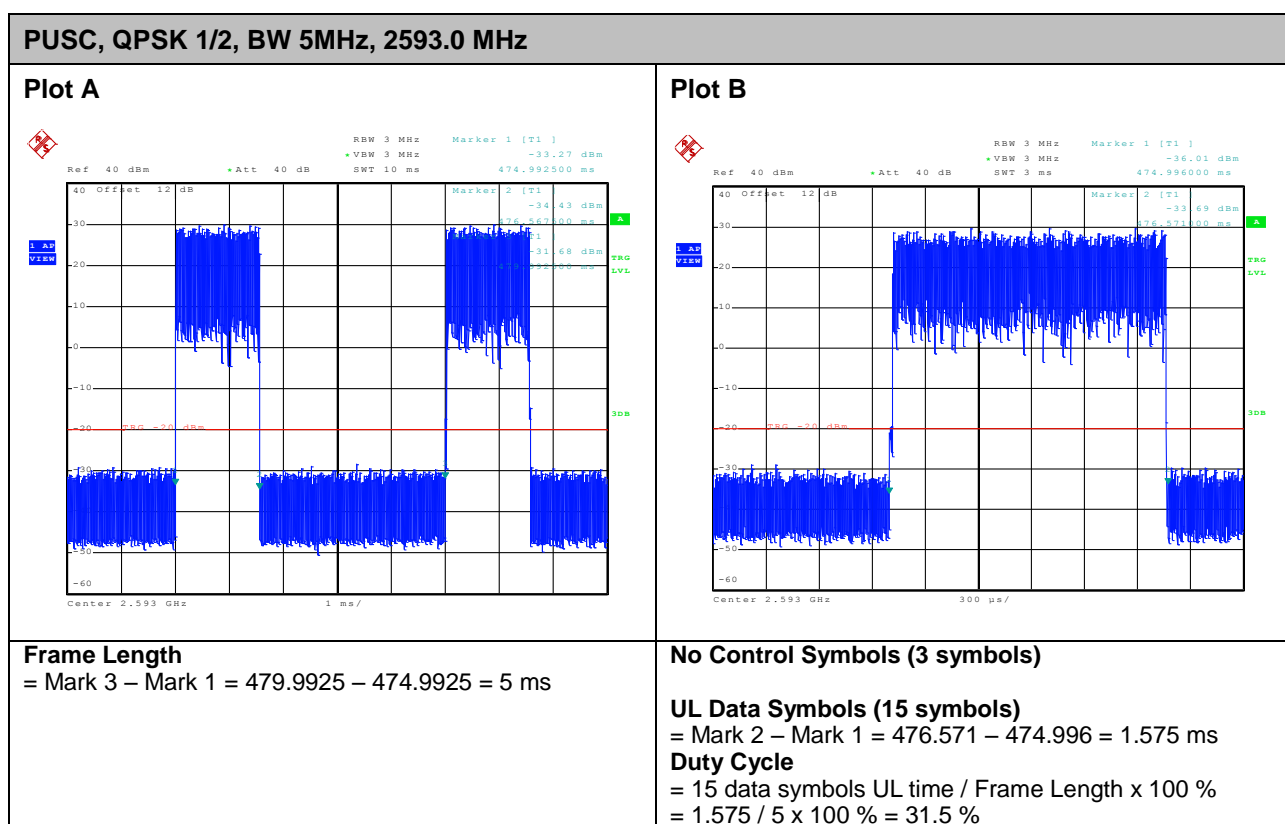


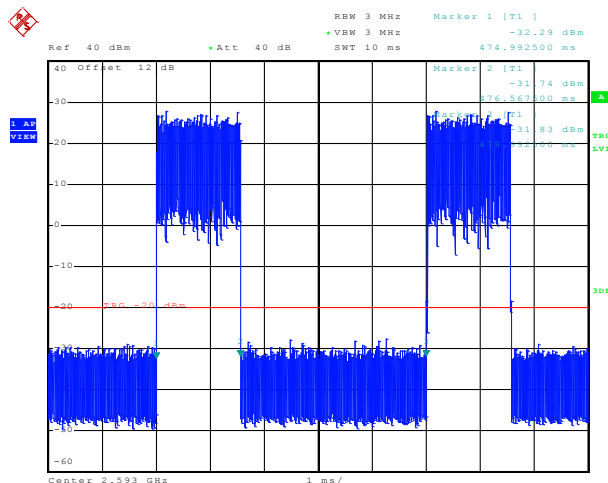
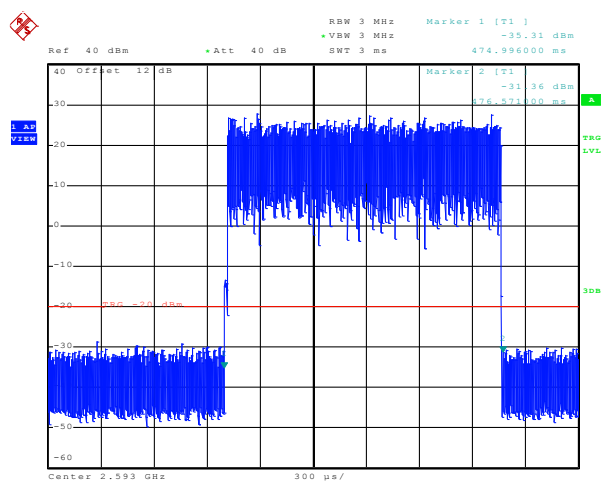
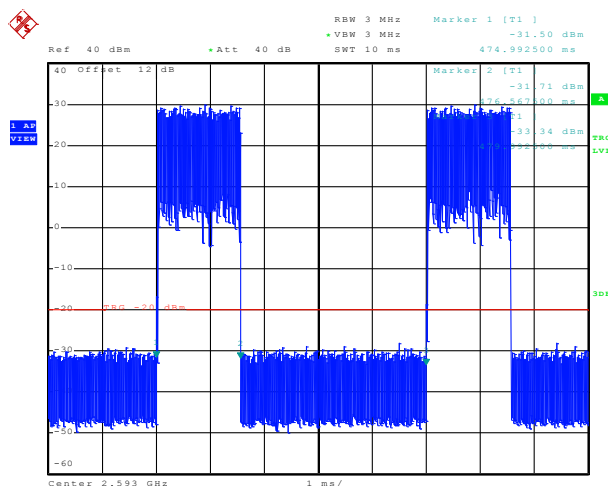
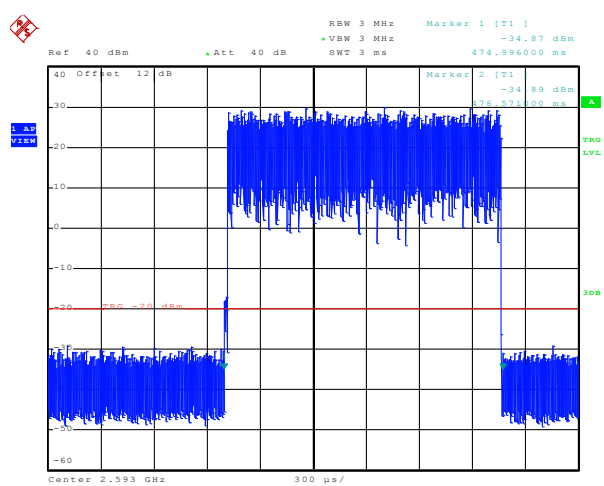
## Appendix F. Plots of Duty Cycle

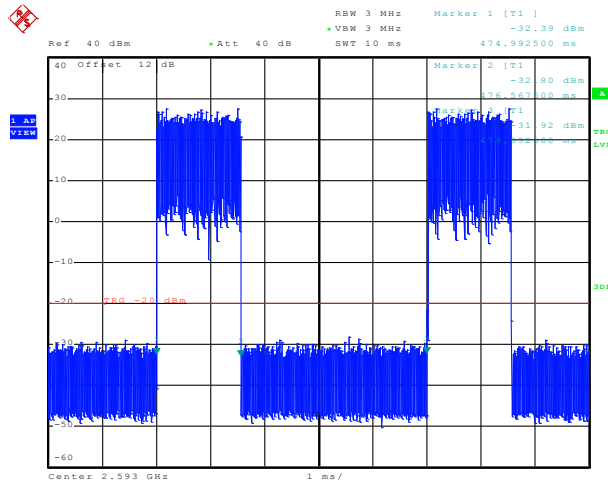
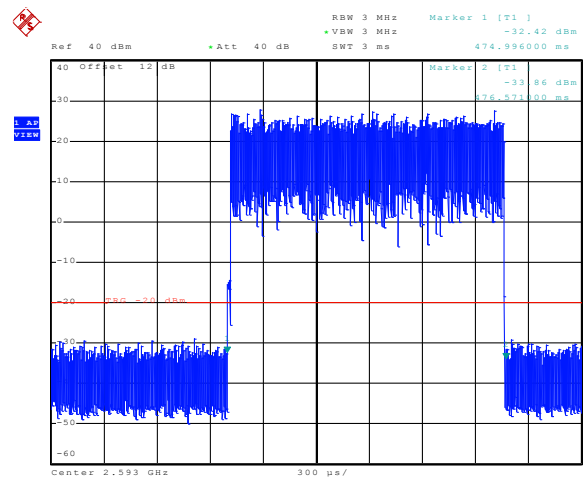
The plot below shows the waveform characteristics of the signal used in the SAR measurement. The pulse duration corresponds to a DL:UL symbol ratio of 29:18 and control symbols are not active.

The time vector plots are shown as below. The plot A is used to get the frame length of test signal and the plot B is used to get the time of UL data symbols. Since there was no energy in the control symbols, the effective power is only across 15 data symbols. The calculation of duty cycle is as below:

**Duty Cycle = 15 data symbols UL time / Frame Length x 100 %**



**PUSC, QPSK 1/2, BW 10MHz, 2593.0 MHz**
**Plot A**

**Plot B**

**Frame Length**
 $\text{Frame Length} = \text{Mark 3} - \text{Mark 1} = 479.9925 - 474.9925 = 5 \text{ ms}$ 
**No Control Symbols (3 symbols)**
**UL Data Symbols (15 symbols)**
 $\text{UL Data Symbols} = \text{Mark 2} - \text{Mark 1} = 476.571 - 474.996 = 1.575 \text{ ms}$ 
**Duty Cycle**
 $\text{Duty Cycle} = \frac{15 \text{ data symbols UL time}}{\text{Frame Length}} \times 100 \% = \frac{1.575}{5} \times 100 \% = 31.5 \%$ 
**PUSC, QPSK 3/4, BW 5MHz, 2593.0 MHz**
**Plot A**

**Plot B**

**Frame Length**
 $\text{Frame Length} = \text{Mark 3} - \text{Mark 1} = 479.9925 - 474.9925 = 5 \text{ ms}$ 
**No Control Symbols (3 symbols)**
**UL Data Symbols (15 symbols)**
 $\text{UL Data Symbols} = \text{Mark 2} - \text{Mark 1} = 476.571 - 474.996 = 1.575 \text{ ms}$ 
**Duty Cycle**
 $\text{Duty Cycle} = \frac{15 \text{ data symbols UL time}}{\text{Frame Length}} \times 100 \% = \frac{1.575}{5} \times 100 \% = 31.5 \%$

**PUSC, QPSK 3/4, BW 10MHz, 2593.0 MHz**
**Plot A**

**Plot B**

**Frame Length**

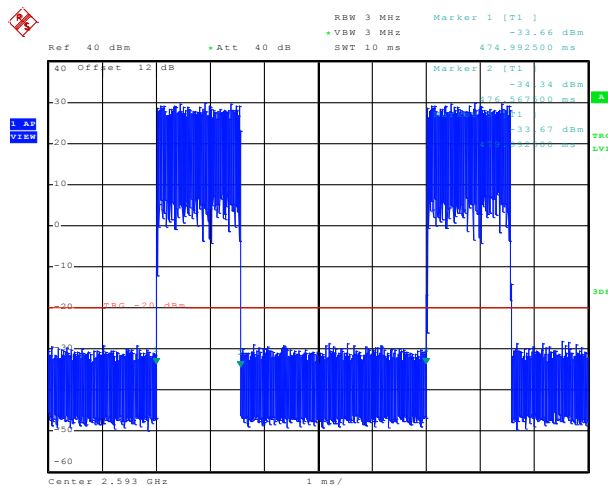
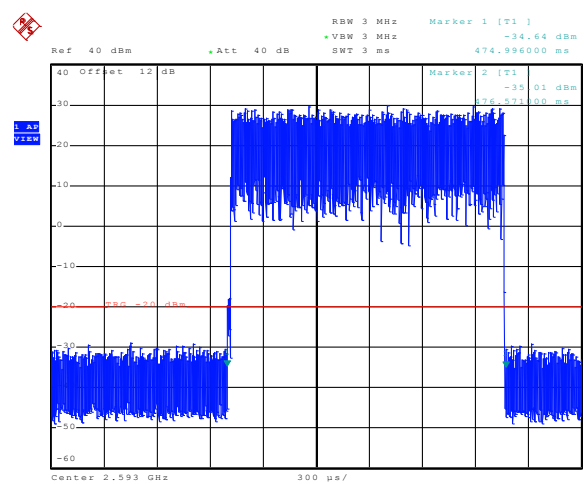
= Mark 3 – Mark 1 = 479.9925 – 474.9925 = 5 ms

**No Control Symbols (3 symbols)**
**UL Data Symbols (15 symbols)**

= Mark 2 – Mark 1 = 476.571 – 474.996 = 1.575 ms

**Duty Cycle**

= 15 data symbols UL time / Frame Length x 100 %  
= 1.575 / 5 x 100 % = 31.5 %

**PUSC, 16QAM 1/2, BW 5MHz, 2593.0 MHz**
**Plot A**

**Plot B**

**Frame Length**

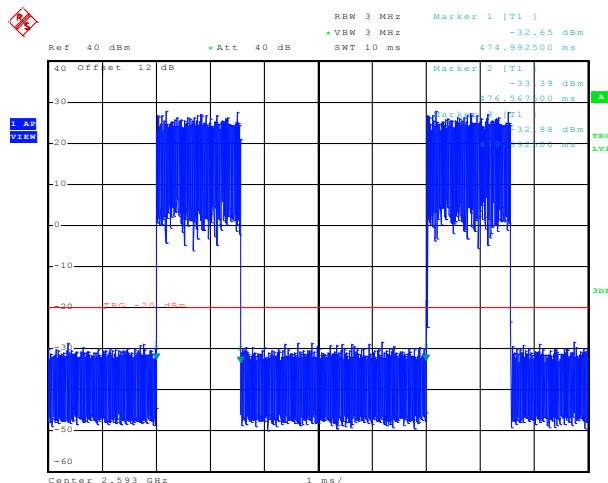
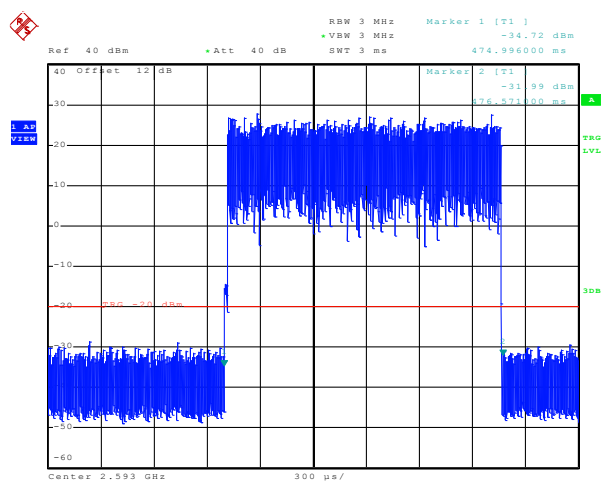
= Mark 3 – Mark 1 = 479.9925 – 474.9925 = 5 ms

**No Control Symbols (3 symbols)**
**UL Data Symbols (15 symbols)**

= Mark 2 – Mark 1 = 476.571 – 474.996 = 1.575 ms

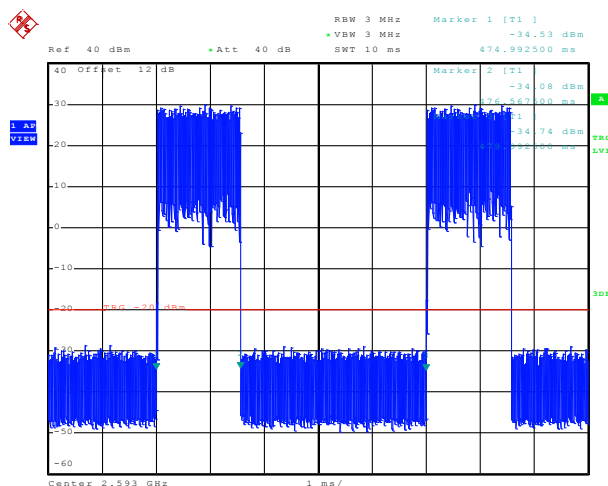
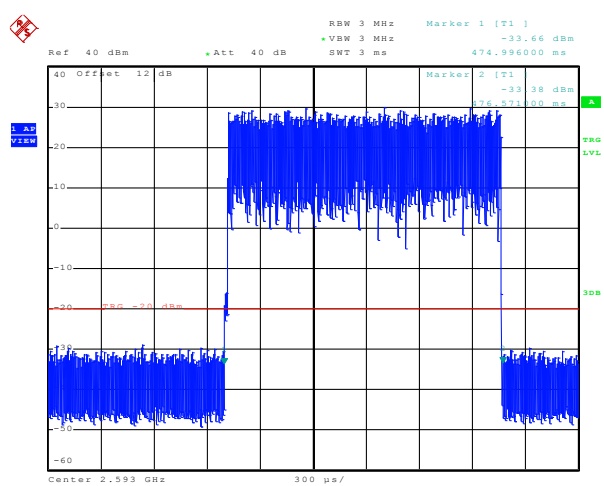
**Duty Cycle**

= 15 data symbols UL time / Frame Length x 100 %  
= 1.575 / 5 x 100 % = 31.5 %

**PUSC, 16QAM 1/2, BW 10MHz, 2593.0 MHz**
**Plot A**

**Plot B**

**Frame Length**

$$= \text{Mark 3} - \text{Mark 1} = 479.9925 - 474.9925 = 5 \text{ ms}$$
**No Control Symbols (3 symbols)**
**UL Data Symbols (15 symbols)**

$$= \text{Mark 2} - \text{Mark 1} = 476.571 - 474.996 = 1.575 \text{ ms}$$
**Duty Cycle**

$$= 15 \text{ data symbols UL time} / \text{Frame Length} \times 100 \% = 1.575 / 5 \times 100 \% = 31.5 \%$$
**PUSC, 16QAM 3/4, BW 5MHz, 2593.0 MHz**
**Plot A**

**Plot B**

**Frame Length**

$$= \text{Mark 3} - \text{Mark 1} = 479.9925 - 474.9925 = 5 \text{ ms}$$
**No Control Symbols (3 symbols)**
**UL Data Symbols (15 symbols)**

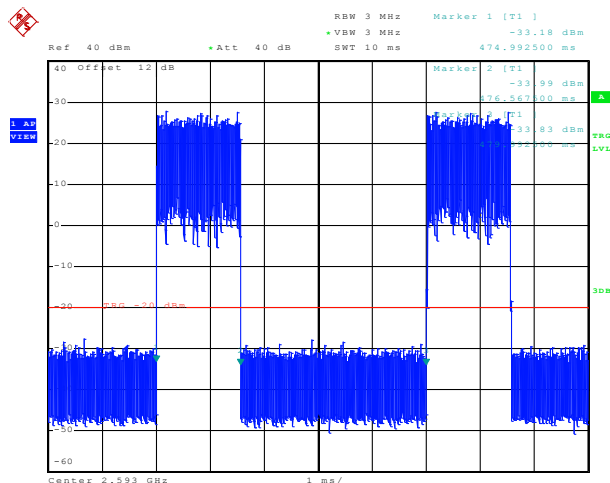
$$= \text{Mark 2} - \text{Mark 1} = 476.571 - 474.996 = 1.575 \text{ ms}$$
**Duty Cycle**

$$= 15 \text{ data symbols UL time} / \text{Frame Length} \times 100 \% = 1.575 / 5 \times 100 \% = 31.5 \%$$

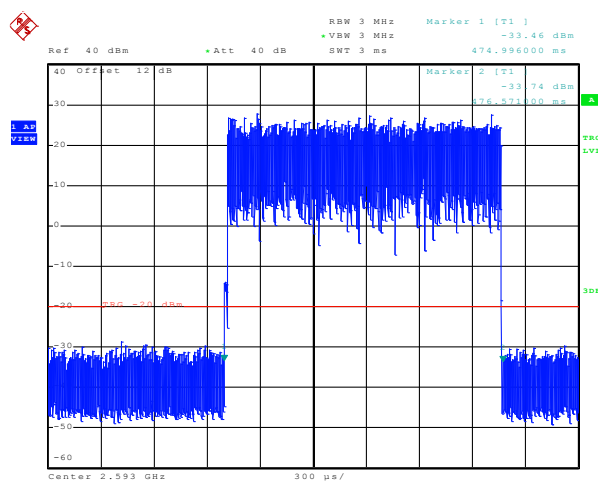


PUSC, 16QAM 3/4, BW 10MHz, 2593.0 MHz

Plot A



Plot B



Frame Length

= Mark 3 – Mark 1 = 479.9925 – 474.9925 = 5 ms

No Control Symbols (3 symbols)

UL Data Symbols (15 symbols)

= Mark 2 – Mark 1 = 476.571 – 474.996 = 1.575 ms

Duty Cycle

= 15 data symbols UL time / Frame Length x 100 %  
= 1.575 / 5 x 100 % = 31.5 %