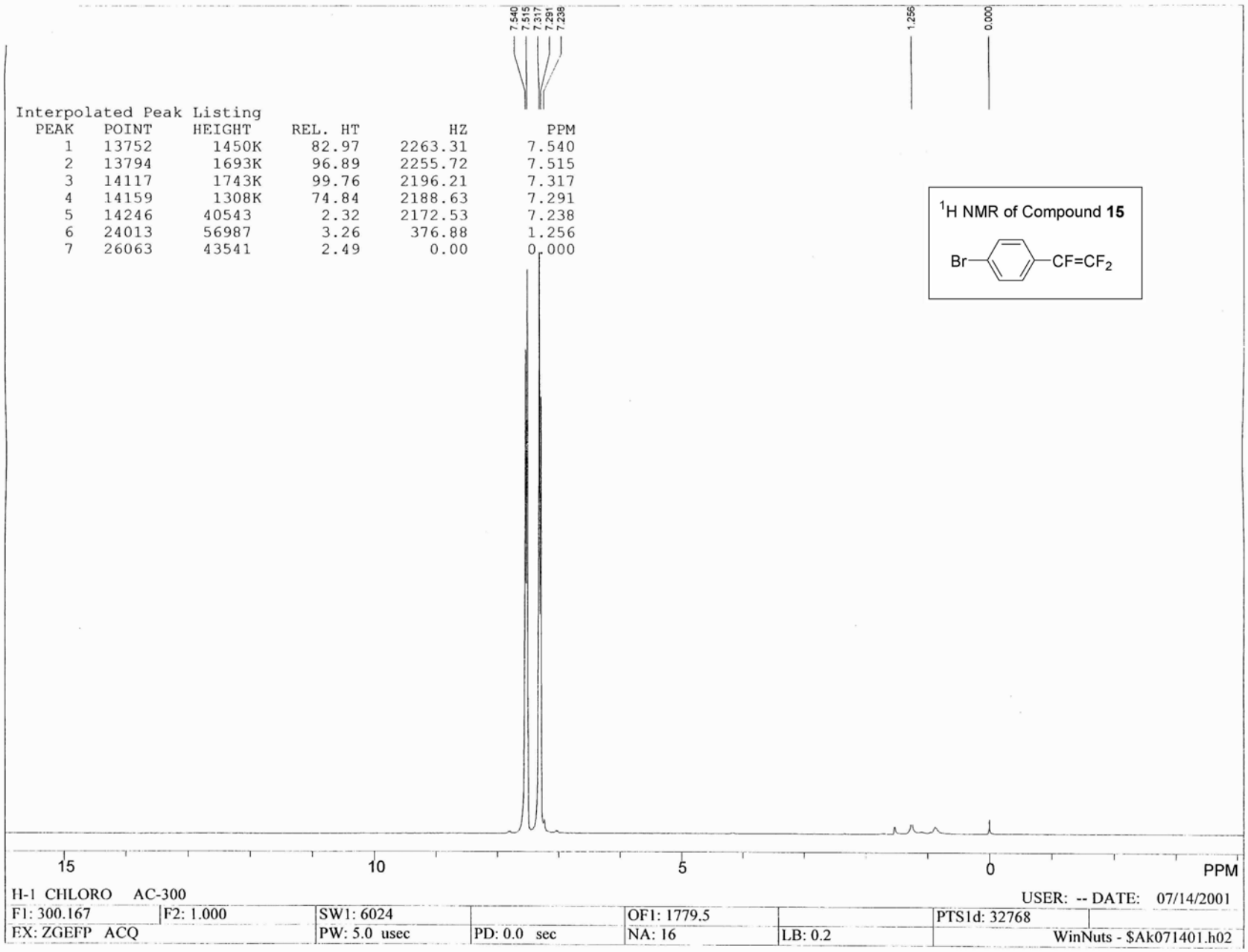
F1: 75.486	F2: 1.000	SW1: 20000		OF1: 8274.8		PTS1d: 16384
EX: ZGEFP ACQ		PW: 3.0 usec	PD: 1.1 sec	NA: 6001	LB: 1.5	WinNuts - $Ak062301.c01

Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	30692	362541	4.42	-27770.40	-98.333
2	30717	373629	4.55	-27801.54	-98.444
3	30744	401216	4.89	-27835.97	-98.566
4	30770	375276	4.57	-27869.33	-98.684
5	30842	5471K	66.69	-27960.62	-99.007
6	30868	5399K	65.81	-27993.76	-99.124
7	30896	5675K	69.18	-28029.21	-99.250
8	30922	4958K	60.43	-28062.84	-99.369
9	33959	472522	5.76	-31924.54	-113.043
10	34012	464476	5.66	-31991.85	-113.281
11	34045	501135	6.11	-32033.66	-113.429
12	34089	7229K	88.12	-32089.88	-113.629
13	34143	6864K	83.67	-32157.82	-113.869
14	34175	7217K	87.96	-32198.94	-114.015
15	34229	6911K	84.24	-32267.25	-114.257
16	48272	8045K	98.06	-50124.34	-177.488
17	48298	7789K	94.94	-50156.91	-177.603
18	48358	7908K	96.39	-50234.00	-177.876
19	48384	8331K	101.54	-50266.93	-177.992
20	48411	593462	7.23	-50300.92	-178.113
21	48471	537327	6.55	-50377.20	-178.383
22	48497	528467	6.44	-50410.95	-178.502



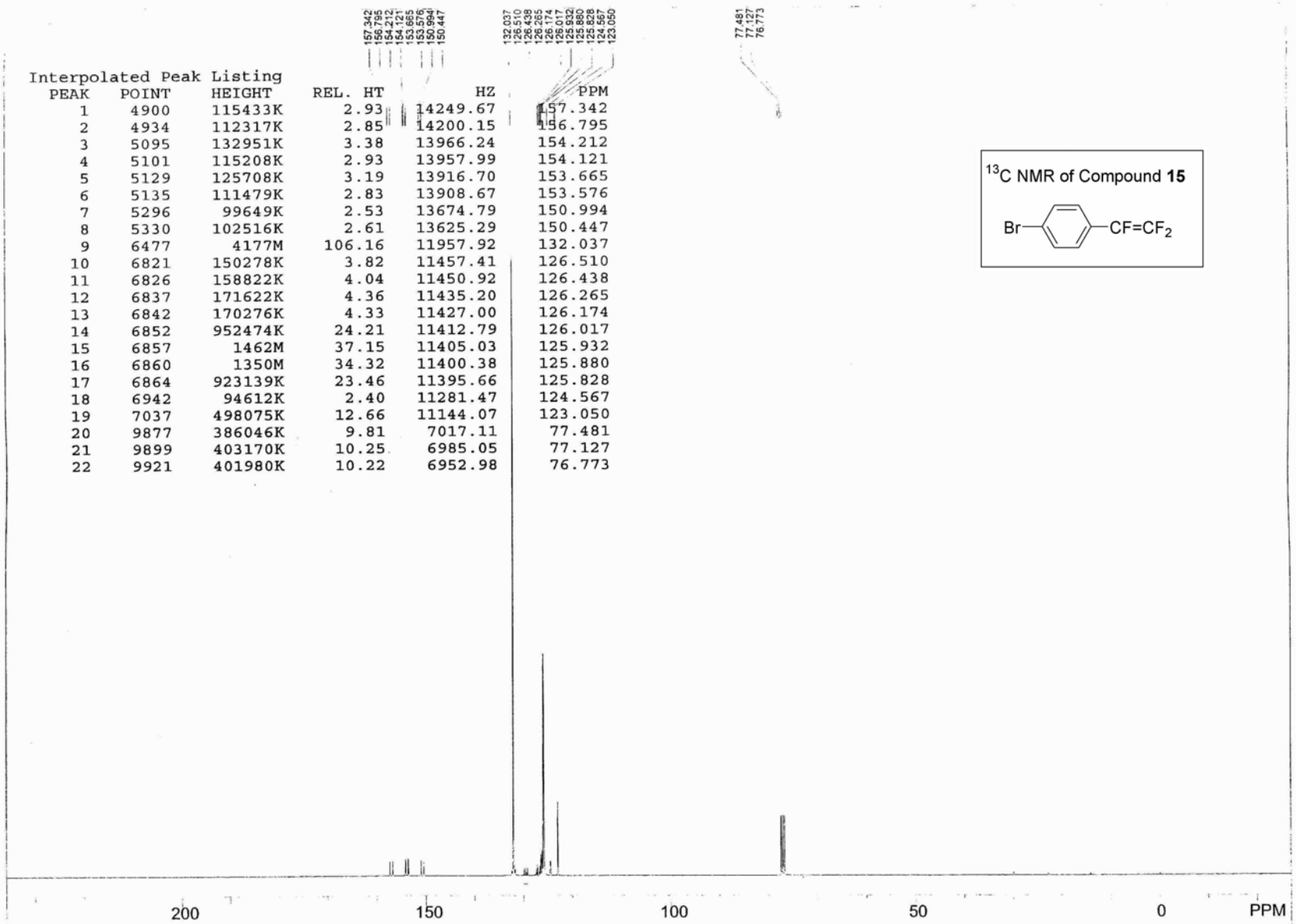
F-19 CDCL3 +39 TO -255 PPM SEPT-97 USER: -- DATE: 07/14/2001
F1: 282.410 F2: 1.000 SW1: 83333 OF1: -30409.8 PTS1d: 65536
EX: ZGEFP ACQ PW: 4.0 usec PD: 0.0 sec NA: 16 LB: 1.3 WinNuts - $Ak071401.f03



Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	13752	1450K	82.97	2263.31	7.540
2	13794	1693K	96.89	2255.72	7.515
3	14117	1743K	99.76	2196.21	7.317
4	14159	1308K	74.84	2188.63	7.291
5	14246	40543	2.32	2172.53	7.238
6	24013	56987	3.26	376.88	1.256
7	26063	43541	2.49	0.00	0.000

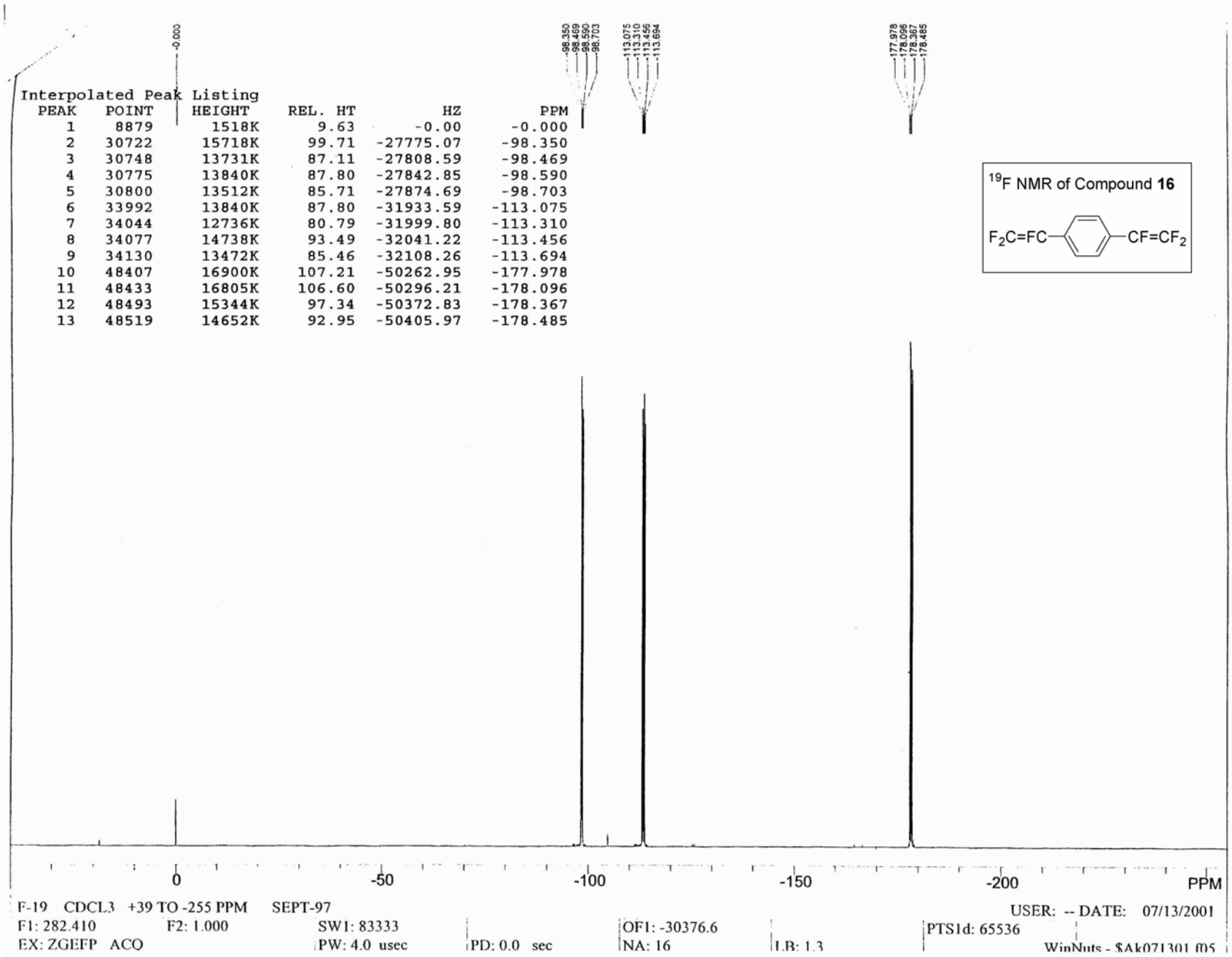
^{1}H NMR of Compound **15**



Interpolated Peak Listing

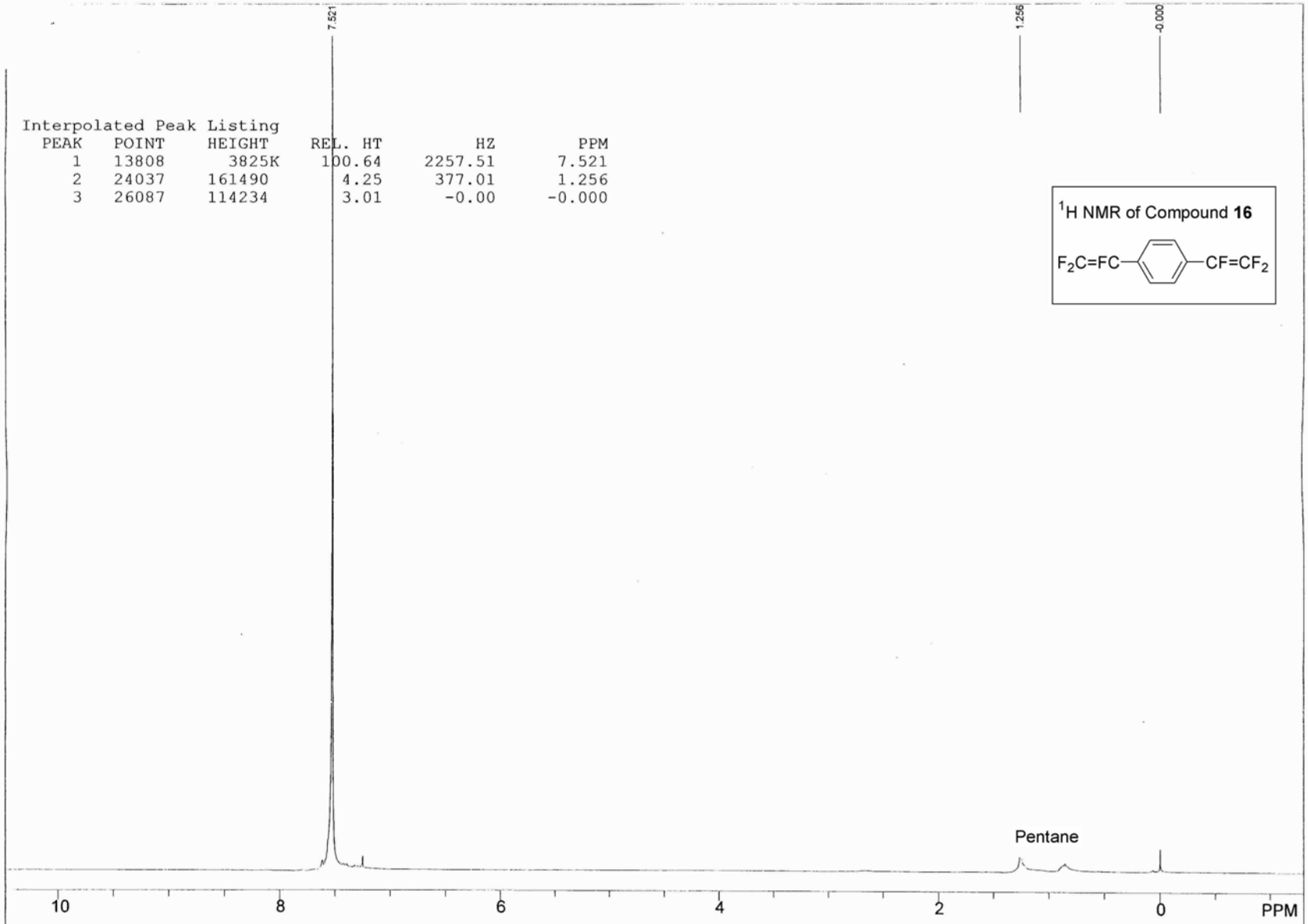
PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	4900	115433K	2.93	14249.67	157.342
2	4934	112317K	2.85	14200.15	156.795
3	5095	132951K	3.38	13966.24	154.212
4	5101	115208K	2.93	13957.99	154.121
5	5129	125708K	3.19	13916.70	153.665
6	5135	111479K	2.83	13908.67	153.576
7	5296	99649K	2.53	13674.79	150.994
8	5330	102516K	2.61	13625.29	150.447
9	6477	4177M	106.16	11957.92	132.037
10	6821	150278K	3.82	11457.41	126.510
11	6826	158822K	4.04	11450.92	126.438
12	6837	171622K	4.36	11435.20	126.265
13	6842	170276K	4.33	11427.00	126.174
14	6852	952474K	24.21	11412.79	126.017
15	6857	1462M	37.15	11405.03	125.932
16	6860	1350M	34.32	11400.38	125.880
17	6864	923139K	23.46	11395.66	125.828
18	6942	94612K	2.40	11281.47	124.567
19	7037	498075K	12.66	11144.07	123.050
20	9877	386046K	9.81	7017.11	77.481
21	9899	403170K	10.25	6985.05	77.127
22	9921	401980K	10.22	6952.98	76.773

C13 CDCL3 WM-360 U. OF IOWA USER: -- DATE: 07/15/2001
F1: 90.565 F2: 1.000 SW1: 23809 OF1: 9465.3 PTS1d: 16384
EX: SOLSUP PW: 6.0 usec PD: 0.0 sec NA: 20896 LB: 1.5 WinNuts - $Ak071501.c01



Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	8879	1518K	9.63	-0.00	-0.000
2	30722	15718K	99.71	-27775.07	-98.350
3	30748	13731K	87.11	-27808.59	-98.469
4	30775	13840K	87.80	-27842.85	-98.590
5	30800	13512K	85.71	-27874.69	-98.703
6	33992	13840K	87.80	-31933.59	-113.075
7	34044	12736K	80.79	-31999.80	-113.310
8	34077	14738K	93.49	-32041.22	-113.456
9	34130	13472K	85.46	-32108.26	-113.694
10	48407	16900K	107.21	-50262.95	-177.978
11	48433	16805K	106.60	-50296.21	-178.096
12	48493	15344K	97.34	-50372.83	-178.367
13	48519	14652K	92.95	-50405.97	-178.485



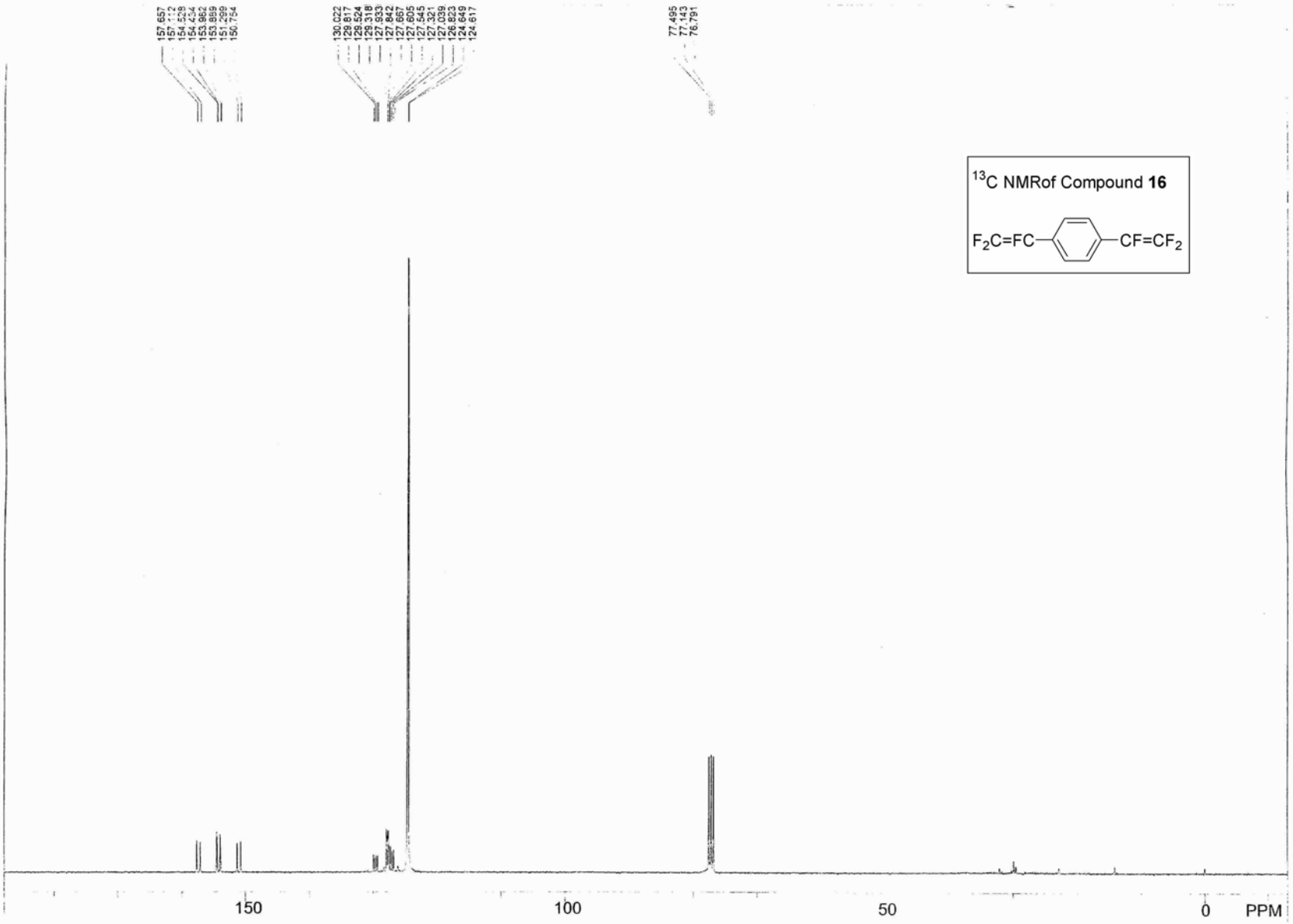
Interpolated Peak Listing

PEAK	POINT	HEIGHT	REL. HT	HZ	PPM
1	13808	3825K	100.64	2257.51	7.521
2	24037	161490	4.25	377.01	1.256
3	26087	114234	3.01	-0.00	-0.000

^{1}H NMR of Compound **16**

H-1 CHLORO AC-300 USER: -- DATE: 07/14/2001

F1: 300.167	F2: 1.000	SW1: 6024		OF1: 1783.9		PTS1d: 32768
EX: ZGEFP ACQ		PW: 5.0 usec	PD: 0.0 sec	NA: 16	LB: 0.2	WinNuts - $Ak071401.h01



C13 CDCL3 WM-360 U. OF IOWA
F1: 90.565 F2: 1.000 SW1: 23809 OF1: 9471.0 USER: -- DATE: 07/14/2001
EX: SOLSUP PW: 6.0 usec PD: 0.0 sec NA: 29194 LB: 1.5 PTS1d: 16384
WinNuts - $Ak071301.c01