

Entering the command mode is achieved by typing 3 times “+”. The command mode is acknowledged by the response “communication”.

Command mode is automatically canceled after a fixed delay set to about 3 seconds.

All arguments are defined in *hexadecimal* format.

Commands are either provided separately

```
ATF2A000000
```

```
ATG2C700000
```

```
ATP2
```

or in a single sentence

```
ATF2A000000G2C700000P2
```

Each parameter accepts as an argument a question mark as a request to provide the current value of the parameter:

```
ATN OK
```

```
40
```

Here again the answer is in hexadecimal format: 40 means that each subband is swept in $0x40=64$ points.

The set of commands, followed by the number of characters of the argument, is:

ATP	2	number of peaks (default=2)
ATM	3	number of averages (default=16)
ATF	8	start frequency = ((wanted frequency [MHz]/400) \times 2 ³²) &0xFF FFFF00
ATG	8	stop frequency = ((wanted frequency [MHz]/400) \times 2 ³²) &0xFF FFFF00
ATL	1	active (1) or deactivate (default=0) Listen Before Talk
ATN	3	number of points for each subband (default=64)
ATD	4	delay between two pulse emissions (default=0)
ATE	4	pulse emission duration (default=B0 \simeq 30 μ s)
ATA	1	activate (1) or deactivate (default=0) auto gain control
ATQ	1	output power between 0 and F (default=F)
ATO	3	offset (default=FFF, between 000 and FFF)
ATB	3	maximum threshold between 000 and FFF (default=FA0)
ATC	3	minimum threshold between 000 and FFF (default=C8)
ATH	2	delay between end of emission and analog to digital conversion (default=10)

The number of points in each subband, times the number of peaks, should be below 512.

Example

A 20 dB fixed attenuator is located between the output antenna and a temperature sensor (2 peaks)

With the default configuration, the signal is saturated

```
0 4095 0 4095 0 0
0 4095 0 4095 0 0
0 4095 0 4095 0 0
0 4095 0 4095 0 0
0 4095 0 4095 0 0
```

Two strategies to get the signal back: increase offset or decrease output power

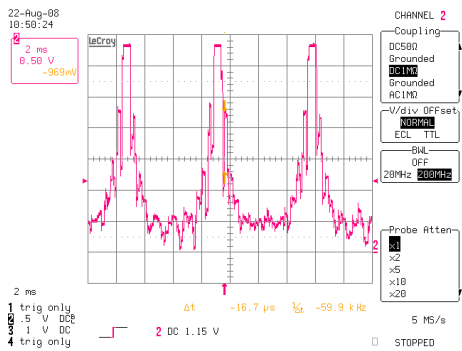
1. with only offset removal

```
0 4095 0 4095 0 0
0 4095 0 4095 0 0
+++communication
ATO OK
```

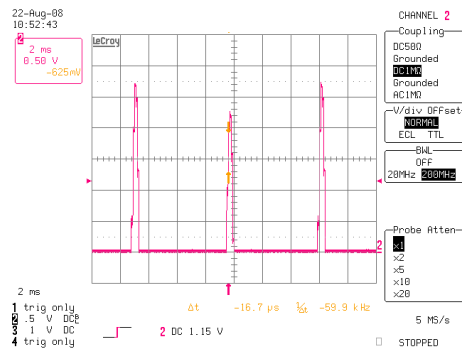
```
8ff
+communication
ATO OK
O=3840
DONE 50
2 433488598 3318 434379265 2703 15 116
2 433488604 3319 434379301 2701 15 116
2 433488593 3312 434379335 2710 15 116
2 433488600 3313 434379304 2710 15 116
2 433488605 3310 434379330 2715 15 116
2 433488608 3315 434379285 2706 15 116
```

2. with output power reduction (the signal is still above the maximum threshold), followed by offset removal

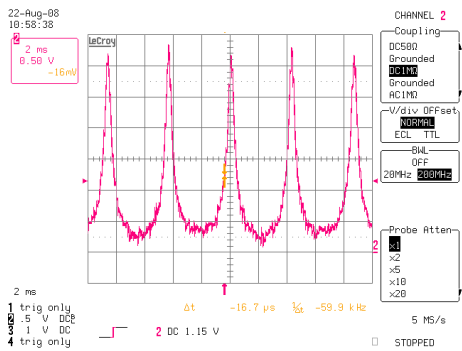
```
0 4095 0 4095 0 0
0 4095 0 4095 0 0
+++communication
ATQ OK
P=1
DONE 50
2 433490380 4084 434380276 3929 1 5
2 433490821 4074 434380785 3930 1 9
2 433490315 4074 434380288 3922 1 5
2 433490481 4076 434380547 3918 1 4
++2 433490556 4075 434380401 3937 1 10
+communication
ATO OK
O=2559
ATF OK
DONE 50
2 433489545 3269 434380310 3107 1 116
2 433489630 3269 434380547 3097 1 116
2 433489586 3275 434380572 3097 1 116
```



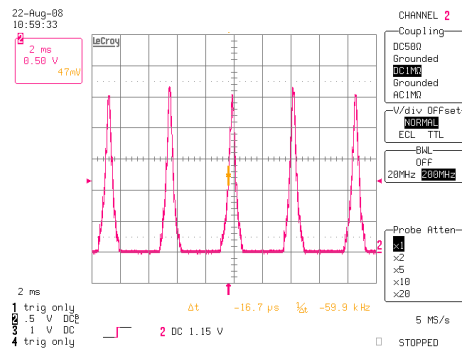
Signal with the default configuration: the signal is saturated, and the minimum value is above 0



Same output power (maximum) but increasing the offset lowers the whole curve and brings the peaks within measurement range. The signal range is poor due to too high an offset.



Reduction of the output power: the peaks are slightly above maximum threshold while the minimum is still far above 0



Reduction of the output power to minimum *and* increasing slightly the offset to get the best signal dynamics while bringing the minimum signal to 0. This configuration will provide the **best signal to noise ratio**.