Annex I: Photos

Test report reference: 4_ALPS_0306_TAS_FCCa

Date: 2006-03-31

0.1 Dwell time measurement to determine the duty cycle

Standard FCC Part 15, 10-1-04
Subpart C

The test was performed according to: FCC §15.31, 10-1-04

0.1.1 Test Description

The Equipment Under Test (EUT) was setup in a shielded room to perform the dwell time measurements.
For analyzer settings please see measurement plots in annex.

0.1.2 Test Limits

Less than 5 seconds. This test is also performed to determine the duty cycle of the transmitter and calculate the correction factor for pulse modulated transmitter. This factor is used as a correction factor for the field strength measurement.

0.1.3 Test Protocol

Temperature: 24 °C
Air Pressure: 1003 hPa
Humidity: 33 %

Op. Mode	Setup	Port
op-mode 2	Setup_b01	Enclosure (integral antenna)

Remark	
Step 1	The on / off ratio within a cycle is 0.5
Step 2	The on / off ratio within a data word is 0.5
The duty cycle is 0.25 or 20 x log(0.25) = -12dB	

Remark:
Step1: Burst on time = 57.1ms – 4ms = 53.1ms
        Burst off time = 46.8ms
On/on+off app. 53%
Step2: Data word on time – long = 0.8ms, short = 0.4ms together= 1.2 ms
   Data word off time – long = 0.82ms, short = 0.42ms together= 1.24 ms
On/on+off app. 0.49%

duty cycle = 20 X Log(0.53X0.49) = - 11.7
Correction value set to -12dB

0.1.4 Test result: Dwell time

FCC Part 15, Subpart C	Op. Mode	Result
	op-mode 2	This test has no result. It is performed to found the correction factor for the test spurious emissions radiated

RBW 100 kHz   Marker 1 [T1]
VBW 300 kHz   -26.18 dBm
Ref -20 dBm   Att 10 dB   SWT 2 s   36.000000 ms
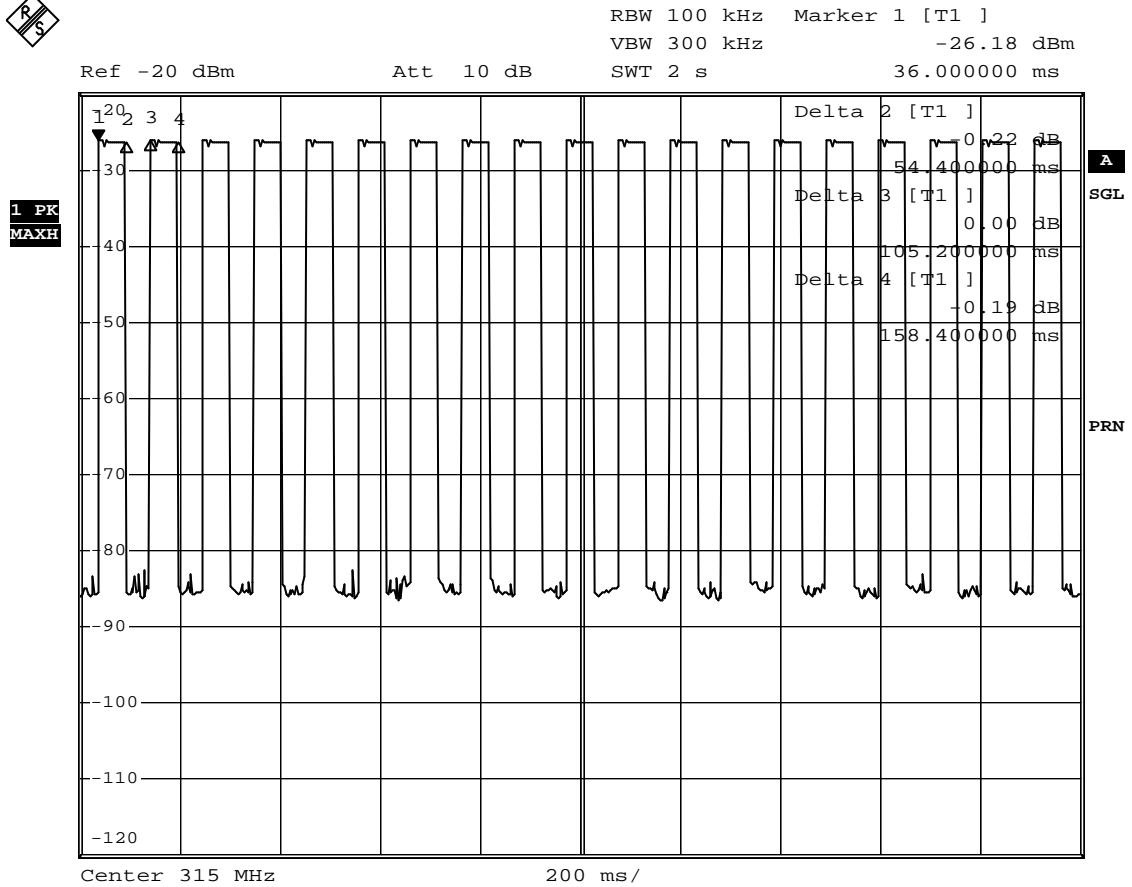
Date: 31.MAR.2006 09:25:40

Step 1 a: Overview for burst on / off time. Do to the analyzer settings it is not possible to measure the burst length exact.

```
                                          RBW 100 kHz   Marker 1 [T1 ]
                                          VBW 300 kHz            -30.58 dBm
     Ref -20 dBm              Att  10 dB   SWT 200 ms       9.300000 ms

     -20                                    Delta 2 [T1 ]
        1      2 3          4                         -0.74 dB
     -30                                           11.500000 ms        A
                                            Delta 3 [T1 ]                SGL
     -40                                            -0.05 dB
                                                  10.500000 ms
     -50                                    Delta 4 [T1 ]
                                                    -0.66 dB
     -60                                          57.100000 ms
                                                                        PRN
     -70

     -80

     -90

     -100

     -110

     -120
     Center 315 MHz                        20 ms/
```
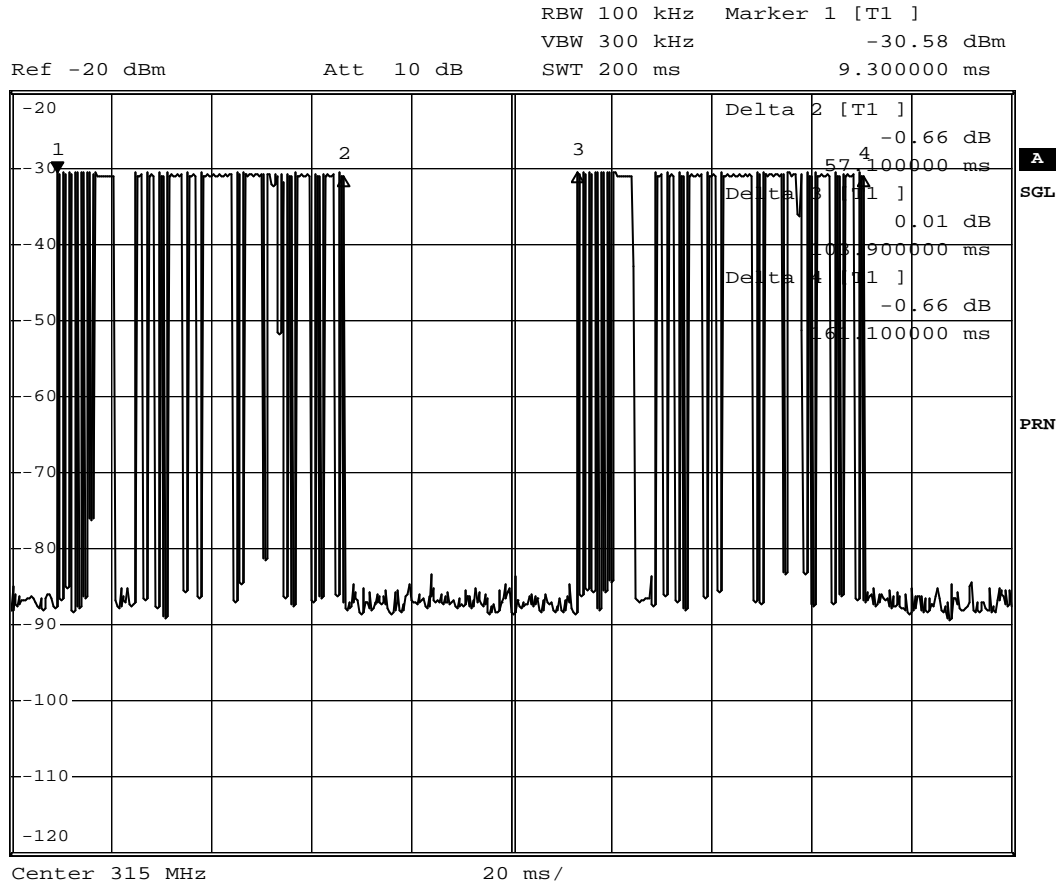
1 PK
MAXH
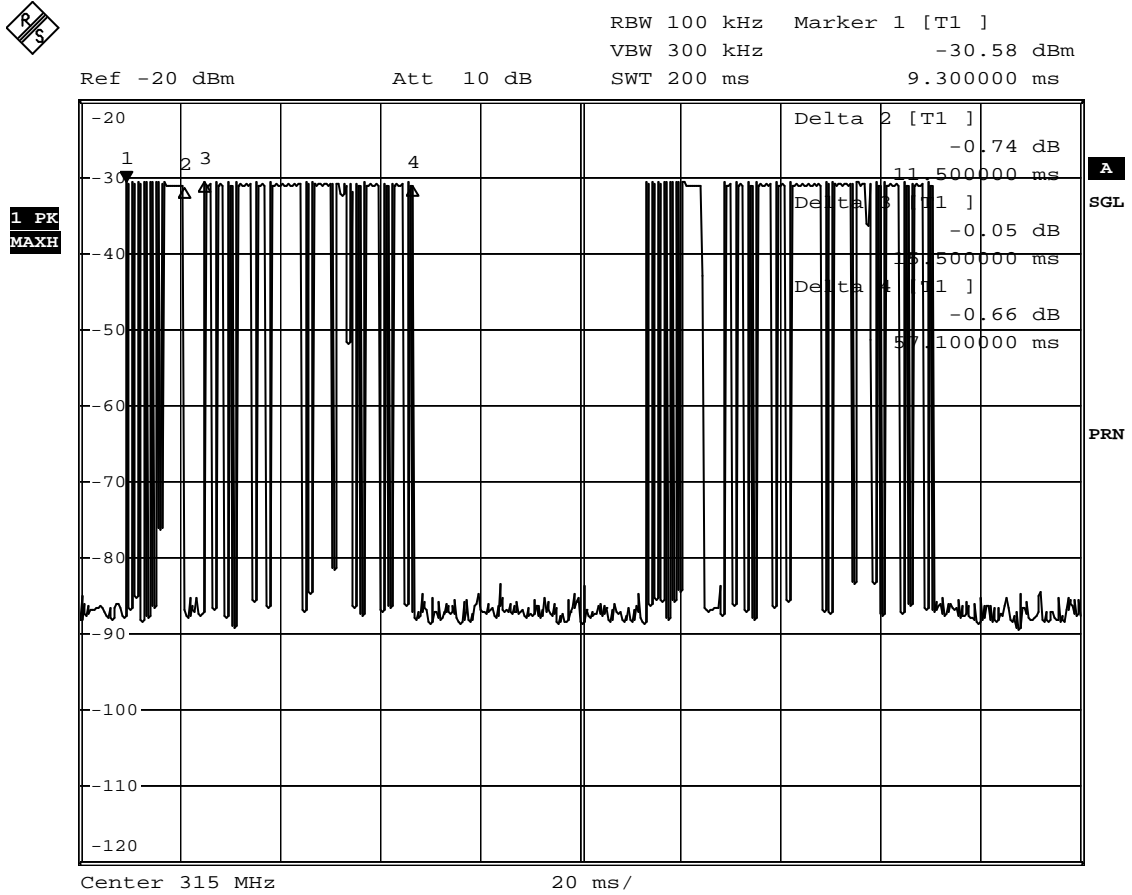
Date: 31.MAR.2006 09:20:30

Step 1 b: Two burst to measure the burst on / off time. Do to the analyzer settings it is not possible to measure the single data word length.

```
                                        RBW 100 kHz   Marker 1 [T1 ]
                                        VBW 300 kHz           -30.58 dBm
     Ref -20 dBm          Att  10 dB    SWT 200 ms      9.300000 ms

      -20                                     Delta 2 [T1 ]                A
       1          2          3           4           -0.66 dB
      -30                                            57.100000 ms          SGL
1 PK                                        Delta 3 [T1 ]
MAXH  -40                                            0.01 dB
                                                     108.900000 ms
      -50                                    Delta 4 [T1 ]
                                                     -0.66 dB
      -60                                            161.100000 ms        PRN

      -70

      -80

      -90

      -100

      -110

      -120
     Center 315 MHz                       20 ms/
```
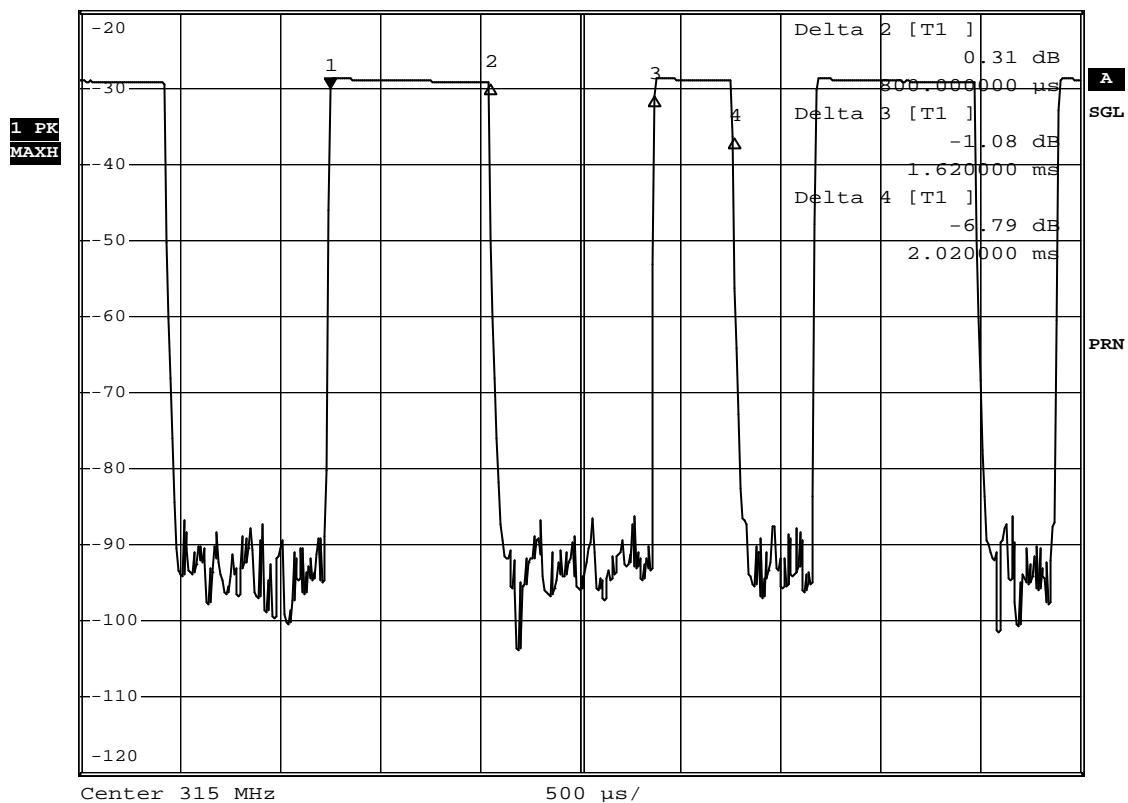
Date: 31.MAR.2006 09:23:17

Step 1 c: Two burst to measure the burst on / off time. Do to the analyzer settings it is not possible to measure the single data word length.

RBW 100 kHz Marker 1 [T1]
VBW 300 kHz   -29.98 dBm
Ref -20 dBm   Att 10 dB   SWT 5 ms   1.250000 ms

Delta 2 [T1]
0.31 dB
800.000000 µs

Delta 3 [T1]
-1.08 dB
1.620000 ms

Delta 4 [T1]
-6.79 dB
2.020000 ms

Center 315 MHz   500 µs/

Date: 31.MAR.2006 09:32:32

Step 2 a: sweep of a data word to determine the on / off ration within a data word.
Two length of on and off time are shown.

RBW 100 kHz   Marker 1 [T1]
VBW 300 kHz   -29.17 dBm
Ref -20 dBm   Att 10 dB   SWT 5 ms   3.260000 ms
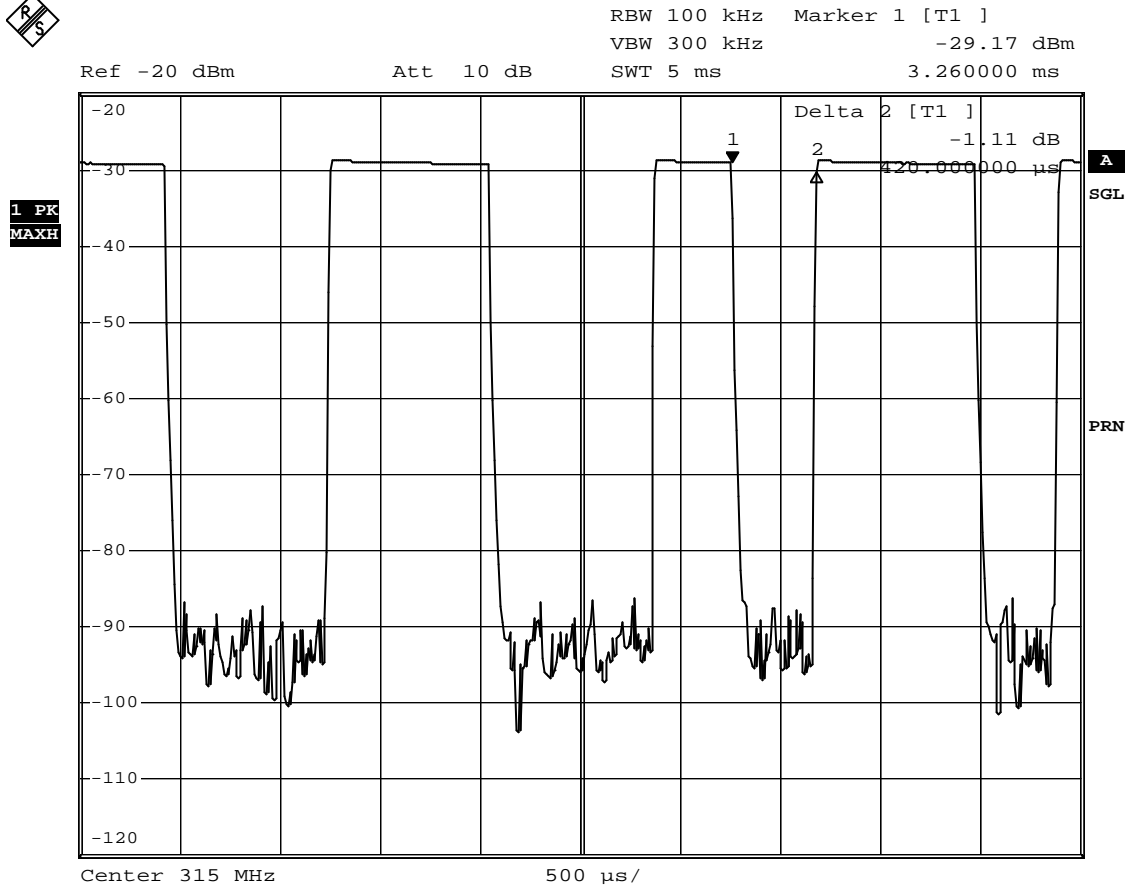
Date: 31.MAR.2006   09:34:59

Step 2 b: sweep of a data word to determine the on / off ration within a data word. Two length of on and off time are shown.