

**APPENDIX D DUTY CYCLE OF TEST SIGNAL  
FOR 5MHz BANDWIDTH**

### Summary measured result of signal duty cycle measurement:

Channel BW	UL zone type / DL/UL symbols	modulation	Measured Duty Cycle(%)		
			Channel		
			Low	Mid	High
5MHz	PUSC / 29/18	QPSK-1/2	31.2	31.2	31
		QPSK-3/4	31.2	31	31.2
		16QAM-1/2	31.2	31.2	31.2
		16QAM-3/4	31.2	31.2	31

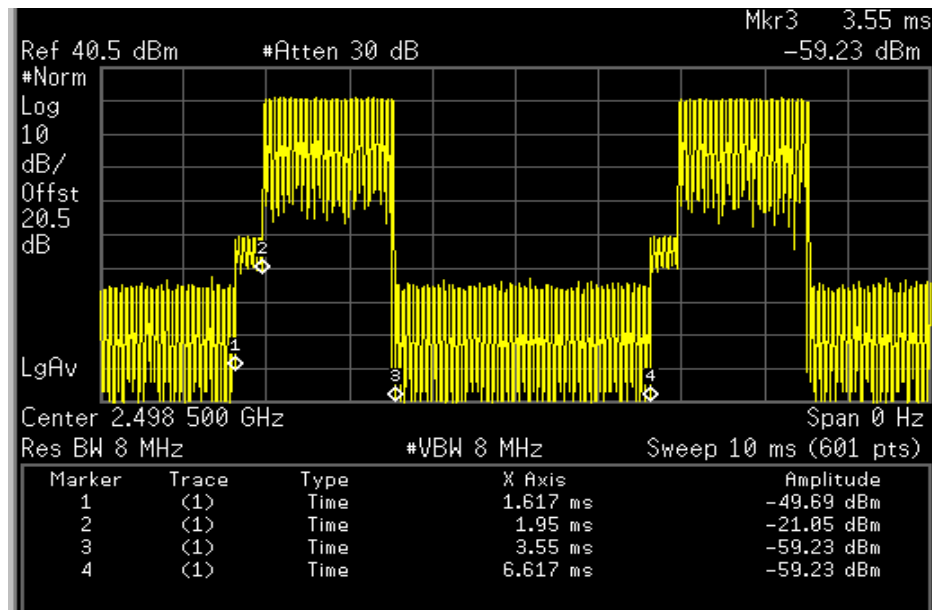
## Calculation of Duty cycle ( UL : DL ratio of test signal is 18:29 )

2 plots are measured for duty cycle to each condition shown on above summary table

Plot 1 is used to get the burst length of test signal.

Burst length = Mark 4 – Mark 1

Plot 1

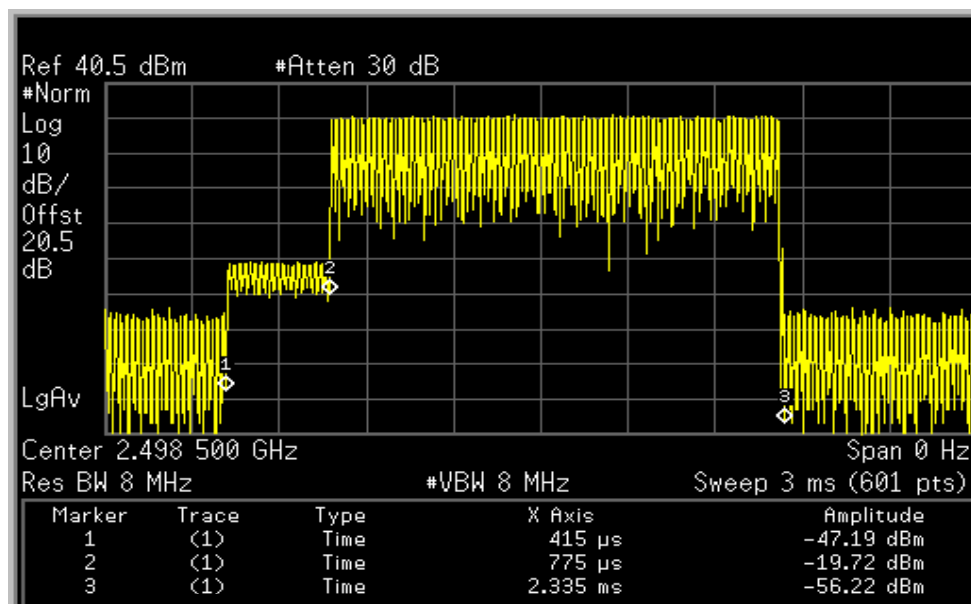


Plot 2 is used to get the UL time of test signal.

Mark 2 – Mark1 = First 3 symbols UL time

Mark 3 – Mark 2 =15 symbols UL time

Plot 2



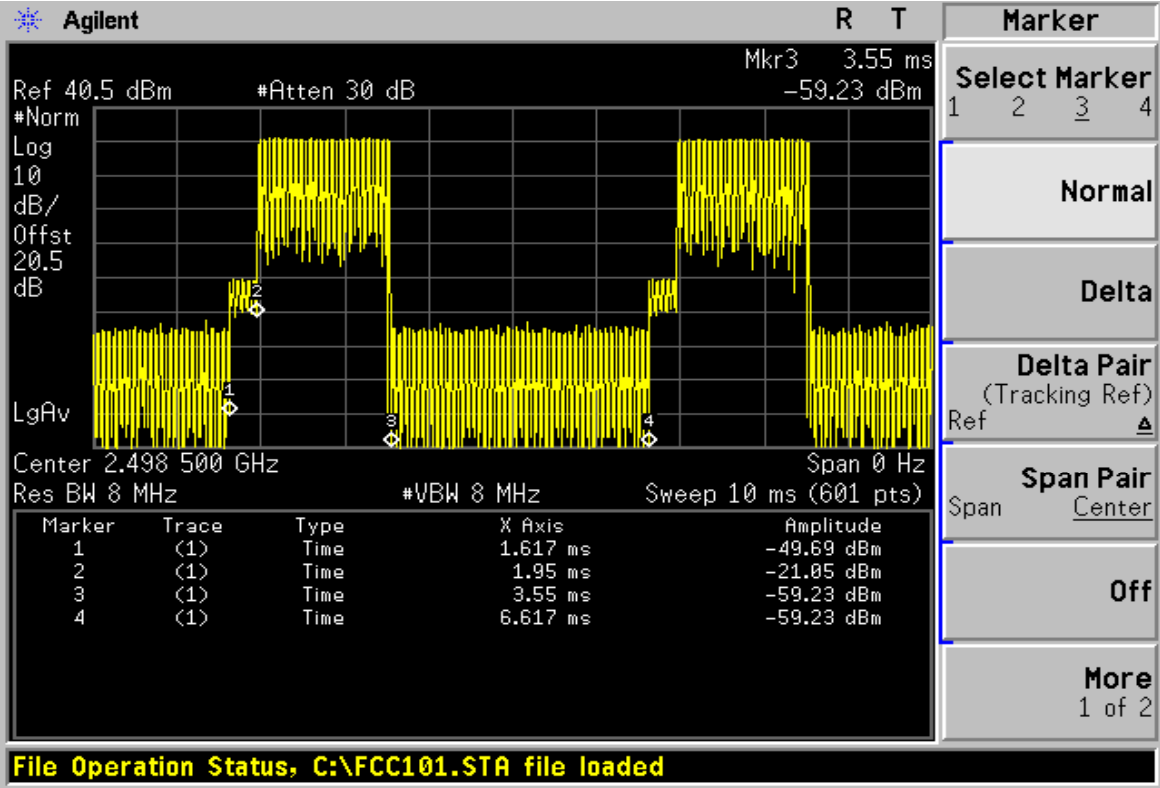
Per KDB 615223 , the first 3 symbols UL time is ignored

Therefore, calculation formula is as below

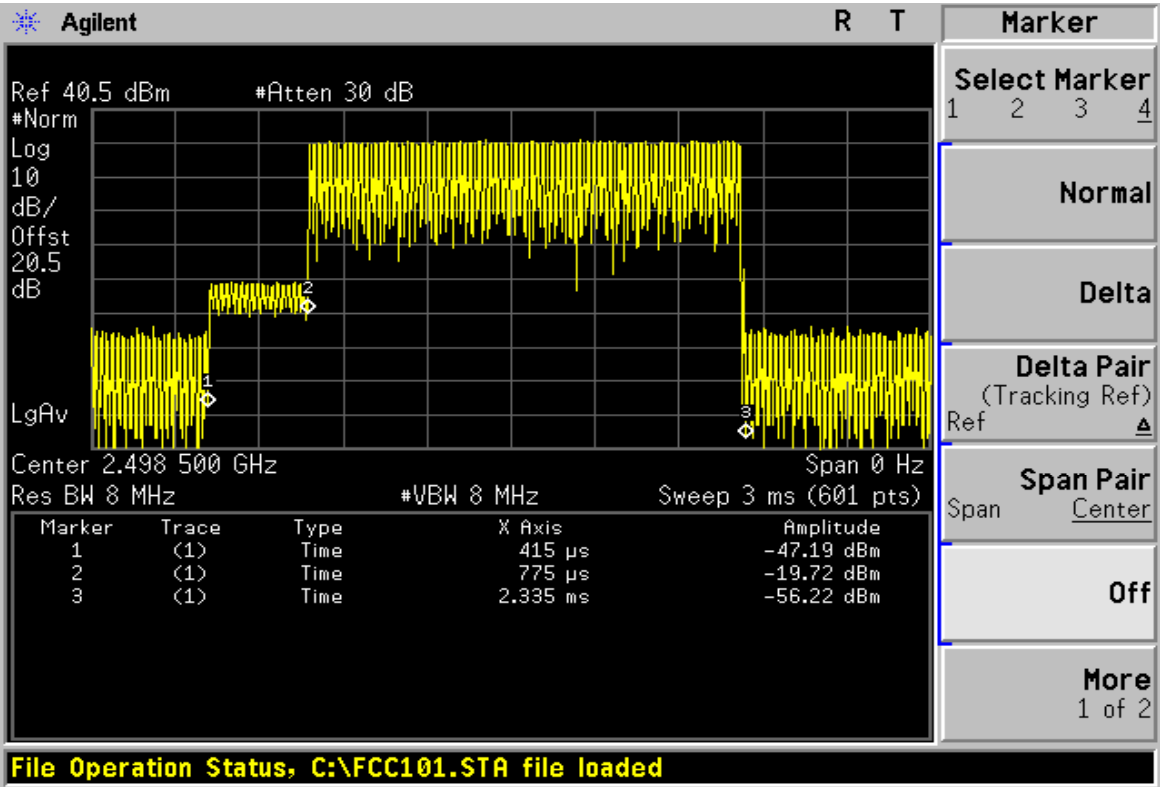
Duty cycle = 15 symbol UL time / Burst length \*100 %

ZONE TYPE        PUSC  
MODULATION      QPSK 1/2  
BANDWIDTH       5MHz  
  
FREQUENCY       2498.5 MHz

Plot 1



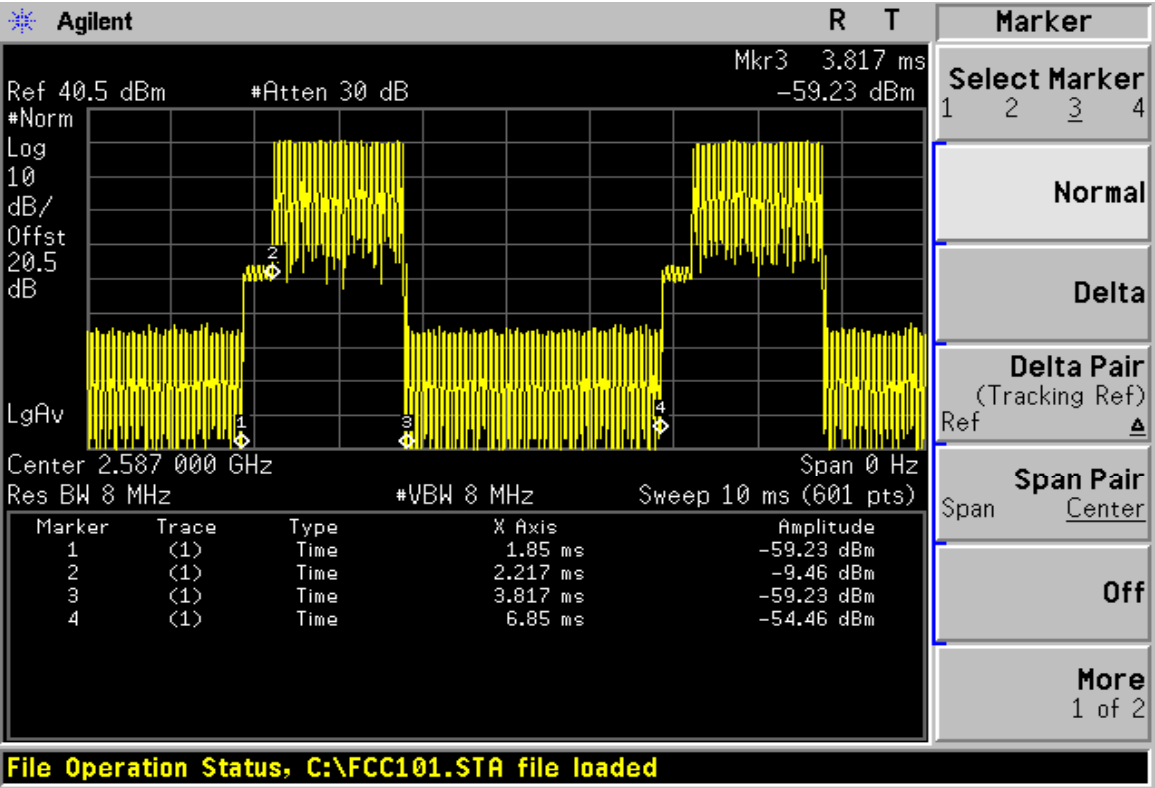
Plot 2



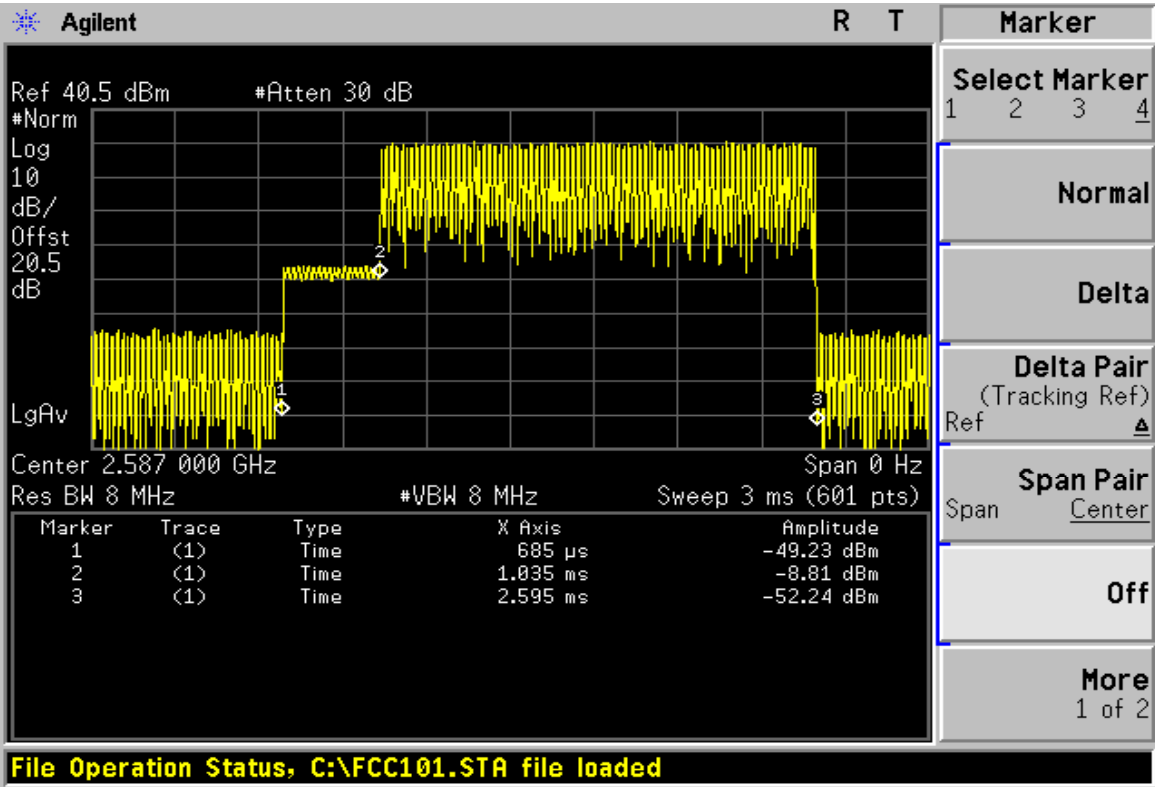
ZONE TYPE        PUSC  
MODULATION      QPSK 1/2  
BANDWIDTH       5MHz

FREQUENCY       2587 MHz

Plot 1

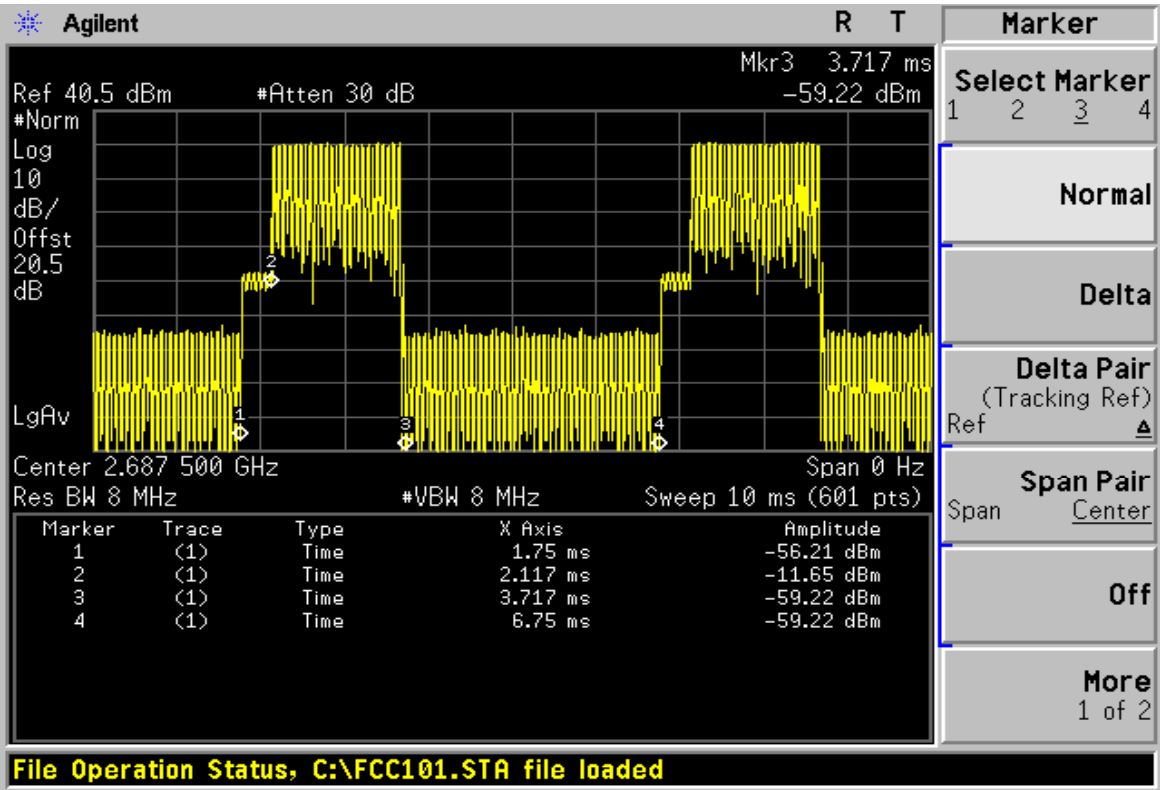


Plot 2

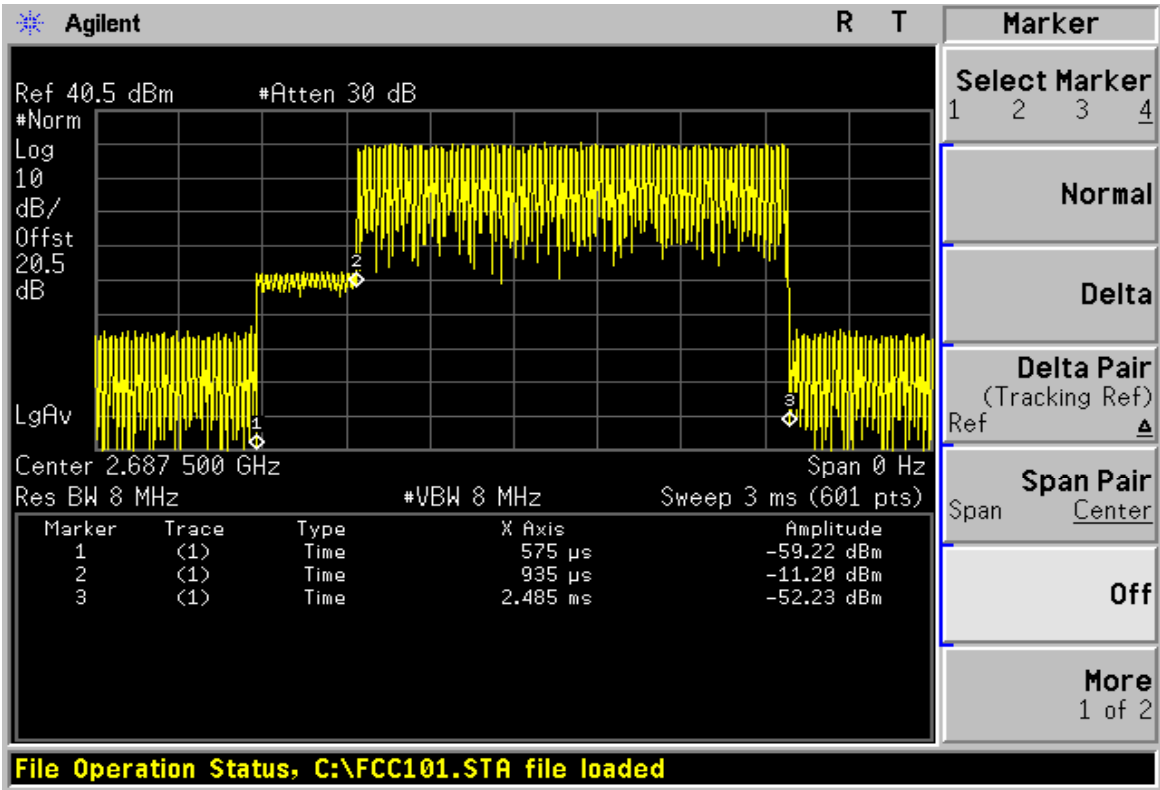


ZONE TYPE        PUSC  
MODULATION      QPSK 1/2  
BANDWIDTH       5MHz  
  
FREQUENCY       2687.5 MHz

Plot 1



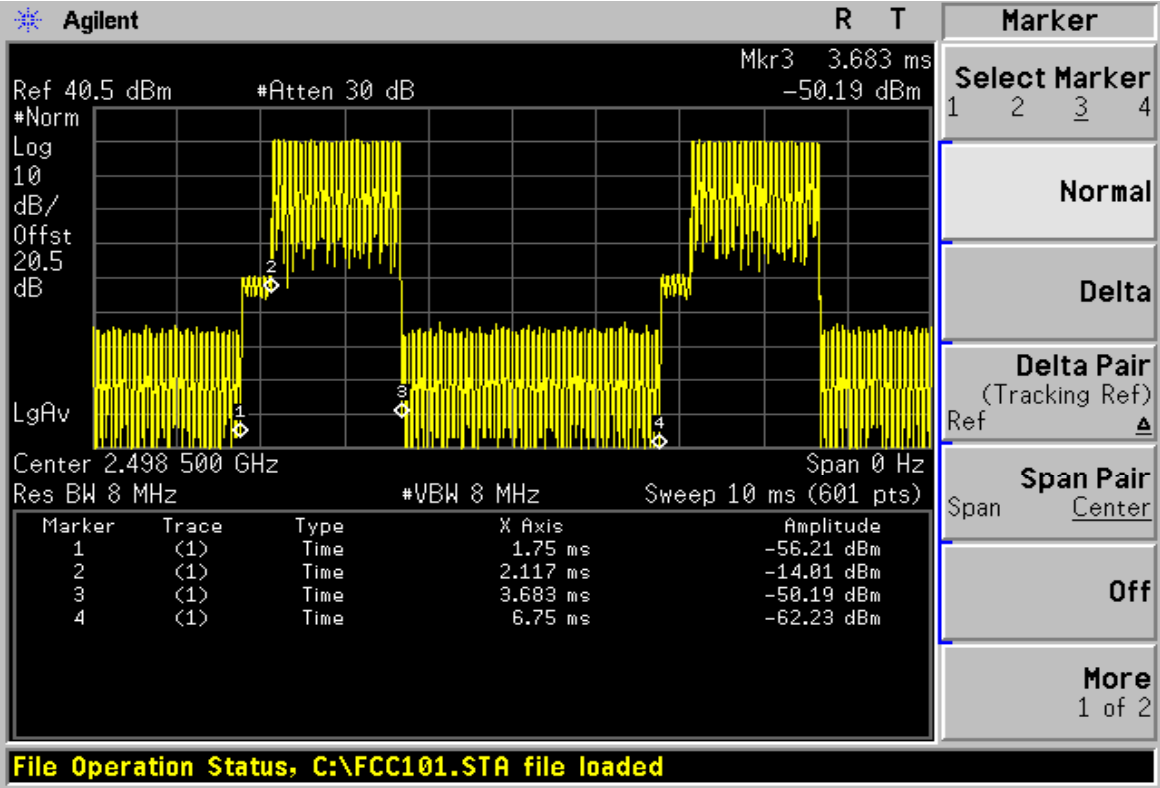
Plot 2



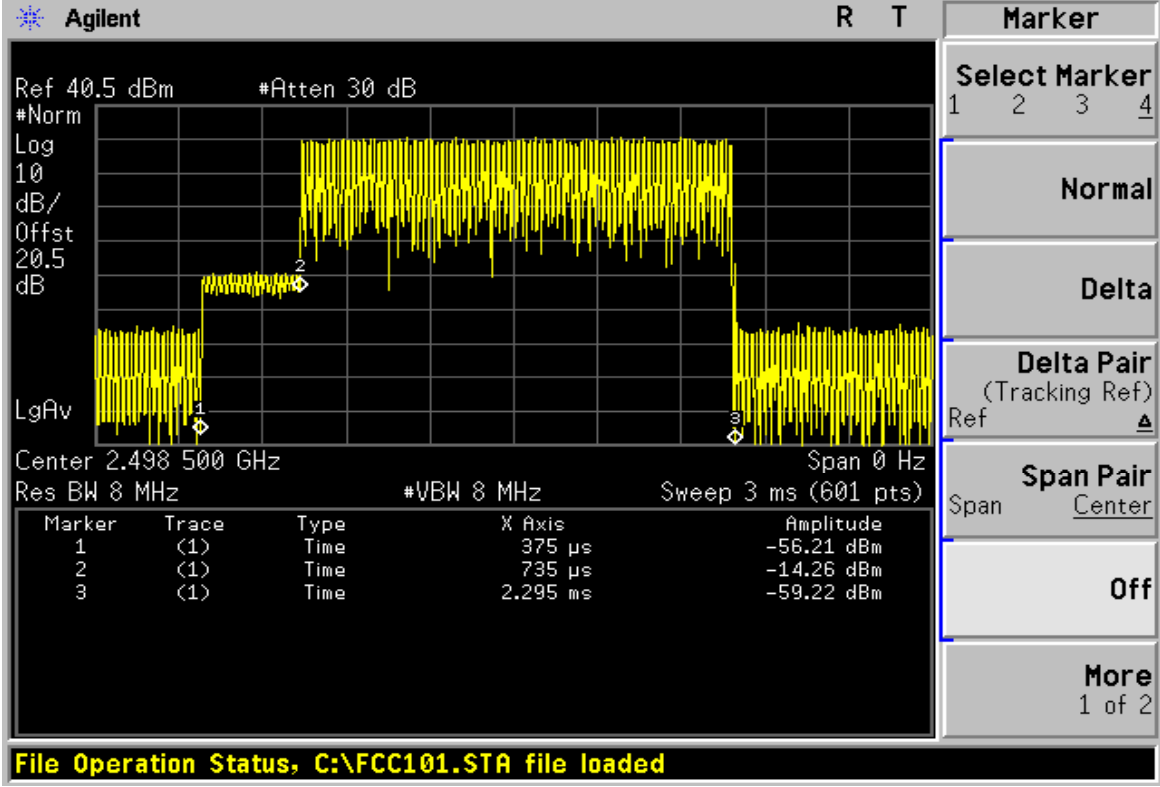
ZONE TYPE        PUSC  
MODULATION      QPSK 3/4  
BANDWIDTH       5MHz

FREQUENCY       2498.5 MHz

Plot 1



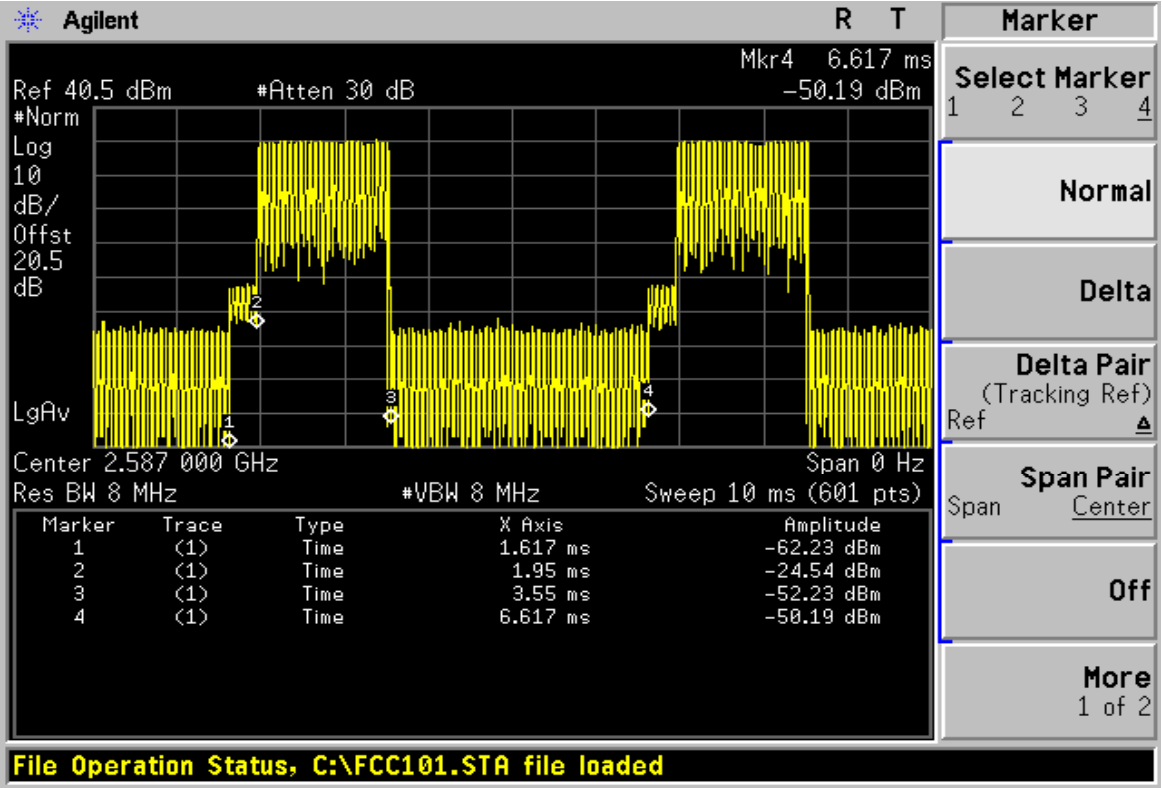
Plot 2



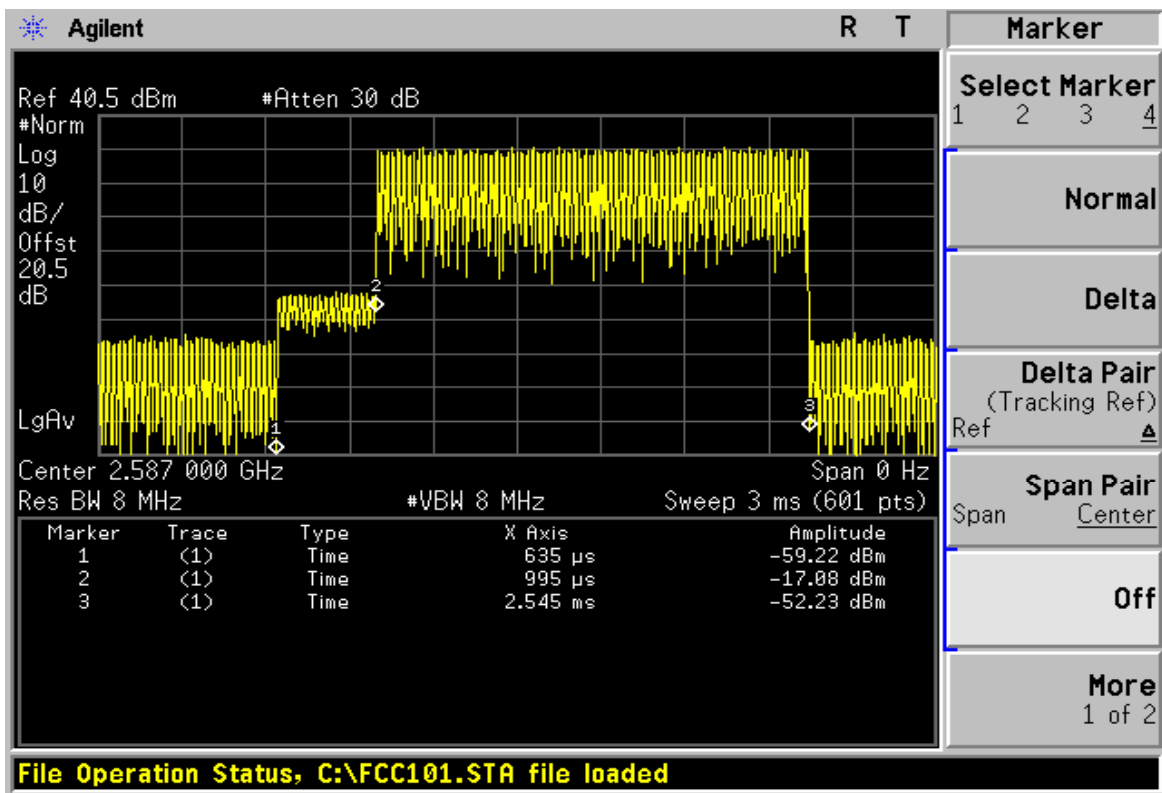
ZONE TYPE        PUSC  
MODULATION      QPSK 3/4  
BANDWIDTH       5MHz

FREQUENCY       2587 MHz

Plot 1



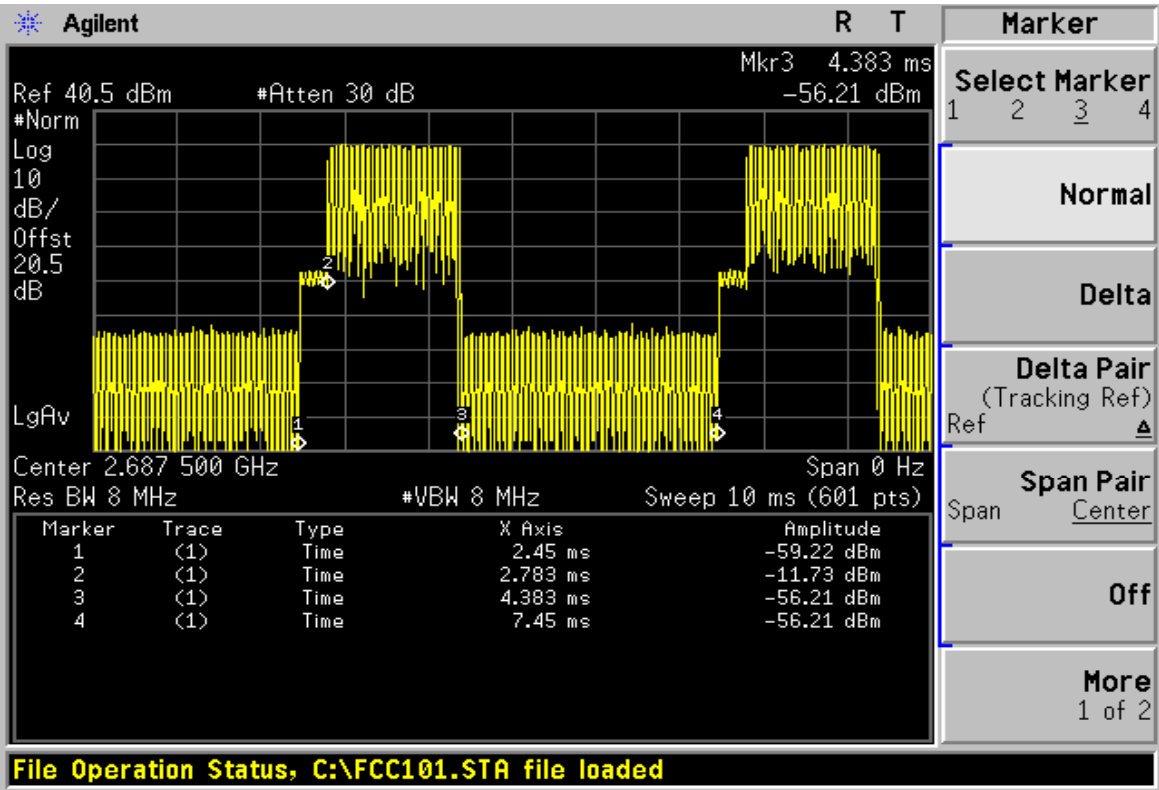
Plot 2



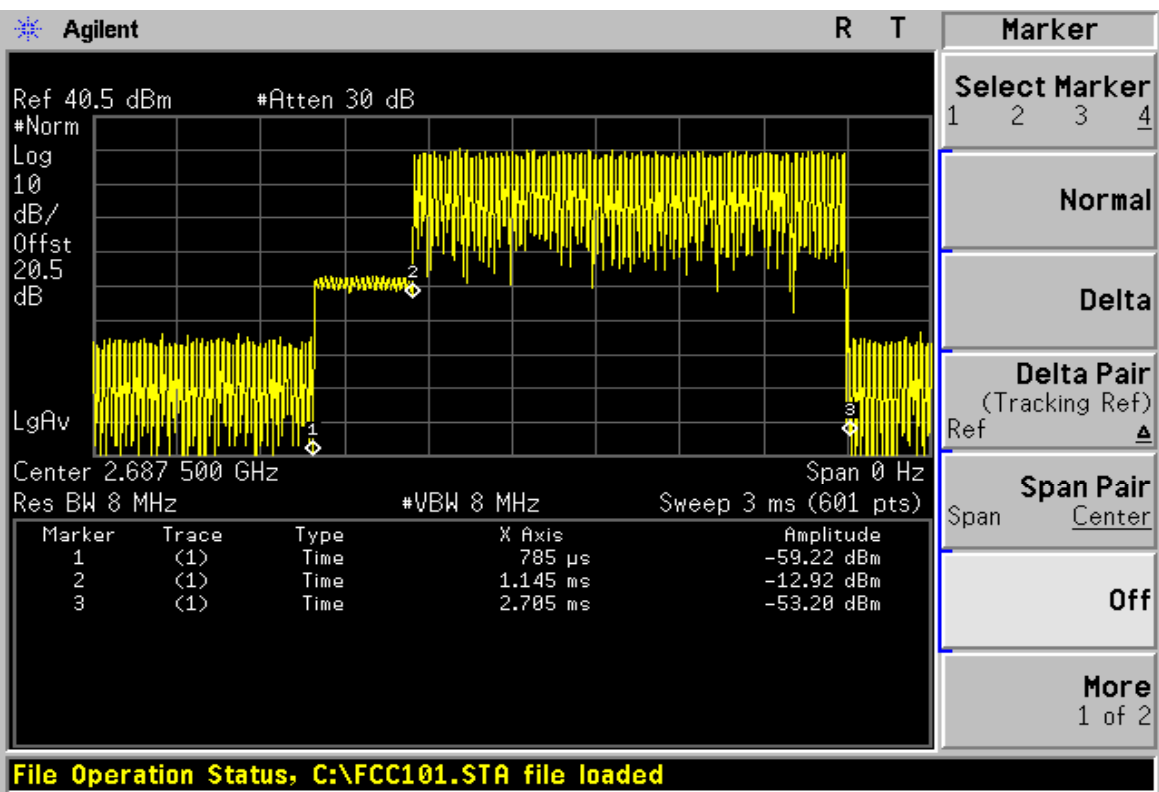


ZONE TYPE        PUSC  
MODULATION      QPSK 3/4  
BANDWIDTH       5MHz  
  
FREQUENCY        2687.5 MHz

Plot 1



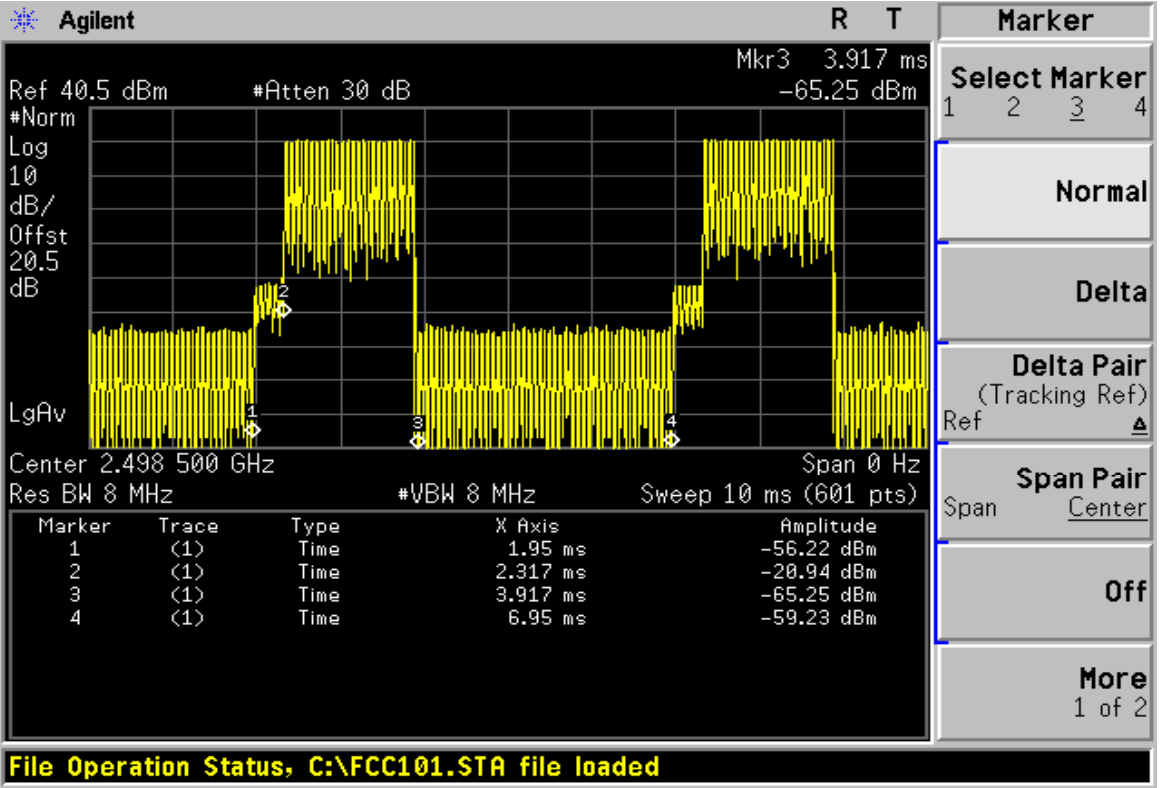
Plot 2



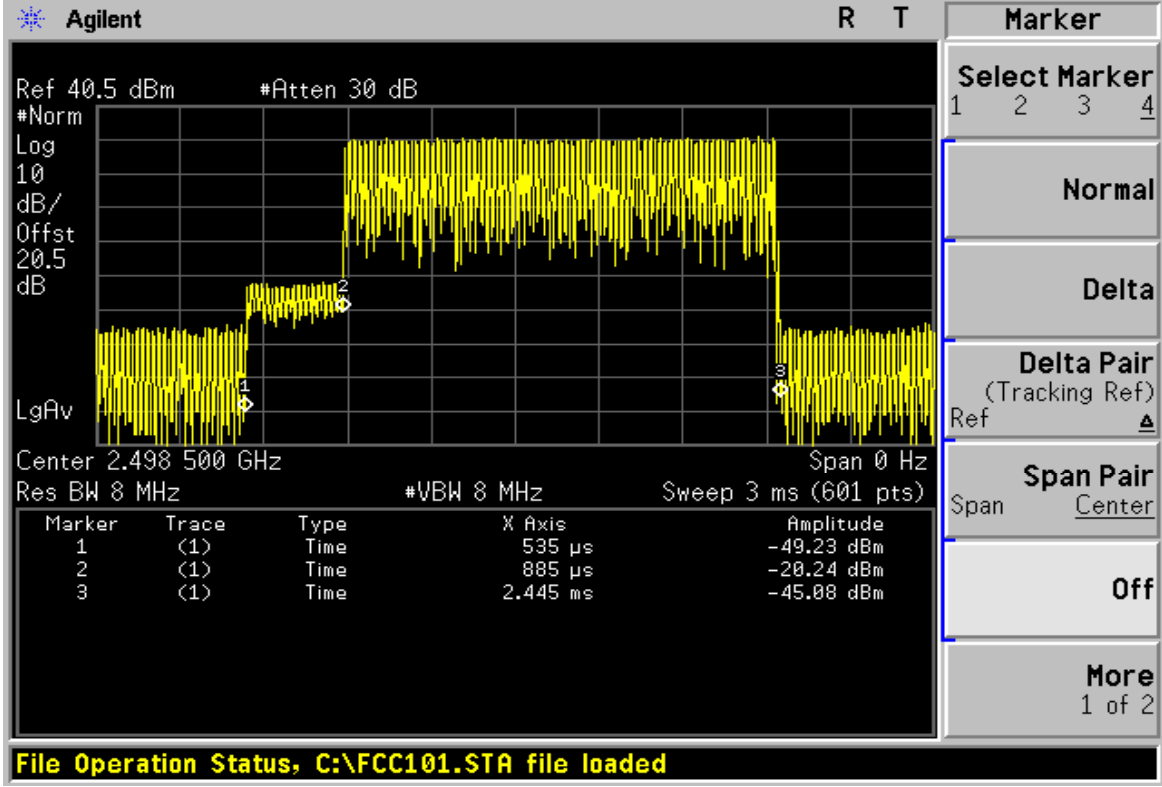
ZONE TYPE        PUSC  
MODULATION     16QAM 1/2  
BANDWIDTH       5MHz

FREQUENCY       2498.5 MHz

Plot 1

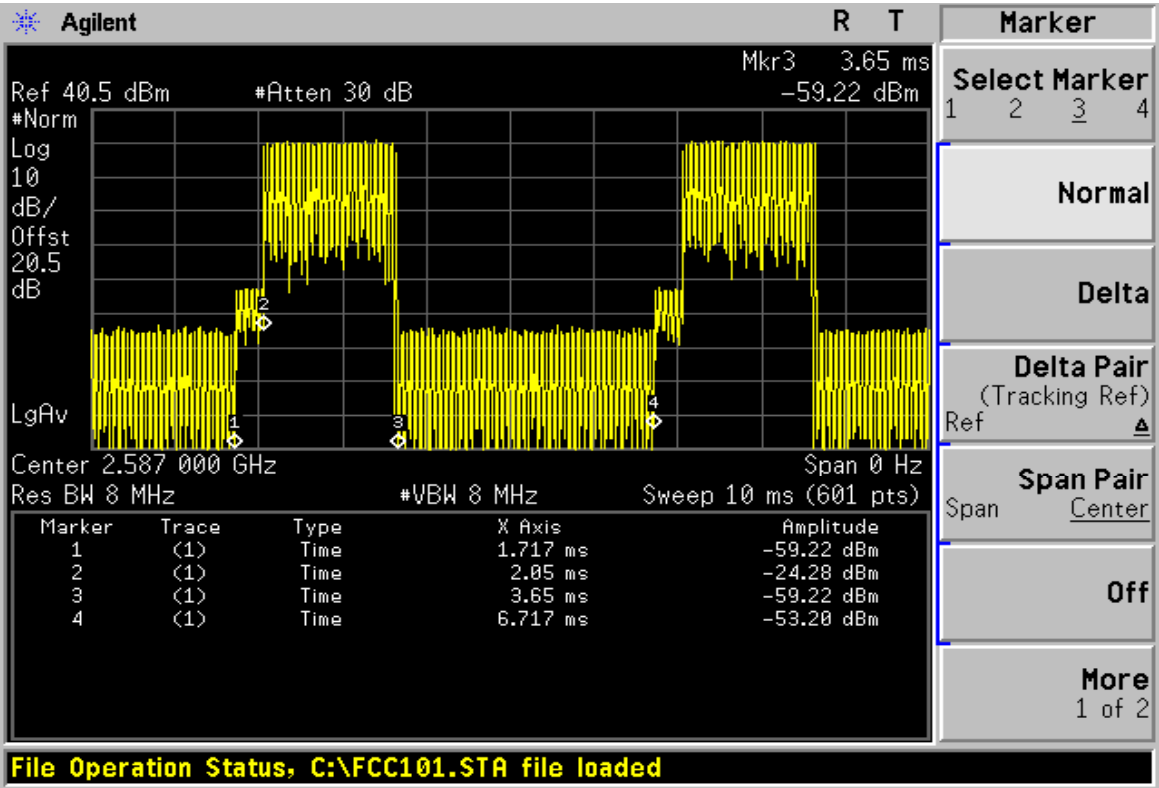


Plot 2

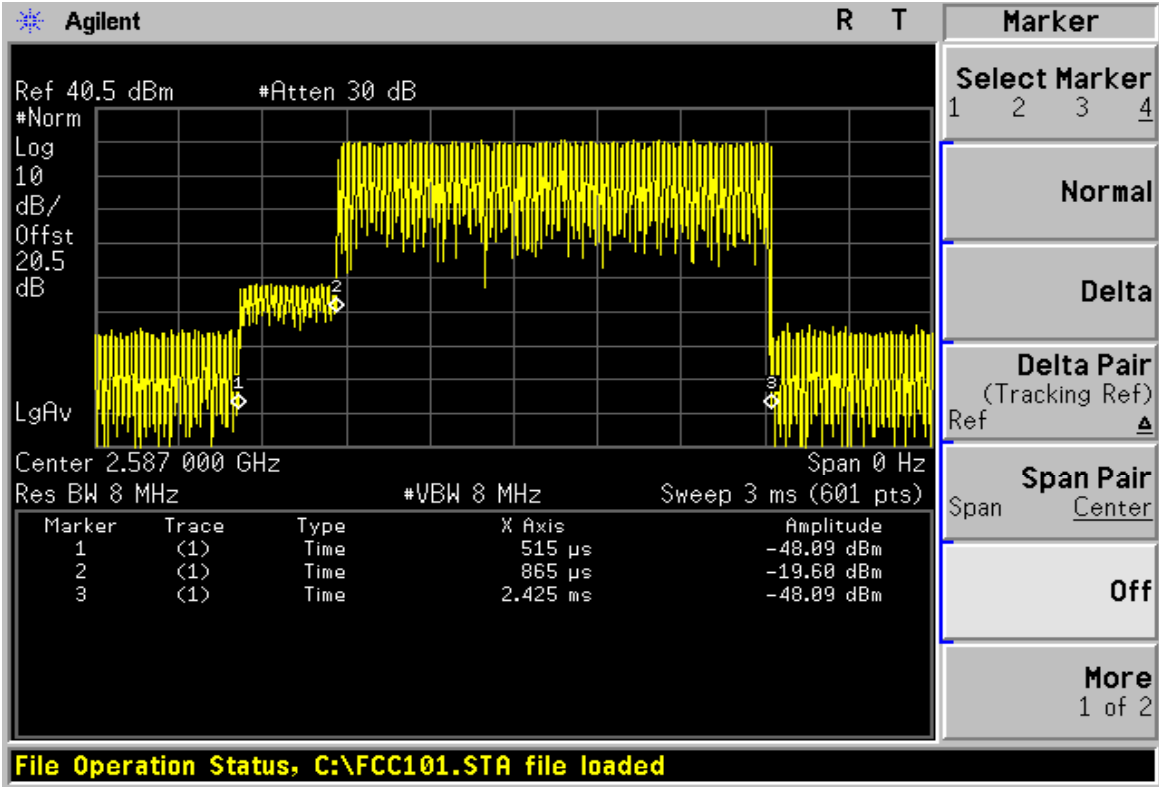


ZONE TYPE        PUSC  
MODULATION      16QAM 1/2  
BANDWIDTH       5MHz  
  
FREQUENCY        2587 MHz

Plot 1

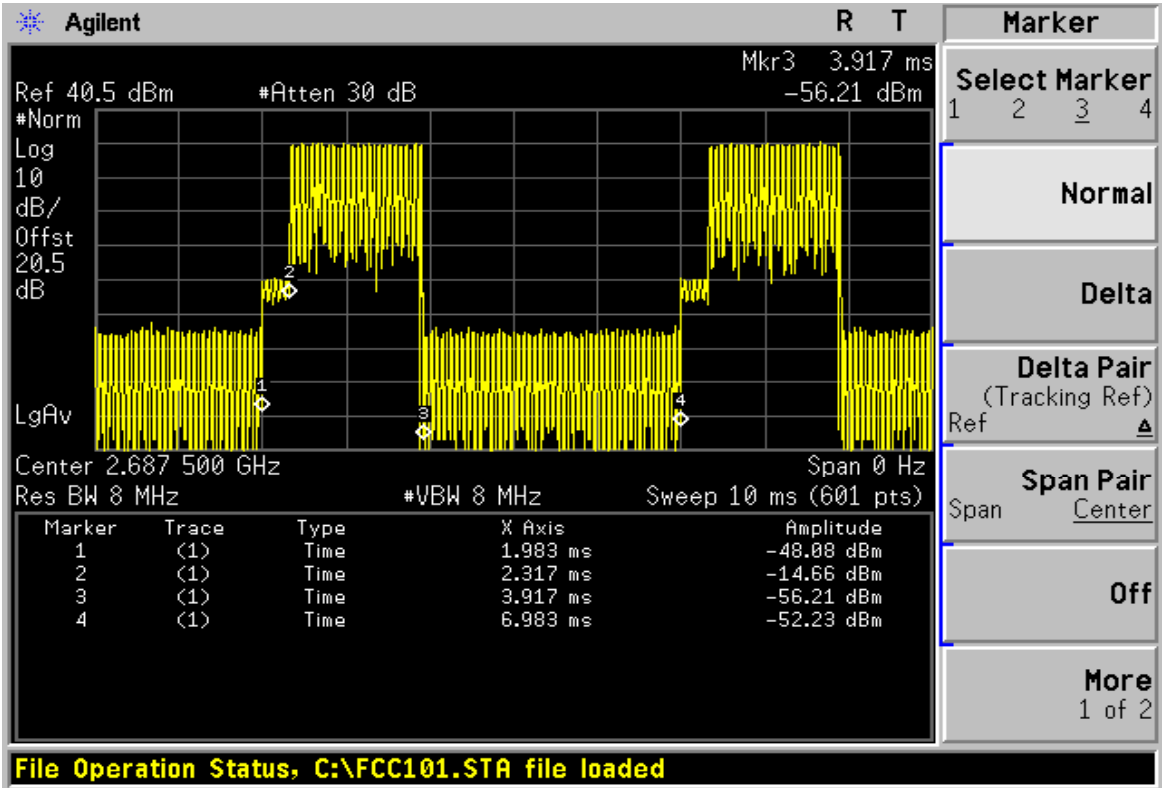


Plot 2

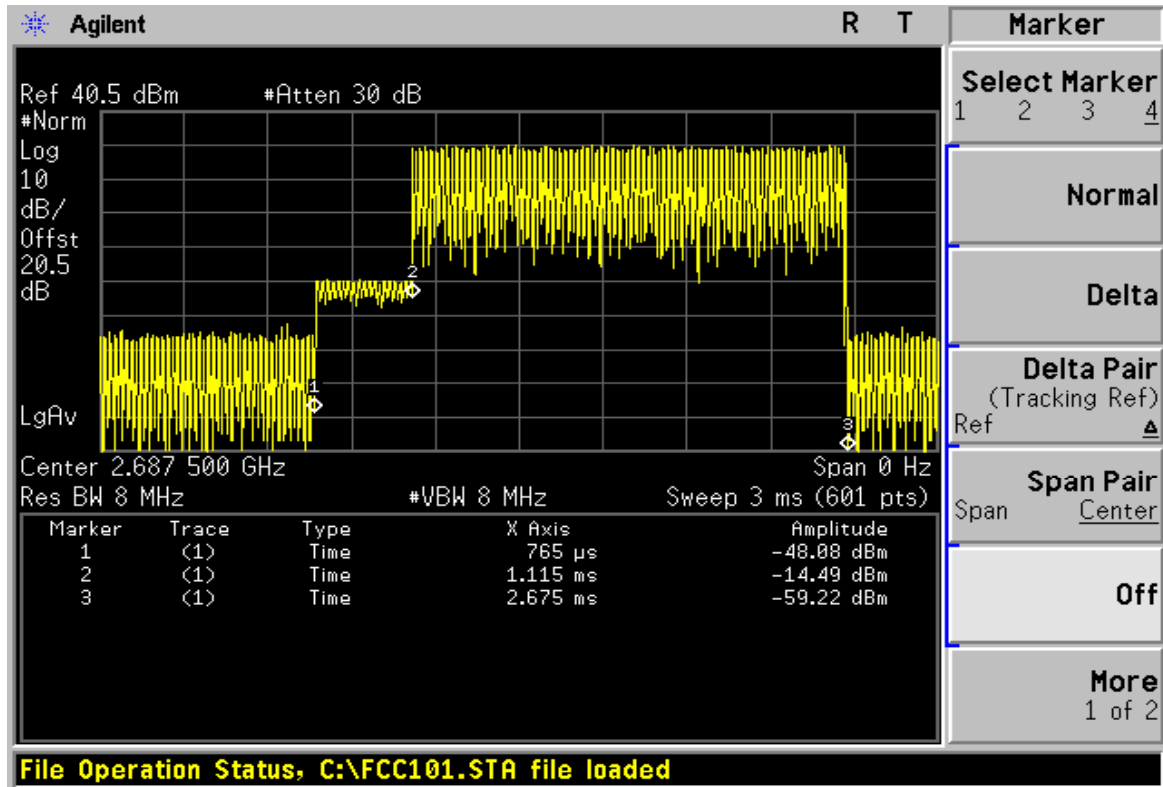


ZONE TYPE        PUSC  
MODULATION      16QAM 1/2  
BANDWIDTH       5MHz  
  
FREQUENCY       2687.5 MHz

Plot 1



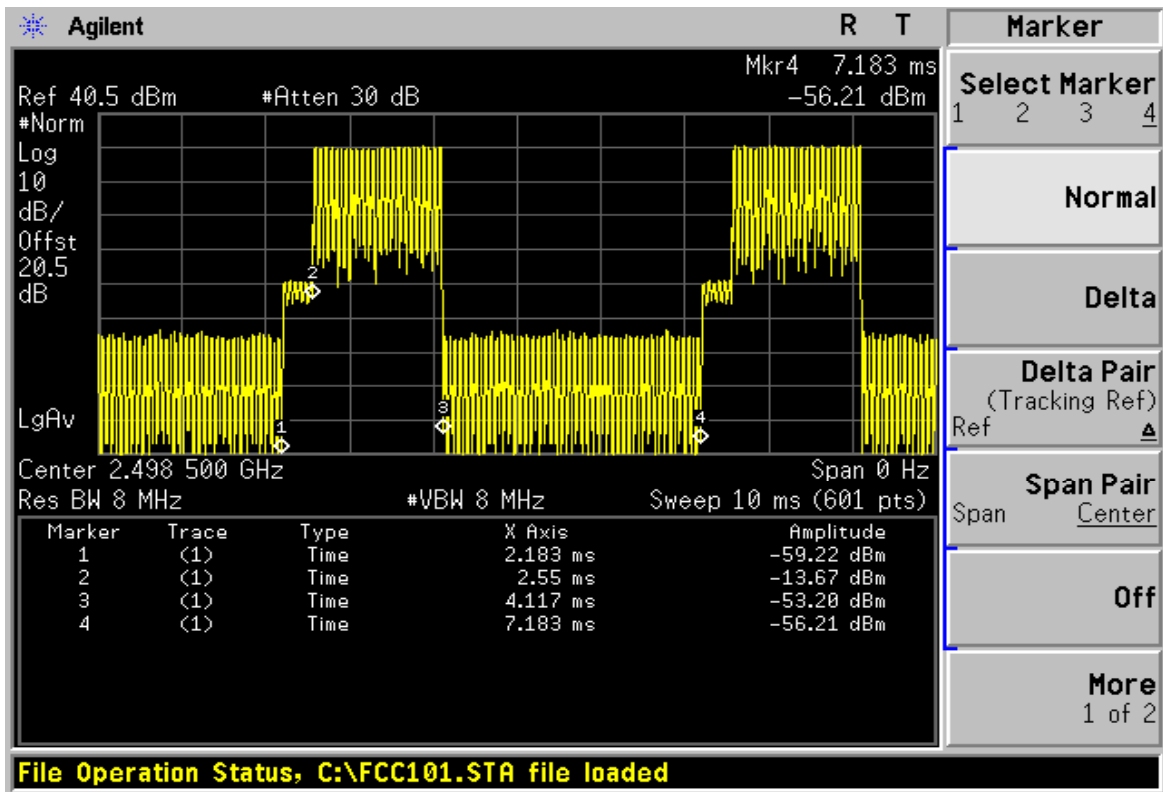
Plot 2



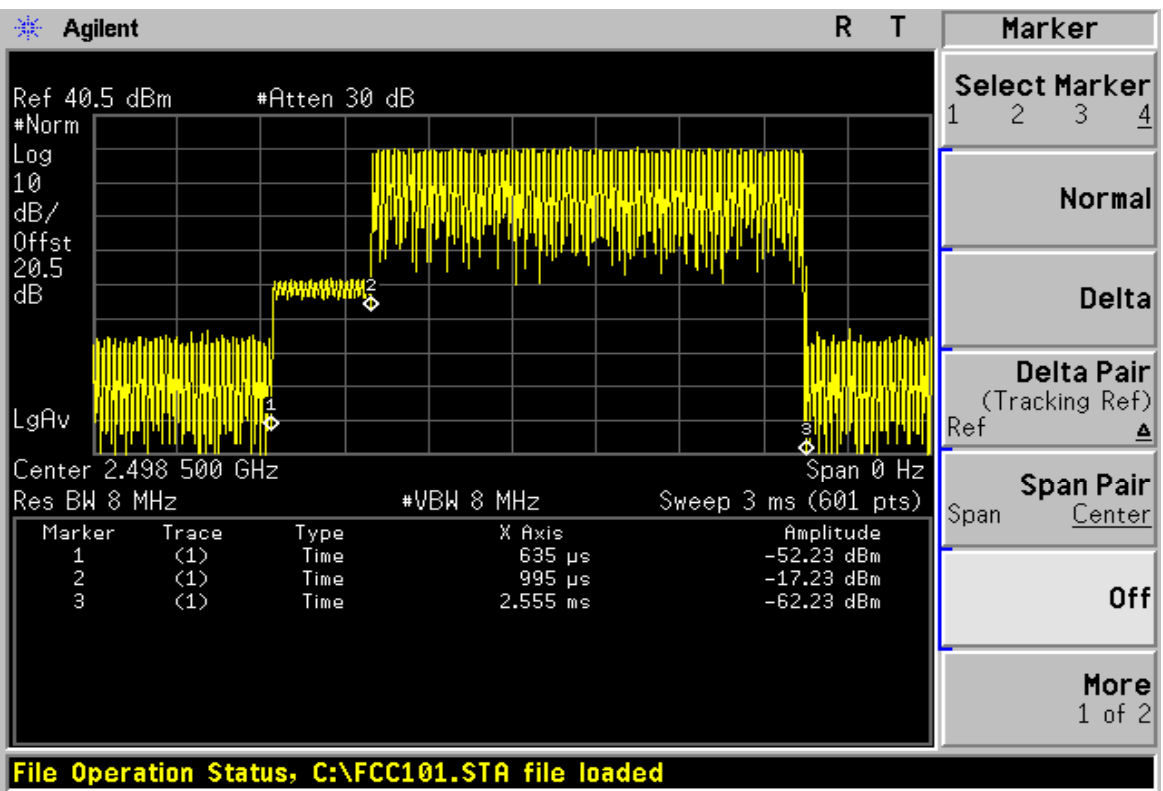
ZONE TYPE        PUSC  
MODULATION     16QAM 3/4  
BANDWIDTH      5MHz

FREQUENCY       2498.5 MHz

Plot 1



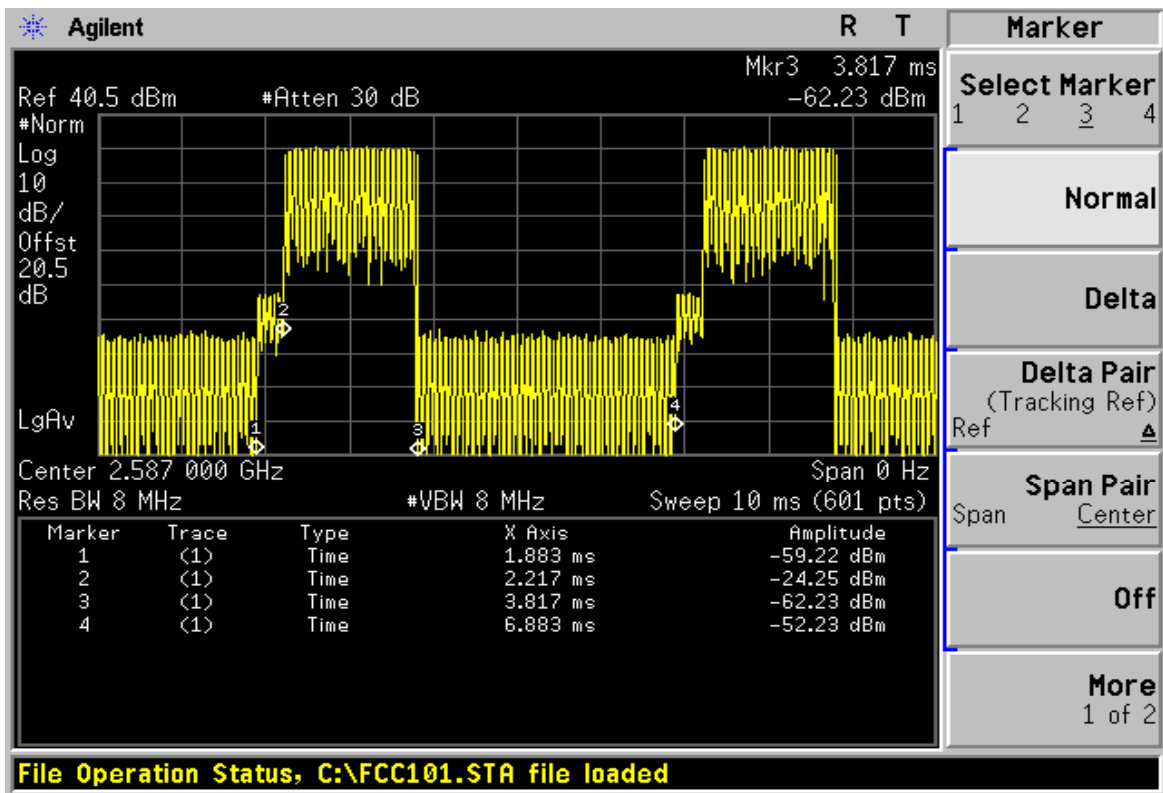
Plot 2



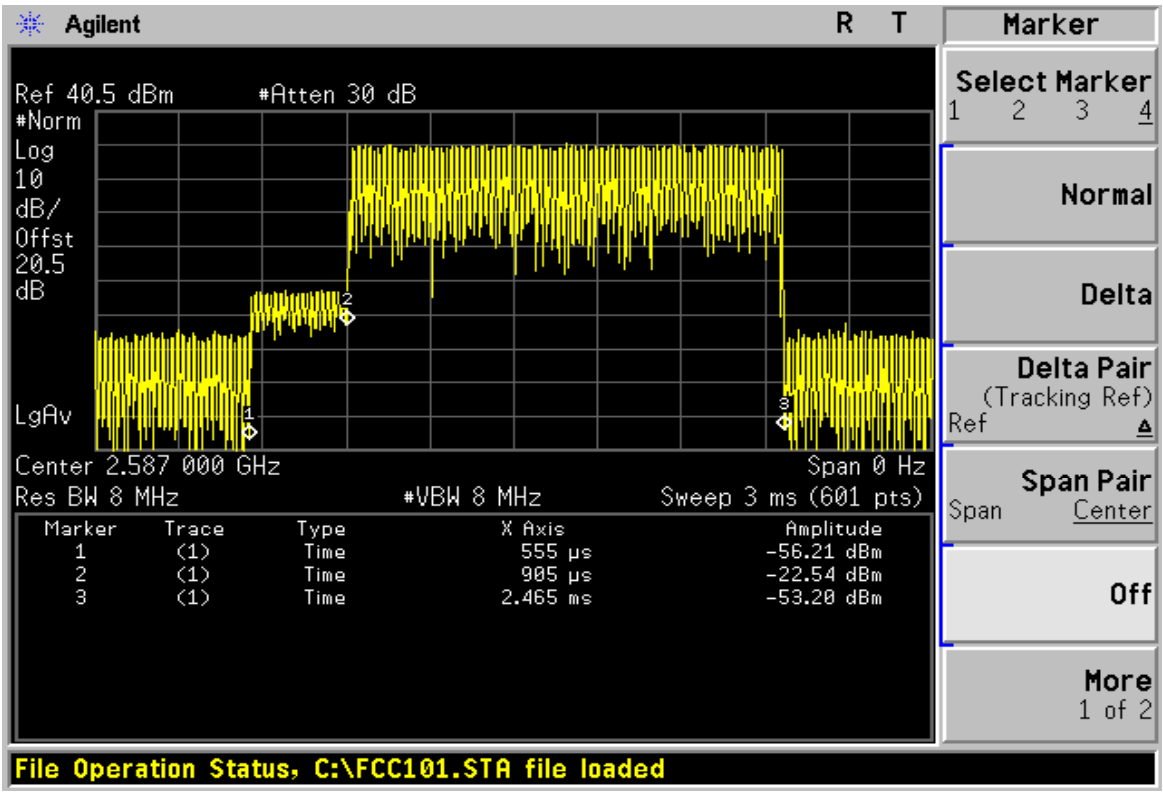
ZONE TYPE        PUSC  
MODULATION      16QAM 3/4  
BANDWIDTH       5MHz

FREQUENCY       2587 MHz

Plot 1

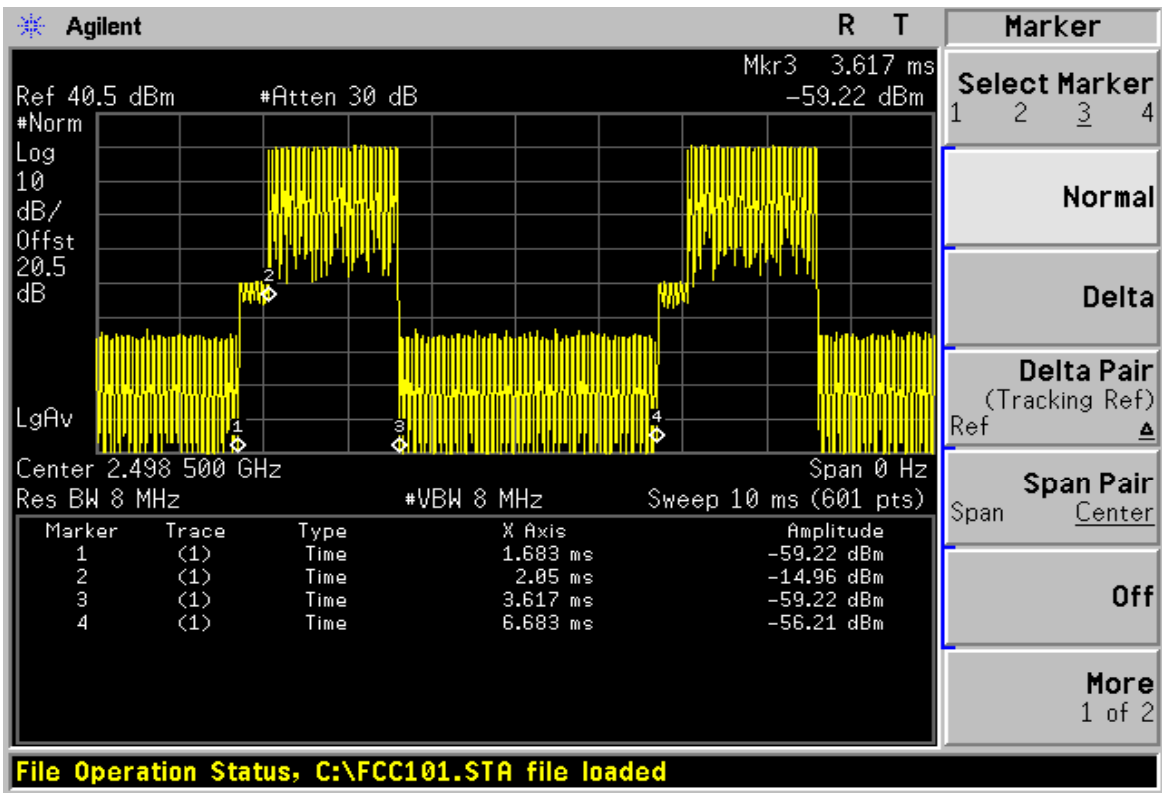


Plot 2

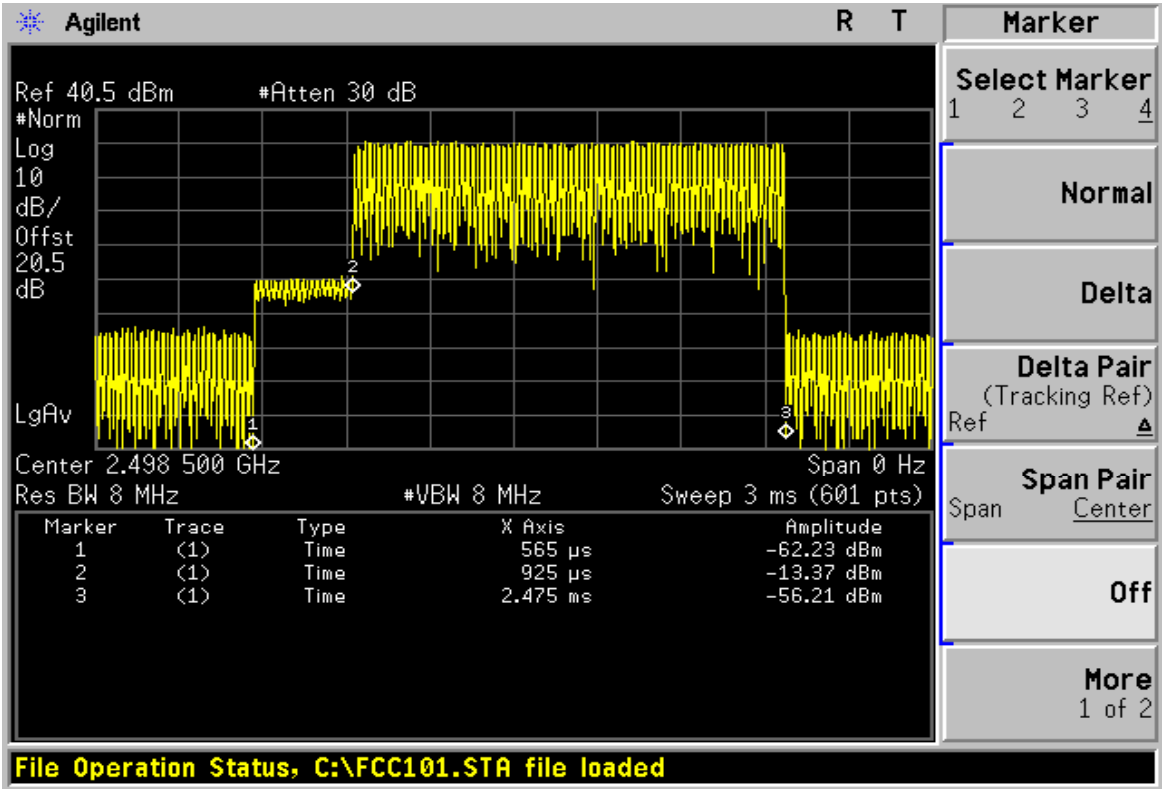


ZONE TYPE        PUSC  
MODULATION      16QAM 3/4  
BANDWIDTH       5MHz  
  
FREQUENCY       2687.5 MHz

Plot 1



Plot 2



## **APPENDIX D DUTY CYCLE OF TEST SIGNAL FOR 10MHz BANDWIDTH**



## Summary measured result of signal duty cycle measurement:

Channel BW	UL zone type / DL/UL symbols	modulation	Measured Duty Cycle(%)		
			Channel		
			Low	Mid	High
10MHz	PUSC / 29/18	QPSK-1/2	31.2	31.2	31.2
		QPSK-3/4	31.2	31	31
		16QAM-1/2	31	31.2	31.2
		16QAM-3/4	31	31.2	31.2

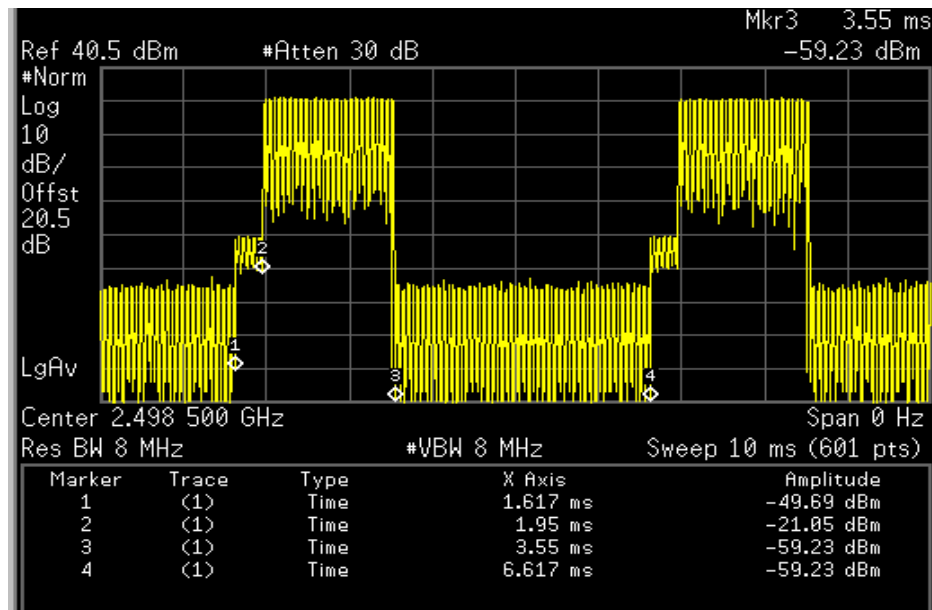
## Calculation of Duty cycle ( UL : DL ratio of test signal is 18:29 )

2 plots are measured for duty cycle to each condition shown on above summary table

Plot 1 is used to get the burst length of test signal.

Burst length = Mark 4 – Mark 1

Plot 1

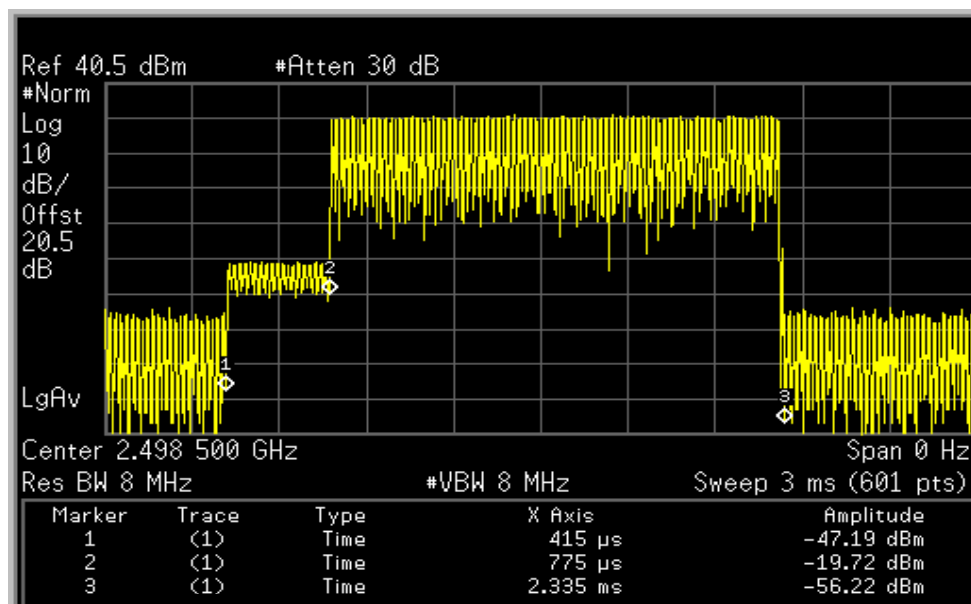


Plot 2 is used to get the UL time of test signal.

Mark 2 – Mark1 = First 3 symbols UL time

Mark 3 – Mark 2 =15 symbols UL time

Plot 2



Per KDB 615223 , the first 3 symbols UL time is ignored

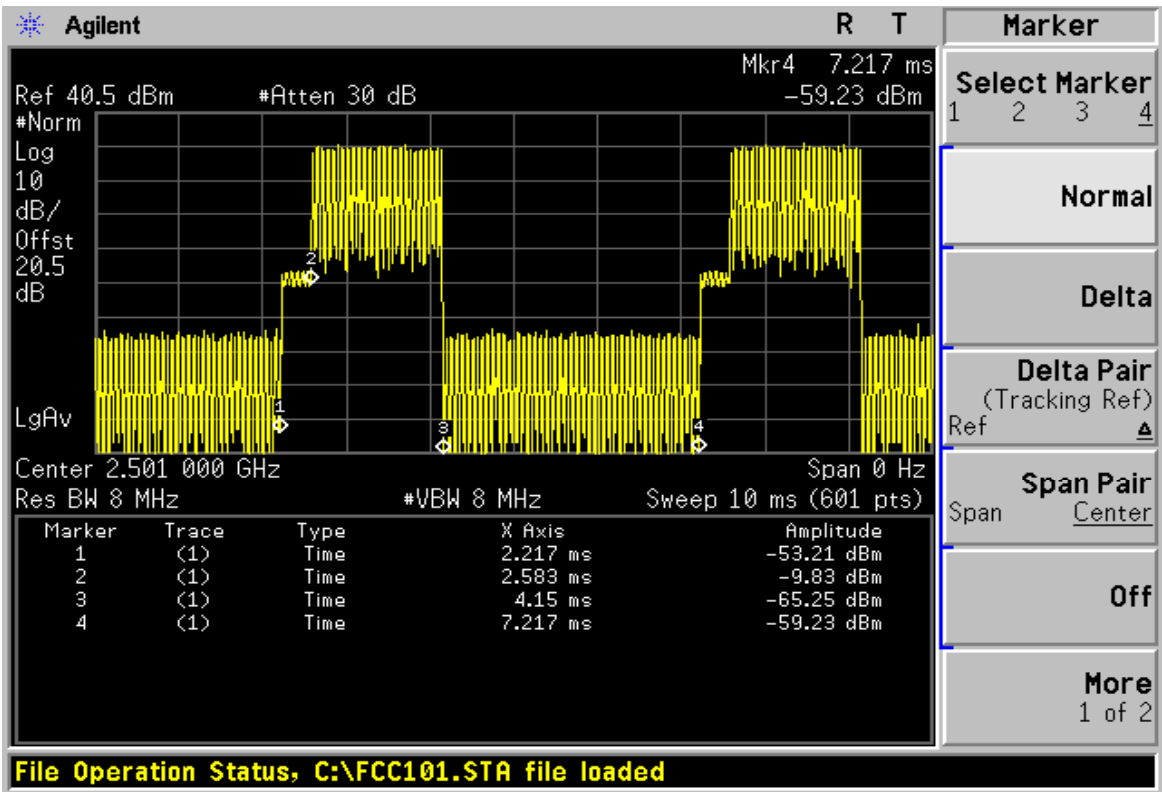
Therefore, calculation formula is as below

Duty cycle = 15 symbol UL time / Burst length \*100 %

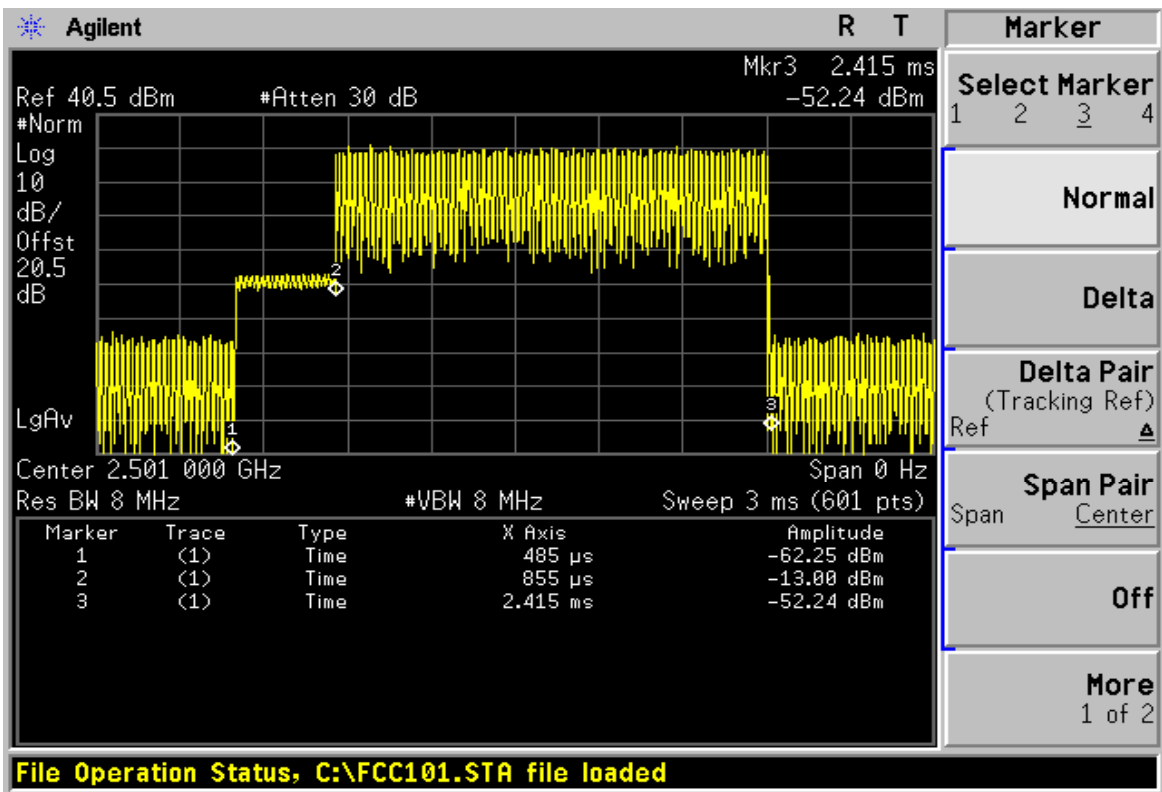
ZONE TYPE        PUSC  
MODULATION      QPSK 1/2  
BANDWIDTH       10MHz

FREQUENCY        2501 MHz

Plot 1

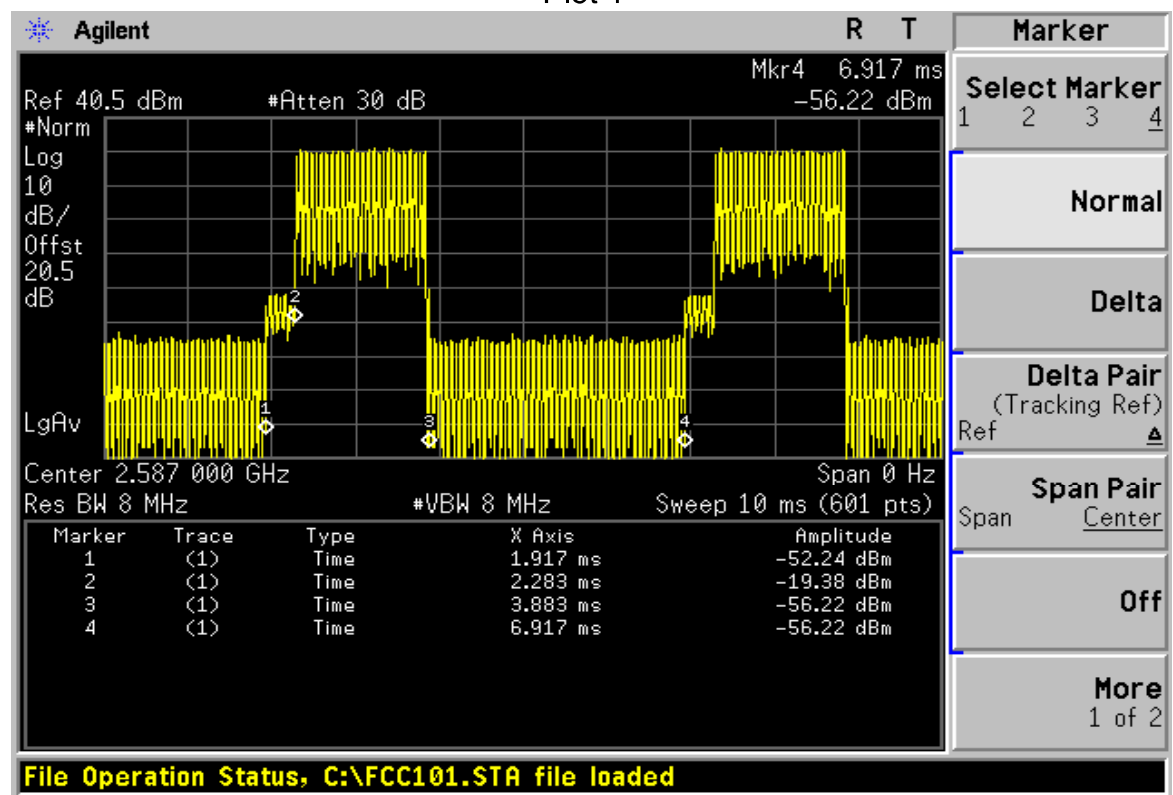


Plot 2

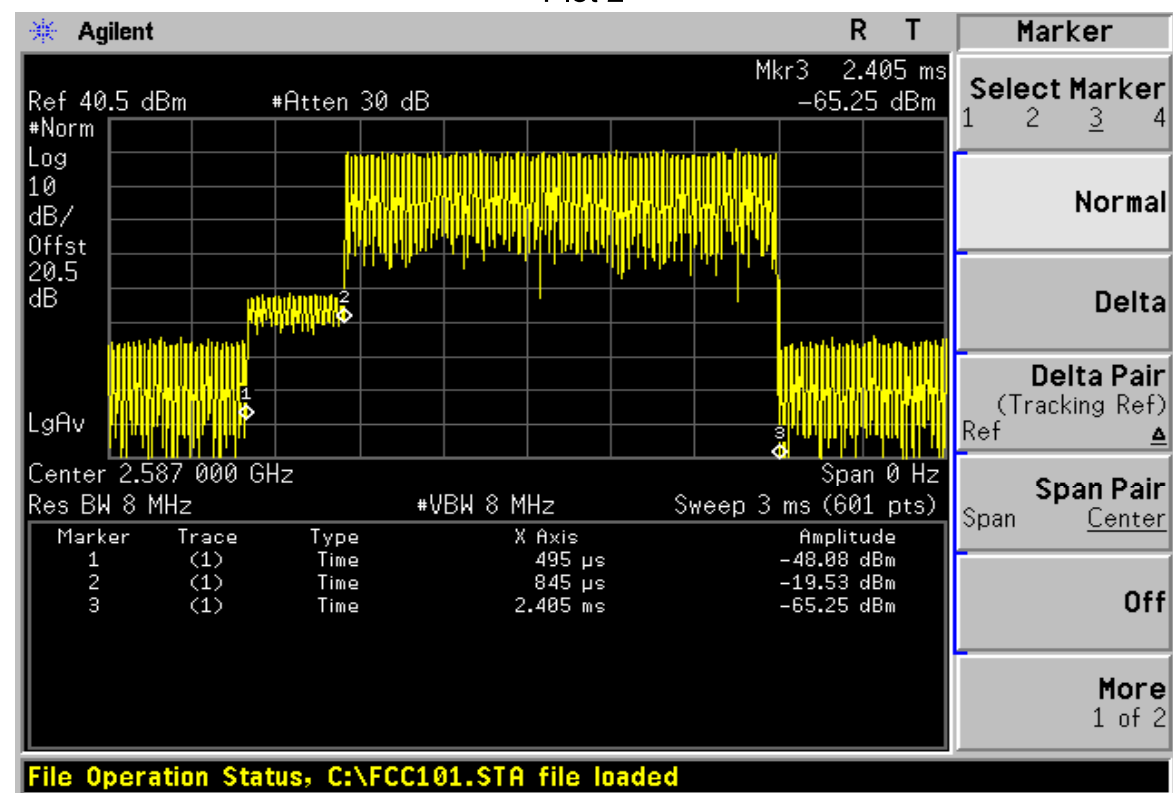


ZONE TYPE PUSC  
MODULATION QPSK 1/2  
BANDWIDTH 10MHz  
  
FREQUENCY 2587 MHz

Plot 1



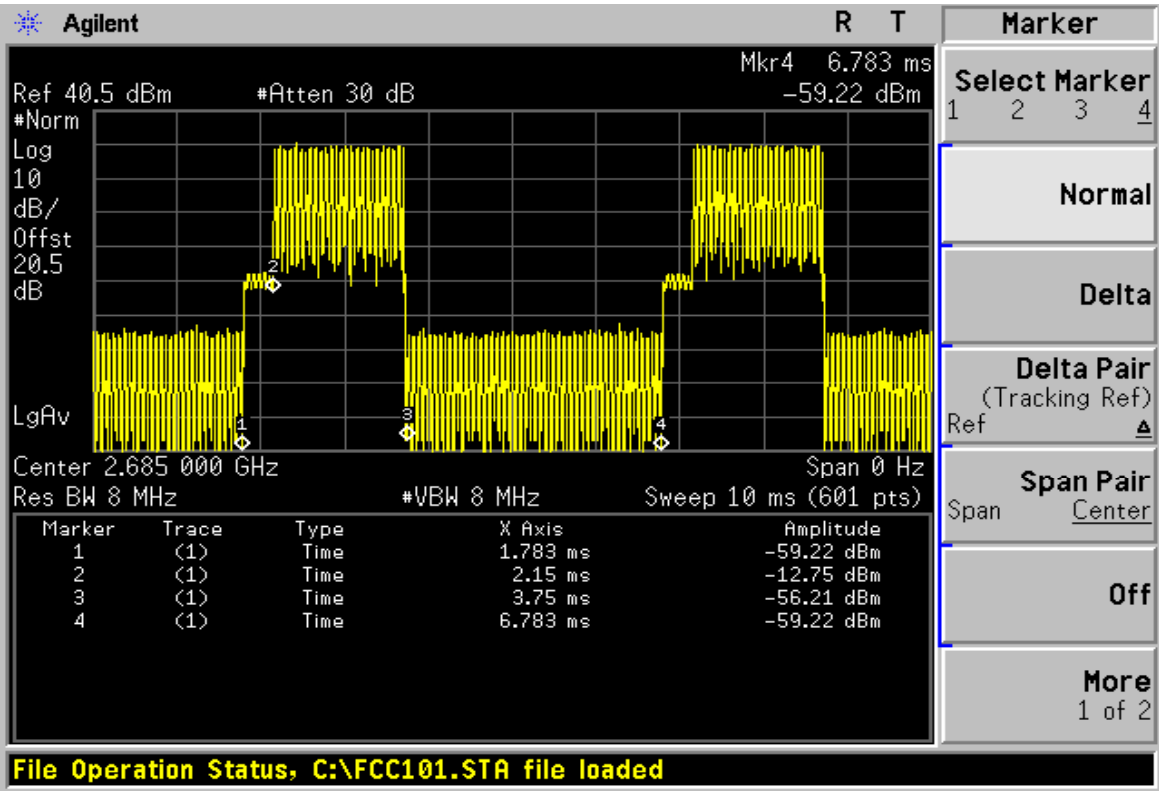
Plot 2



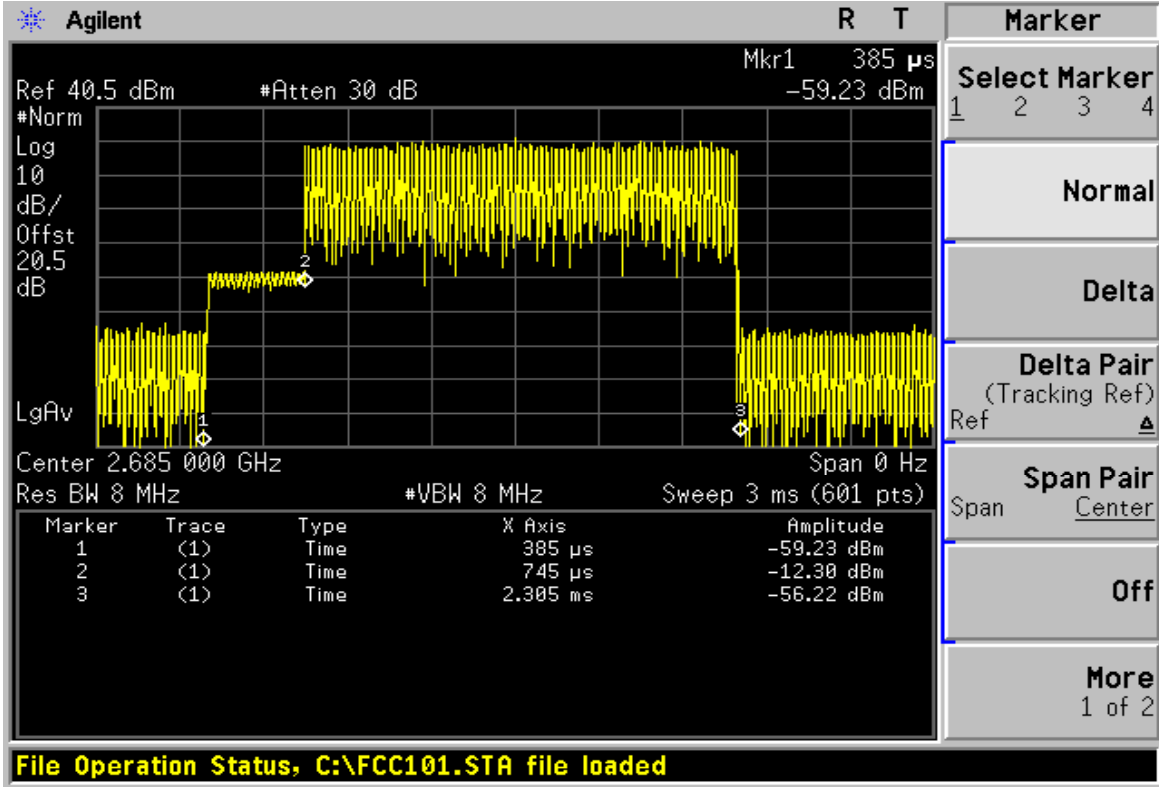
ZONE TYPE        PUSC  
MODULATION      QPSK 1/2  
BANDWIDTH       10MHz

FREQUENCY       2685 MHz

Plot 1



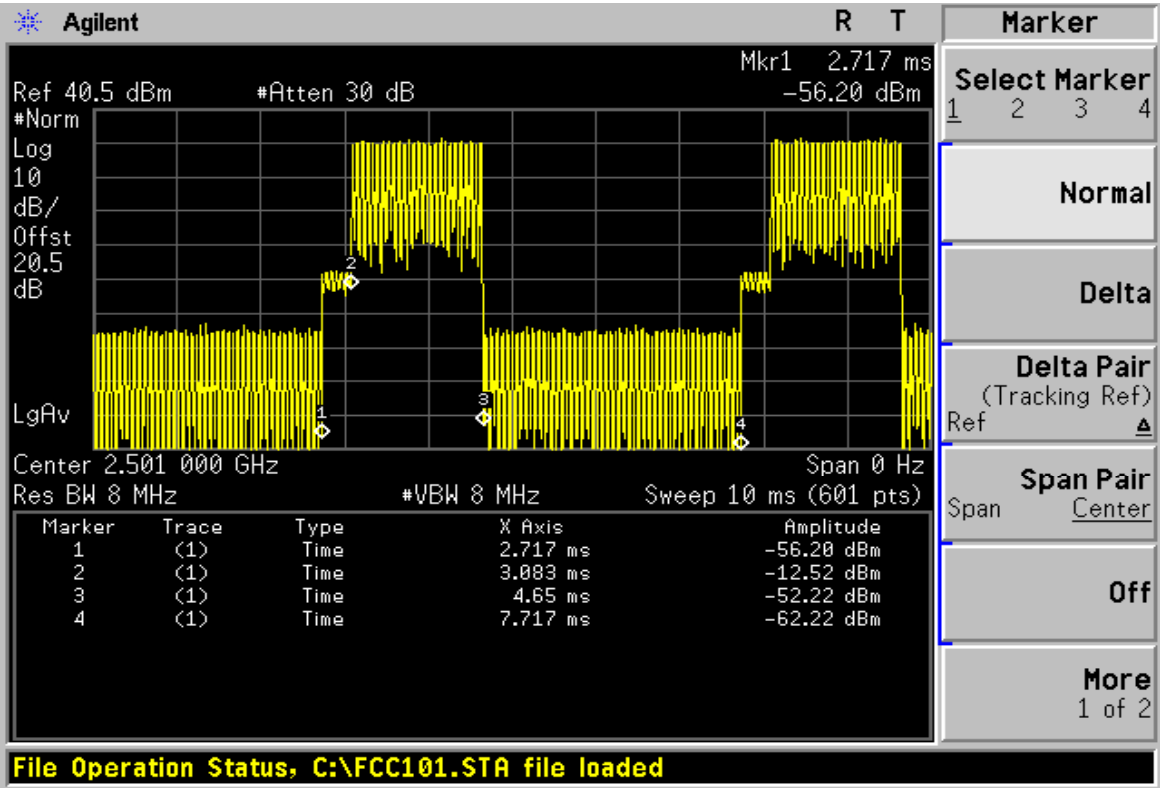
Plot 2



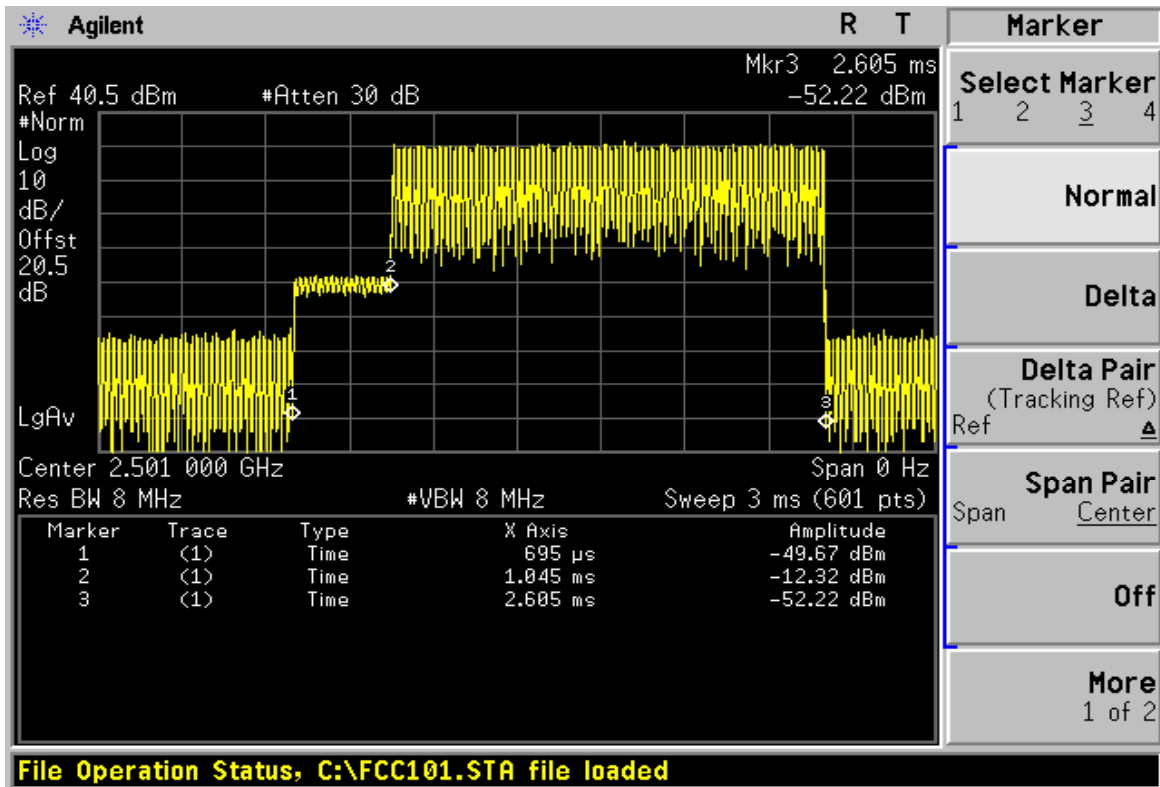
ZONE TYPE        PUSC  
MODULATION      QPSK 3/4  
BANDWIDTH       10MHz

FREQUENCY       2501 MHz

Plot 1



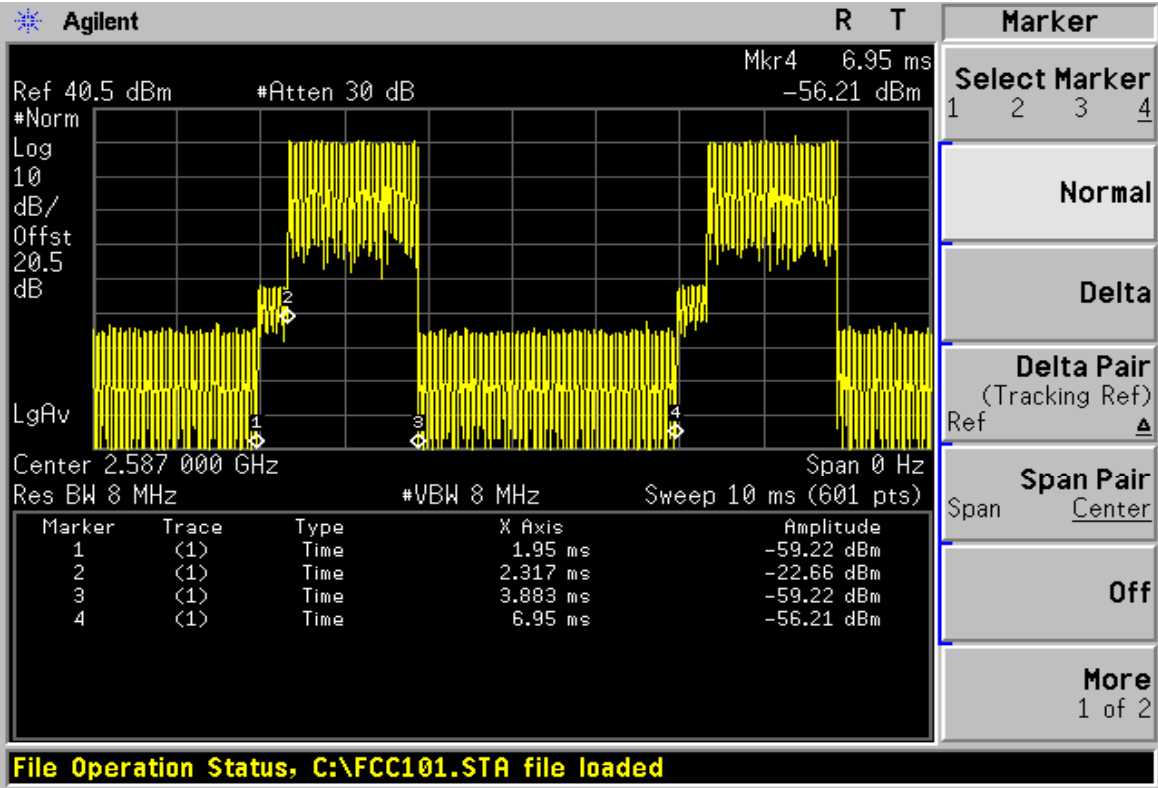
Plot 2



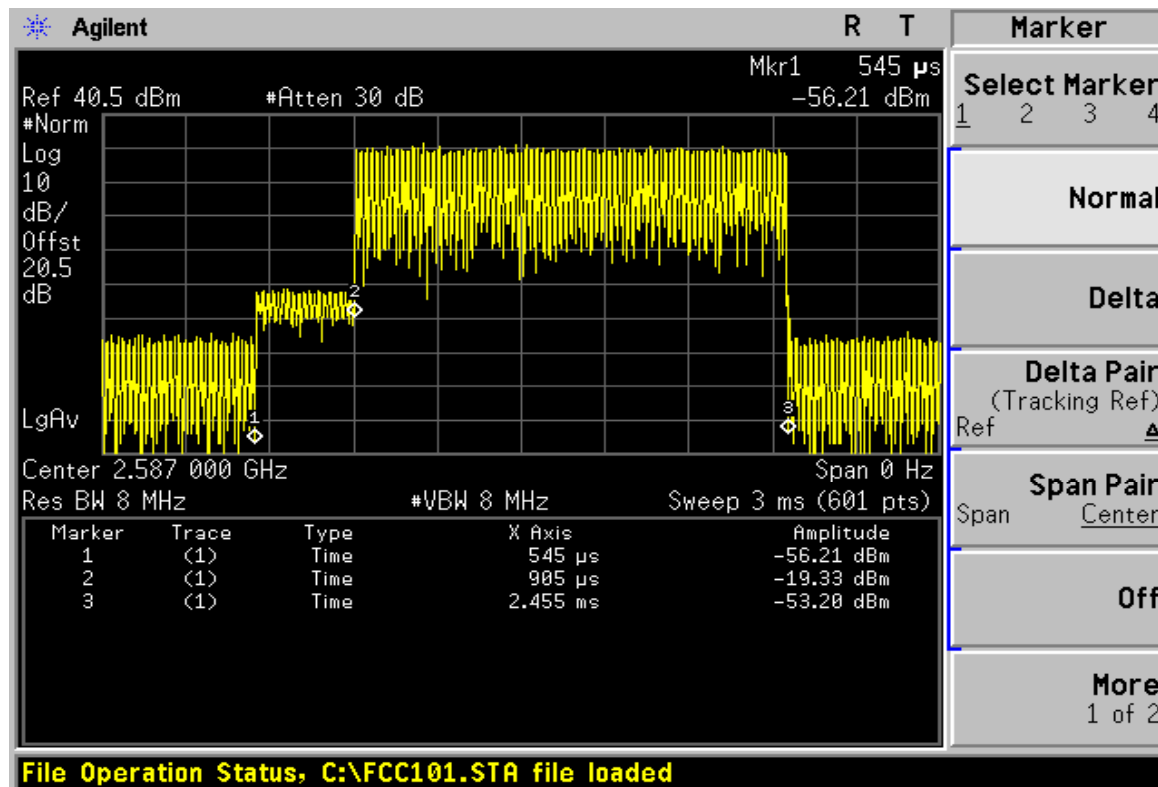
ZONE TYPE        PUSC  
MODULATION      QPSK 3/4  
BANDWIDTH       10MHz

FREQUENCY       2587 MHz

Plot 1

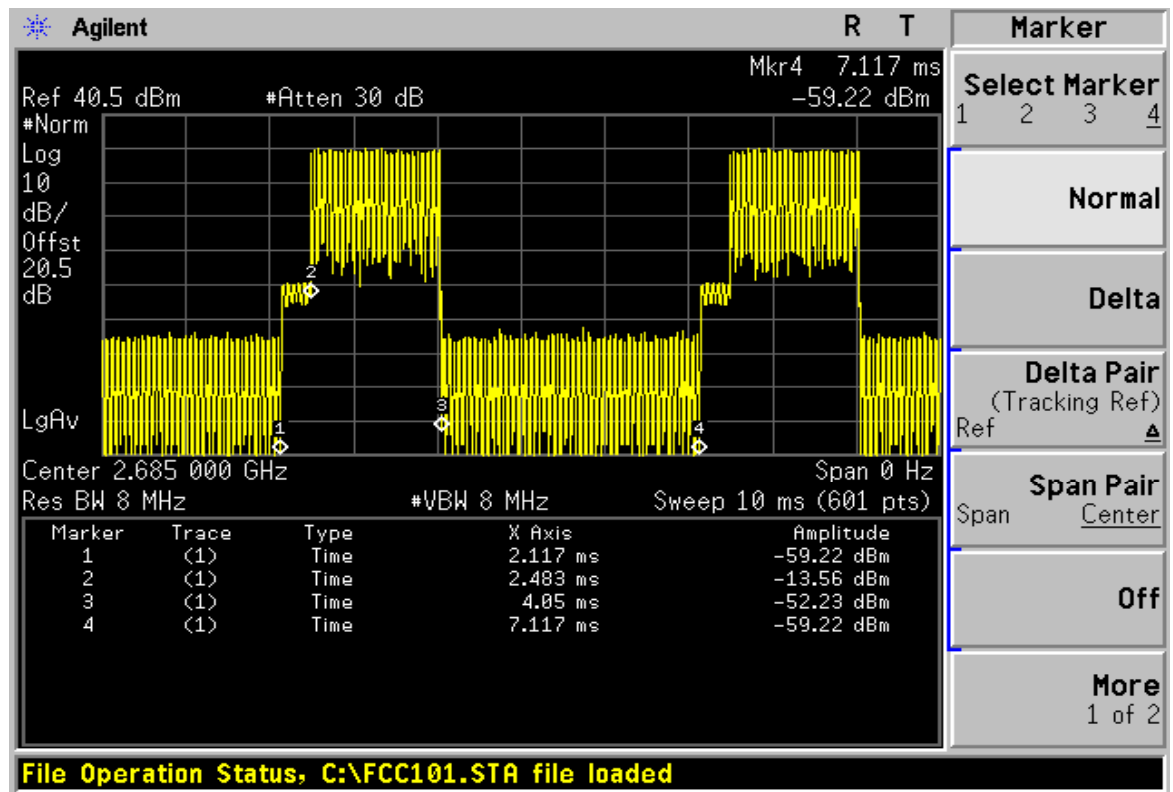


Plot 2

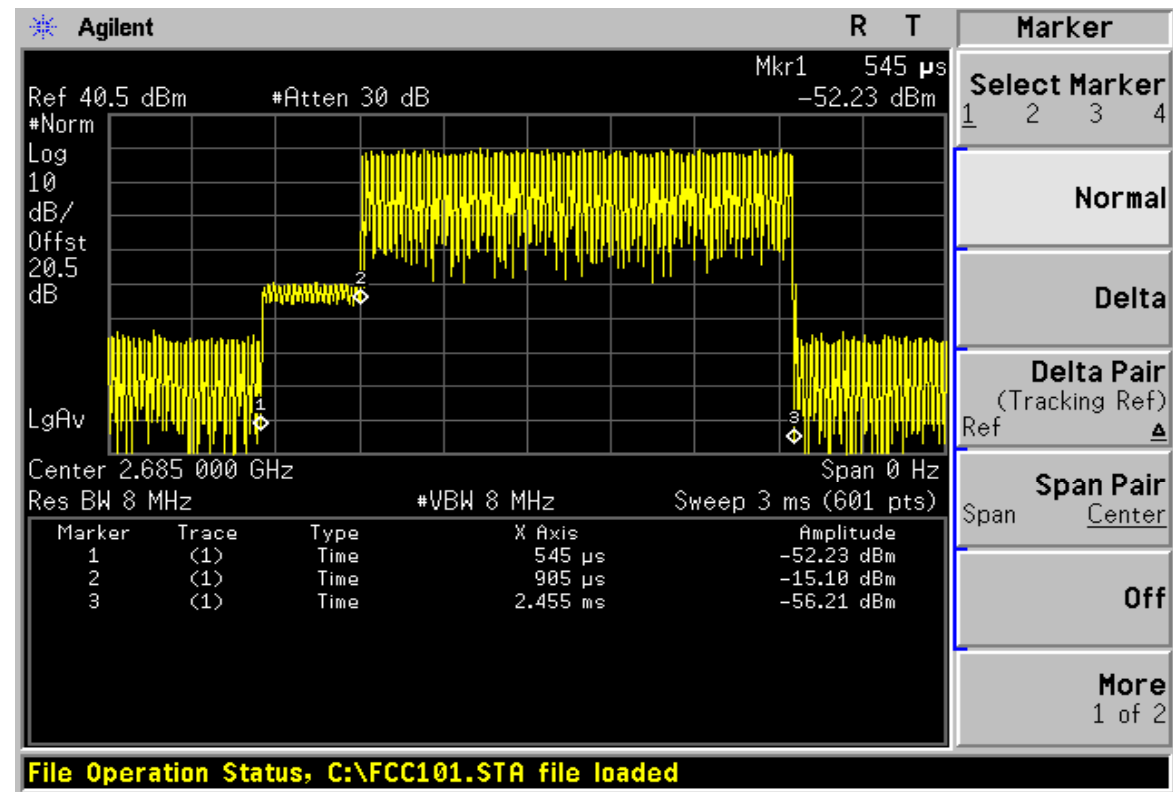


ZONE TYPE PUSC  
MODULATION QPSK 3/4  
BANDWIDTH 10MHz  
  
FREQUENCY 2685 MHz

Plot 1



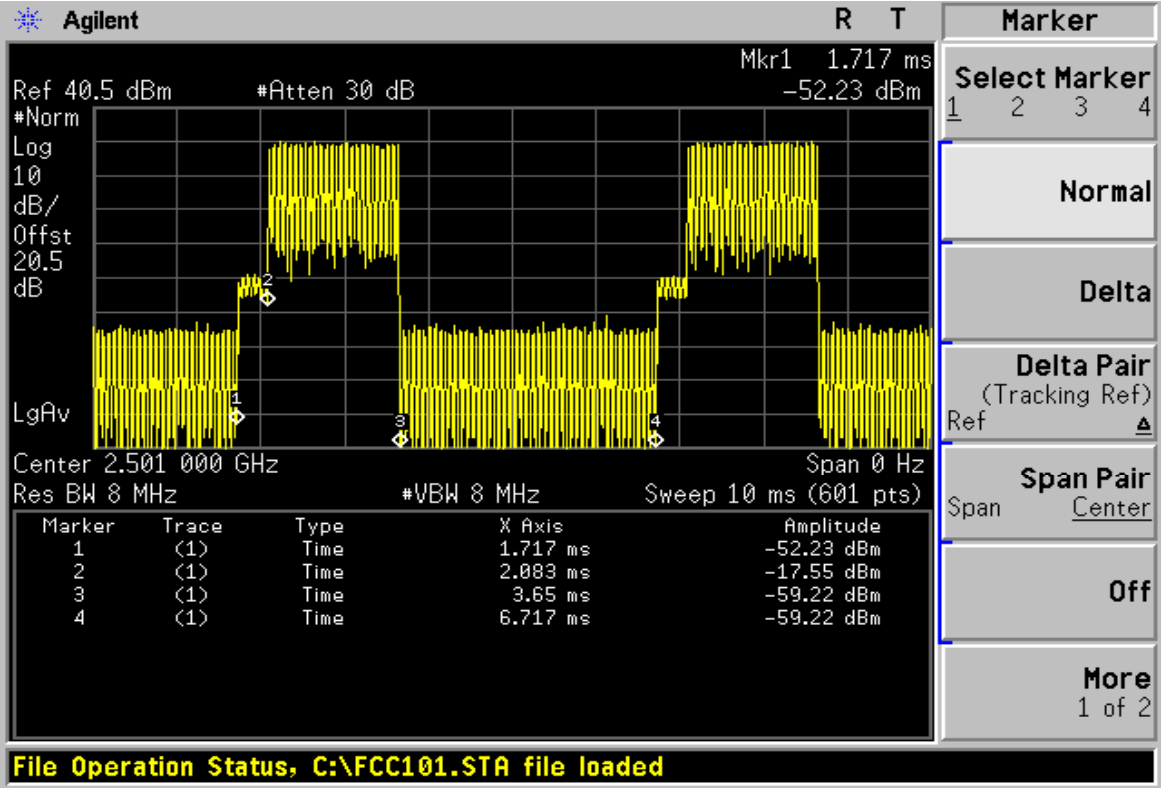
Plot 2



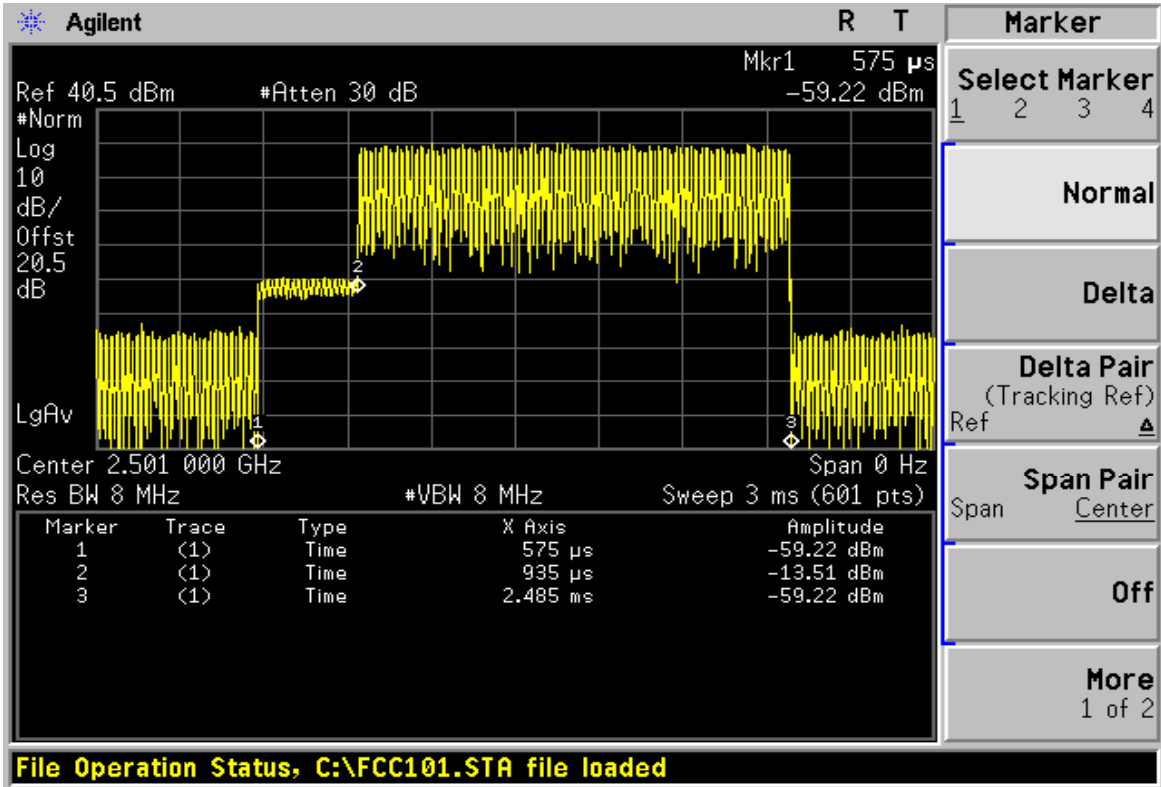


ZONE TYPE        PUSC  
MODULATION     16QAM 1/2  
BANDWIDTH       10MHz  
  
FREQUENCY       2501 MHz

Plot 1



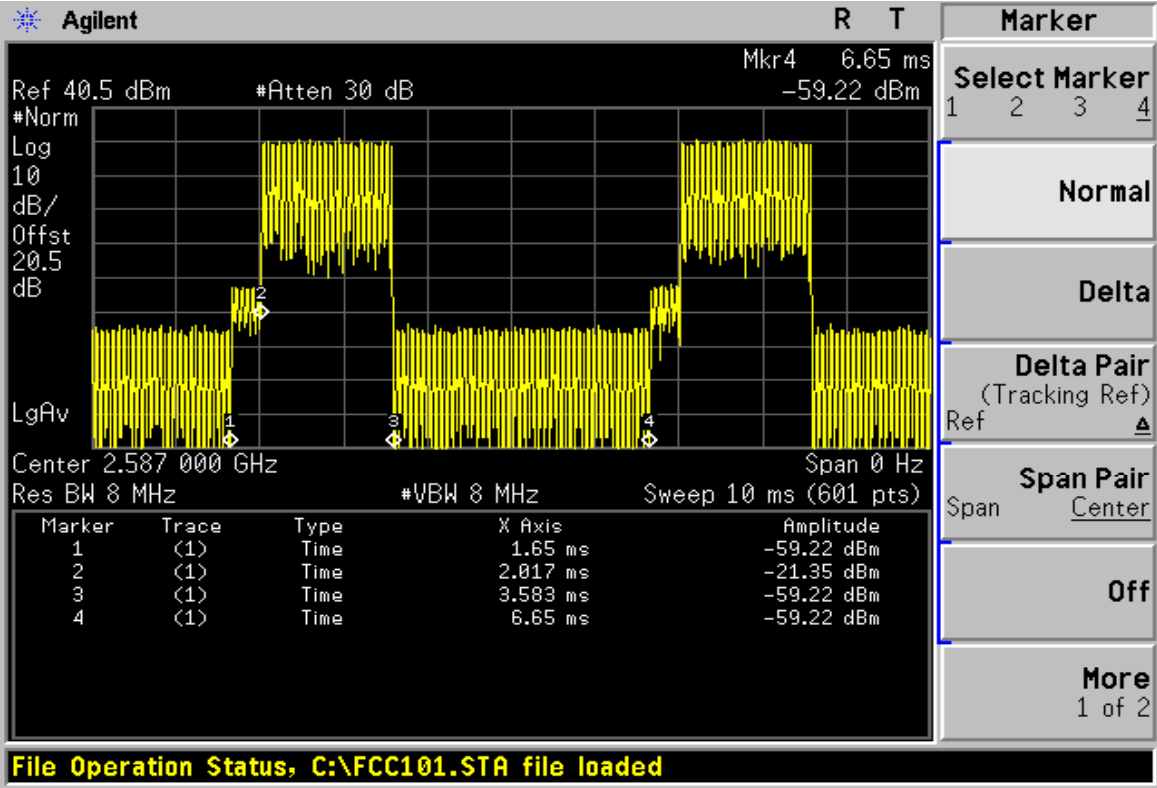
Plot 2



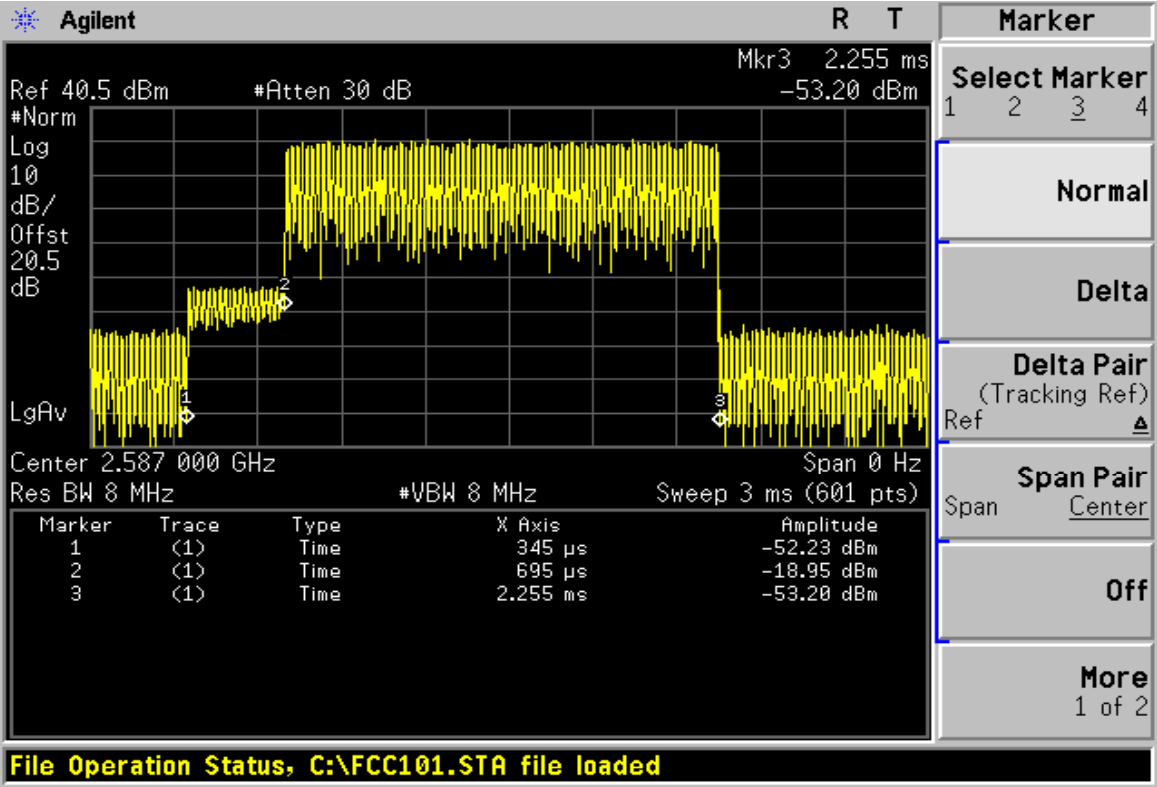
ZONE TYPE        PUSC  
MODULATION      16QAM 1/2  
BANDWIDTH       10MHz

FREQUENCY       2587 MHz

Plot 1

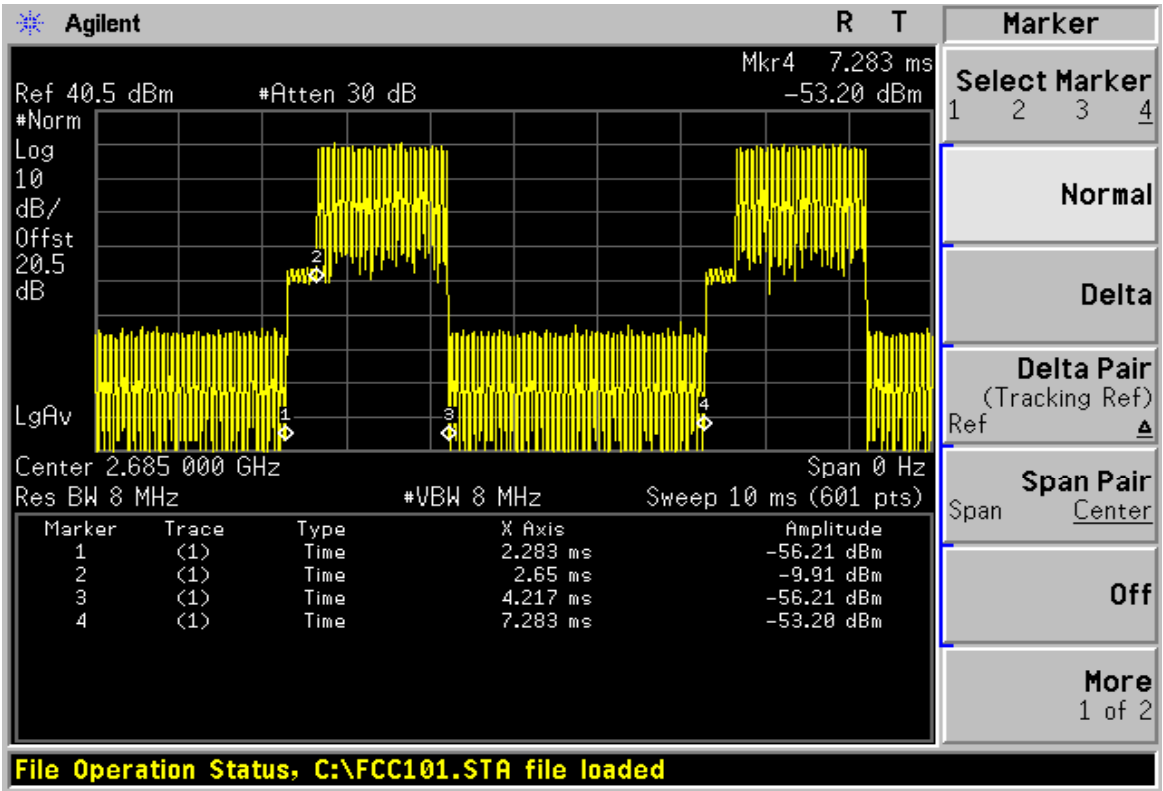


Plot 2

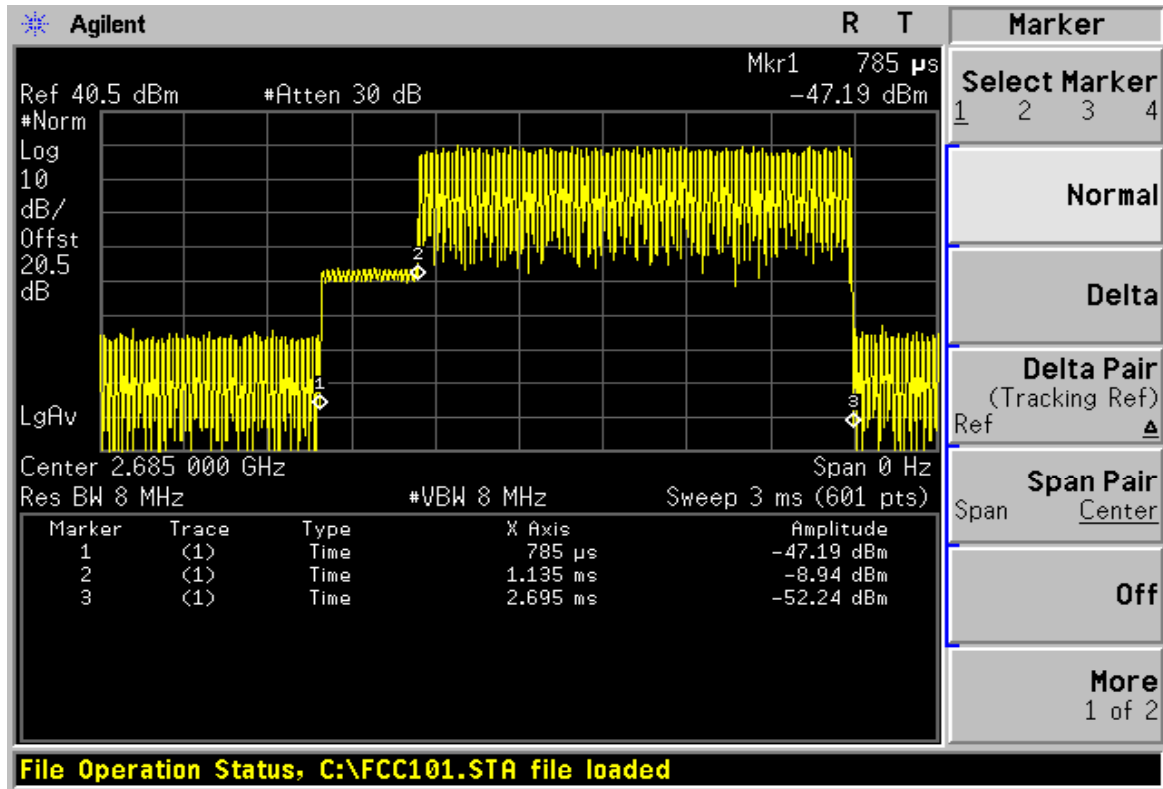


ZONE TYPE        PUSC  
MODULATION      16QAM 1/2  
BANDWIDTH       10MHz  
  
FREQUENCY       2685 MHz

Plot 1

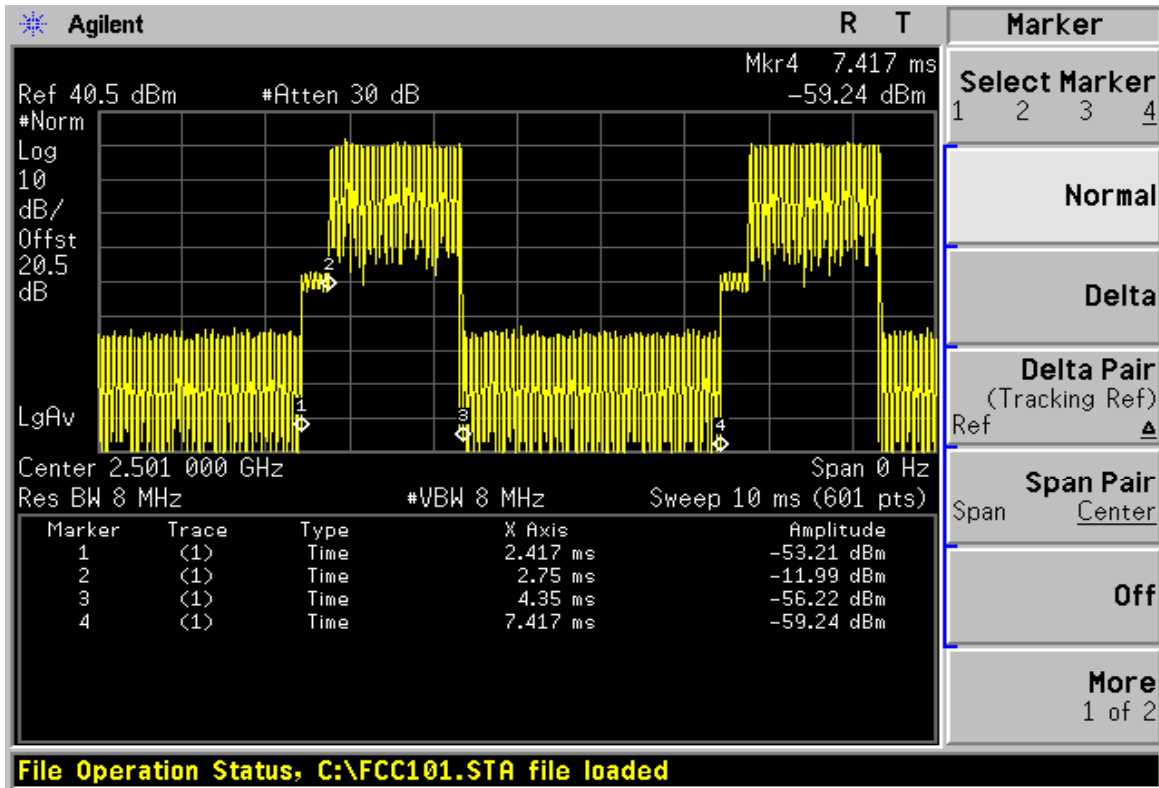


Plot 2

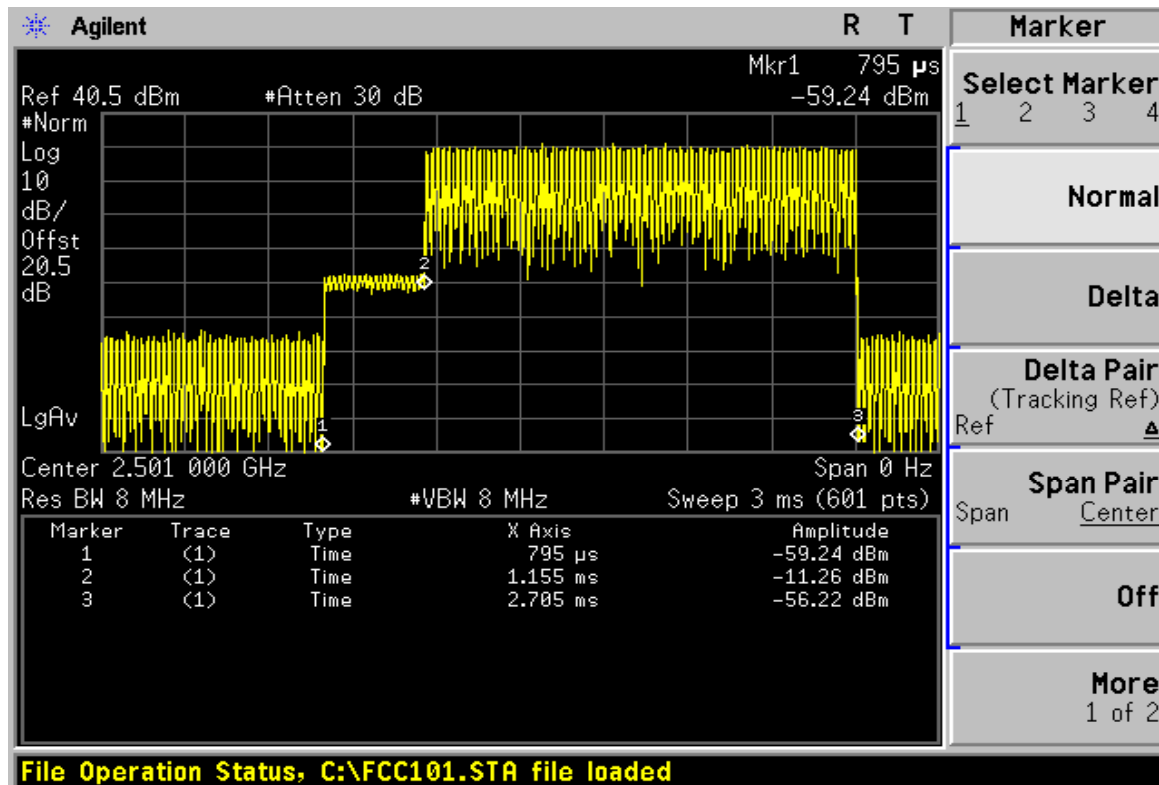


FREQUENCY 2501 MHz

### Plot 1

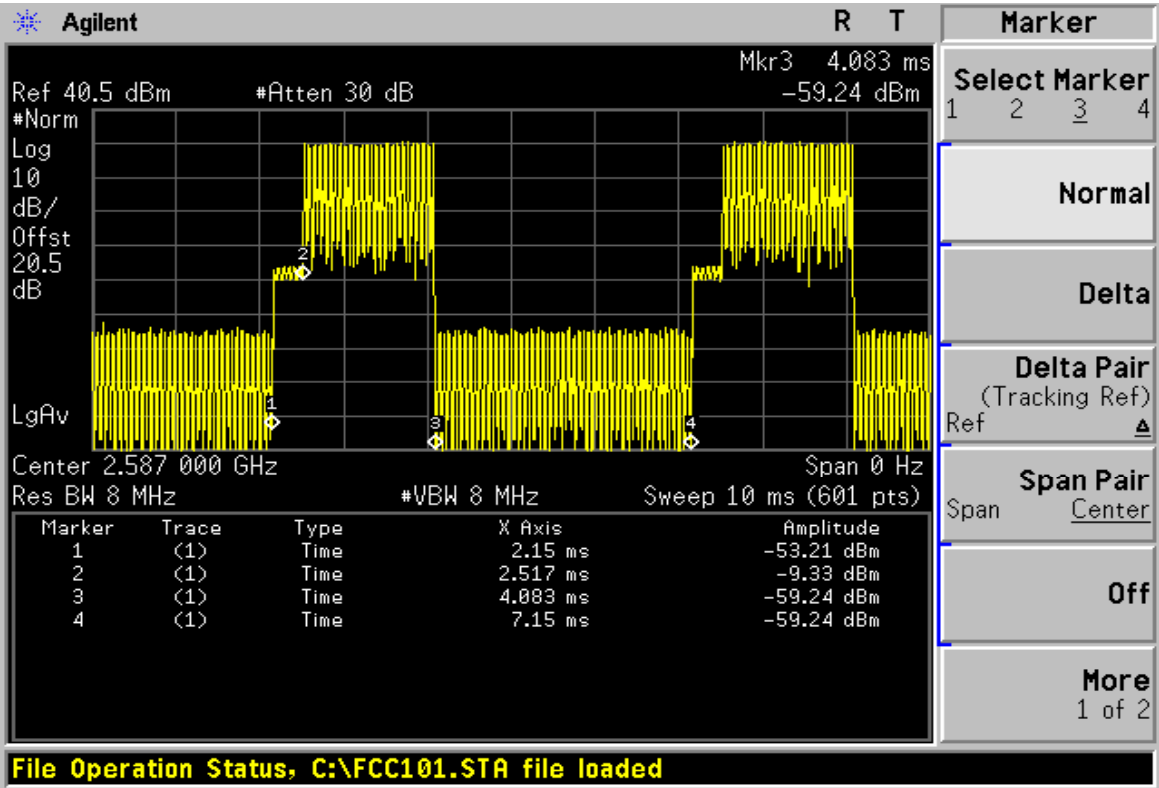


## Plot 2

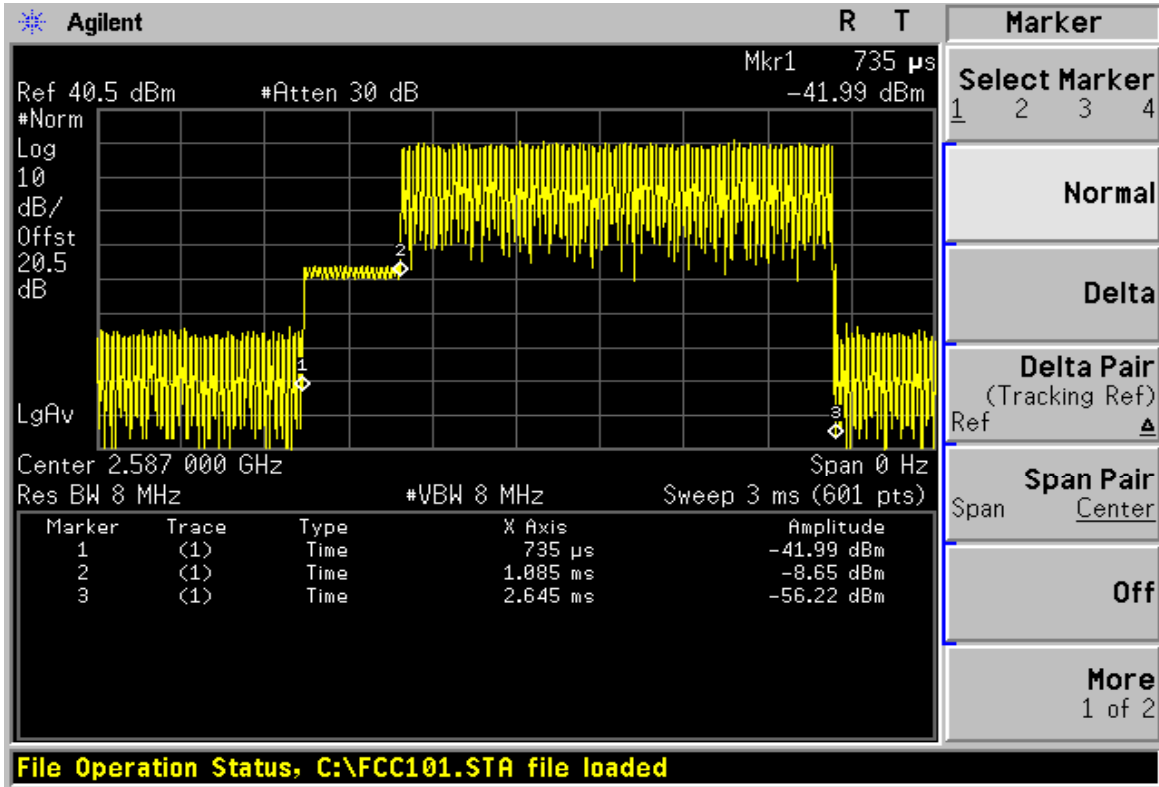


ZONE TYPE        PUSC  
MODULATION     16QAM 3/4  
BANDWIDTH       10MHz  
  
FREQUENCY       2587 MHz

Plot 1



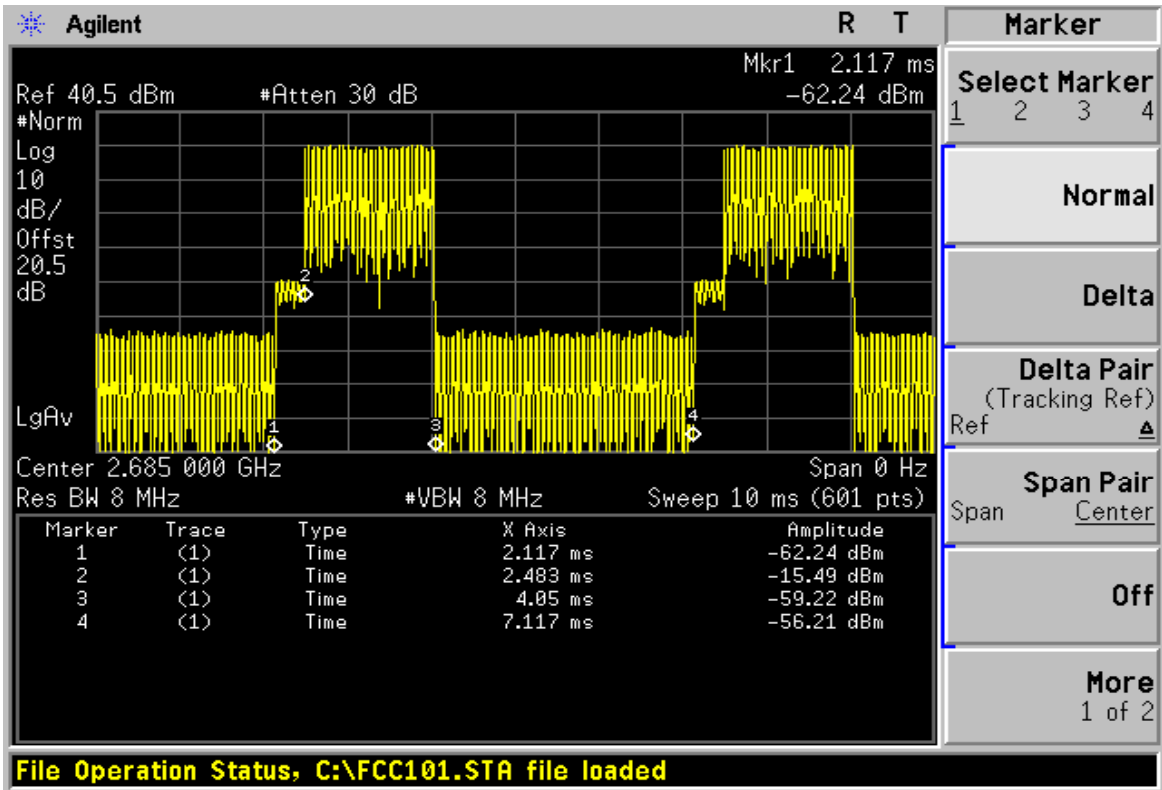
Plot 2



ZONE TYPE        PUSC  
MODULATION      16QAM 3/4  
BANDWIDTH       10MHz

FREQUENCY       2685 MHz

Plot 1



Plot 2

