

Hi channel, QPSK, 7MHz, antenna port 1			
Channel frequency (MHz)	3695		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
-30	3694.9897	-10300	
-20	3694.9899	-10100	
-10	3694.9917	-8300	
0	3695	0	
10	3695	0	
20	3695	0	
30	3695.0034	3400	
40	3695.0087	8700	
50	3695.0106	10600	
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3695	0	
Nominal-15%	3695	0	
Max deviation (Hz)	10600		
Max deviation (PPM)	2.868741543		

Hi channel, QPSK, 10MHz,
antenna port 1

Channel frequency (MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.99023	-9770
-20	3694.9987	-1300
-10	3694.999	-1000
0	3694.9999	-100.0000002
10	3694.9999	-100.0000002
20	3695	0
30	3695	0
40	3695.00091	910.0000002
50	3695.0108	10800

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695.003	3000
Nominal-15%	3695.001	1000

Max deviation (Hz) 10800

Max deviation (PPM) 2.922868742

Hi channel, 16QAM,
5MHz, antenna port 1

Channel frequency (MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.99	-10000
-20	3694.9997	-300.0000002
-10	3694.9997	-300.0000002
0	3694.9996	-399.9999999
10	3695	0
20	3695	0
30	3695	0
40	3695.0019	1900
50	3695.00935	9350

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695	0
Nominal-15%	3695	0

Max deviation (Hz) 10000
Max deviation (PPM) 2.706359946

Hi channel, 16QAM,
7MHz, antenna port 1

Channel frequency (MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.9807	-19300
-20	3694.9855	-14500
-10	3694.9921	-7900
0	3694.999	-1000
10	3694.9999	-100.0000002
20	3695	0
30	3695	0
40	3695	0
50	3695.0007	700.0000001

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695	0
Nominal-15%	3695	0

Max deviation (Hz) 19300
Max deviation (PPM) 5.223274696

Hi channel, 16QAM,
10MHz, antenna port 1

Channel frequency (MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.984	-16000
-20	3694.9877	-12300
-10	3694.9992	-799.9999998
0	3694.9999	-100.0000002
10	3694.9999	-100.0000002
20	3695	0
30	3695	0
40	3695.0001	100.0000002
50	3695.0029	2900

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3694.9986	-1400
Nominal-15%	3695	0

Max deviation (Hz) 16000
Max deviation (PPM) 4.330175913

Hi channel, 64QAM,
5MHz, antenna port 1

Channel frequency (MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.9899	-10100
-20	3694.9911	-8900
-10	3694.9999	-100.0000002
0	3695	0
10	3695	0
20	3695	0
30	3695.0006	599.9999998
40	3695.007	7000
50	3695.0104	10400

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695	0
Nominal-15%	3695	0

Max deviation (Hz) 10400
Max deviation (PPM) 2.814614344

Hi channel, 64QAM,
7MHz, antenna port 1

Channel frequency (MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.998	-2000
-20	3694.998	-2000
-10	3694.9999	-100.0000002
0	3694.9999	-100.0000002
10	3695	0
20	3695	0
30	3695	0
40	3695.0003	300.0000002
50	3695.0014	1400

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695	0
Nominal-15%	3695	0

Max deviation (Hz) 2000
Max deviation (PPM) 0.541271989

Hi channel, 64QAM,
10MHz, antenna port 1

Channel frequency (MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.9963	-3700
-20	3694.997	-3000
-10	3694.999	-1000
0	3694.999	-1000
10	3695	0
20	3695	0
30	3695.004	4000
40	3695.0092	9200
50	3695.0196	19600

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695	0
Nominal-15%	3695	0
Max deviation (Hz)	19600	
Max deviation (PPM)	5.304465494	

Low channel, QPSK, 5MHz, antenna port 2			
Channel frequency (MHz)	3655		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
-30	3654.99912	-880.0000001	
-20	3654.9999	-100.0000002	
-10	3654.9991	-900	
0	3655	0	
10	3655	0	
20	3655	0	
30	3655.0004	399.9999999	
40	3655.00267	2670	
50	3655.0194	19400	
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3655	0	
Nominal-15%	3655.00014	140.0000001	
Max deviation (Hz)	19400		
Max deviation (PPM)	5.307797538		

Low channel, QPSK, 7MHz, antenna port 2			
Channel frequency (MHz)	3655		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
-30	3654.9914	-8600	
-20	3654.99112	-8880	
-10	3654.999	-1000	
0	3655.0078	7800	
10	3655	0	
20	3655	0	
30	3655	0	
40	3655.00014	140.0000001	
50	3655.001367	1367	
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3655.000179	179.0000001	
Nominal-15%	3654.99974	-259.9999998	
Max deviation (Hz)	8880		
Max deviation (PPM)	2.429548564		

Low channel, QPSK, 10MHz, antenna port 2			
Channel frequency (MHz)	3655		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
-30	3654.98145	-18550	
-20	3654.99014	-9860	
-10	3654.9999	-100.0000002	
0	3655	0	
10	3655	0	
20	3655	0	
30	3655.007	7000	
40	3655.0089	8900	
50	3655.01488	14880	
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3655	0	
Nominal-15%	3655.0001	100.0000002	
Max deviation (Hz)	18550		
Max deviation (PPM)	5.075239398		

Low channel, 16QAM, 5MHz, antenna port 2			
Channel frequency (MHz)	3655		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
-30	3654.9998	-199.9999999	
-20	3654.9999	-100.0000002	
-10	3654.9999	-100.0000002	
0	3655	0	
10	3655	0	
20	3655	0	
30	3655	0	
40	3655.0004	399.9999999	
50	3655.00174	1740	
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3655.007	7000	
Nominal-15%	3654.9999	-100.0000002	
Max deviation (Hz)	7000		
Max deviation (PPM)	1.915184679		

Low channel, 16QAM,
7MHz, antenna port 2

Channel frequency
(MHz) 3655

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3654.98136	-18640
-20	3654.9894	-10600
-10	3654.99914	-860.0000001
0	3655	0
10	3655	0
20	3655	0
30	3655	0
40	3655.0094	9400
50	3655.01007	10070

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3655	0
Nominal-15%	3655.001	1000

Max deviation (Hz) 18640
Max deviation (PPM) 5.099863201

Low channel, 16QAM,
10MHz, antenna port 2

Channel frequency
(MHz) 3655

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3654.99014	-9860
-20	3654.9991	-900
-10	3654.9999	-100.0000002
0	3655	0
10	3655	0
20	3655	0
30	3655	0
40	3655.001	1000
50	3655.00294	2940

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3655	0
Nominal-15%	3655	0

Max deviation (Hz) 9860
Max deviation (PPM) 2.697674419

Low channel, 64QAM, 5MHz, antenna port 2		
Channel frequency (MHz)	3655	
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3654.9841	-15900
-20	3654.9897	-10300
-10	3654.99901	-990
0	3654.99999	-10.0000002
10	3655	0
20	3655	0
30	3655.001	1000
40	3655.00183	1830
50	3655.0104	10400
Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3655.0001	100.0000002
Nominal-15%	3654.99991	-90
Max deviation (Hz)	15900	
Max deviation (PPM)	4.350205198	

Low channel, 64QAM, 7MHz, antenna port 2			
Channel frequency (MHz)	3655		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
-30	3654.9894	-10600	
-20	3654.99075	-9250	
-10	3654.9997	-300.0000002	
0	3654.9999	-100.0000002	
10	3655	0	
20	3655	0	
30	3655	0	
40	3655	0	
50	3655.0008	799.9999998	
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3655	0	
Nominal-15%	3655	0	
Max deviation (Hz)	10600		
Max deviation (PPM)	2.900136799		

Low channel, 64QAM, 10MHz, antenna port 2			
Channel frequency (MHz)	3655		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
-30	3654.99801	-1990	
-20	3654.999	-1000	
-10	3654.999	-1000	
0	3654.99901	-990	
10	3655	0	
20	3655	0	
30	3655	0	
40	3655.0079	7900	
50	3655.00974	9740	
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3655.004	4000	
Nominal-15%	3655.009	9000	
Max deviation (Hz)	9740		
Max deviation (PPM)	2.664842681		

Mid channel, QPSK, 5MHz, antenna port 2			
Channel frequency (MHz)	3665		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
	-30	3664.987	-13000
	-20	3664.9894	-10600
	-10	3664.991	-9000
	0	3664.999	-1000
	10	3665	0
	20	3665	0
	30	3665	0
	40	3665.007	7000
	50	3665.0104	10400
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3665	0	
Nominal-15%	3665	0	
Max deviation (Hz)	13000		
Max deviation (PPM)	3.547066849		

Mid channel, QPSK, 7MHz, antenna port 2			
Channel frequency (MHz)	3665		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
	-30	3664.9888	-11200
	-20	3664.989	-11000
	-10	3664.997	-3000
	0	3664.999	-1000
	10	3665	0
	20	3665	0
	30	3665	0
	40	3665.002	2000
	50	3665.002	2000
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3665.007	7000	
Nominal-15%	3665	0	
Max deviation (Hz)	11200		
Max deviation (PPM)	3.055934516		

Mid channel, QPSK, 10MHz, antenna port 2			
Channel frequency (MHz)		3665	
Temperature (deg C)		Measured Frequency (MHz)	Deviation (Hz)
	-30	3664.9998	-199.9999999
	-20	3664.9998	-199.9999999
	-10	3664.9999	-100.0000002
	0	3665	0
	10	3665	0
	20	3665	0
	30	3665.007	7000
	40	3665.009	9000
	50	3665.011	11000
Voltage		Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%		3665.004	4000
Nominal-15%		3665	0
Max deviation (Hz)		11000	
Max deviation (PPM)		3.001364256	

Mid channel, 16QAM, 5MHz, antenna port 2			
Channel frequency (MHz)	3665		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
	-30	3664.989	-11000
	-20	3664.9994	-599.9999998
	-10	3664.9999	-100.0000002
	0	3664.9999	-100.0000002
	10	3665	0
	20	3665	0
	30	3665	0
	40	3665.004	4000
	50	3665.00912	9120
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3665	0	
Nominal-15%	3665	0	
Max deviation (Hz)	11000		
Max deviation (PPM)	3.001364256		

Mid channel, 16QAM, 7MHz, antenna port 2			
Channel frequency (MHz)		3665	
Temperature (deg C)		Measured Frequency (MHz)	Deviation (Hz)
	-30	3664.9864	-13600
	-20	3664.9914	-8600
	-10	3664.997	-3000
	0	3664.999	-1000
	10	3665	0
	20	3665	0
	30	3665	0
	40	3665	0
	50	3665.004	4000
Voltage		Measured Frequency (MHz)	Deviation (Hz)
Nonimal+15%		3665	0
Nominal-15%		3665	0
Max deviation (Hz)		13600	
Max deviation (PPM)		3.710777626	

Mid channel, 16QAM, 10MHz, antenna port 2			
Channel frequency (MHz)	3665		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
	-30	3664.992	-8000
	-20	3664.993	-7000
	-10	3664.993	-7000
	0	3664.999	-1000
	10	3665	0
	20	3665	0
	30	3665	0
	40	3665	0
	50	3665.007	7000
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3665	0	
Nominal-15%	3665	0	
Max deviation (Hz)	8000		
Max deviation (PPM)	2.182810368		

Mid channel, 64QAM, 5MHz, antenna port 2			
Channel frequency (MHz)	3665		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
	-30	3664.999	-1000
	-20	3664.999	-1000
	-10	3664.9997	-300.0000002
	0	3664.9997	-300.0000002
	10	3665	0
	20	3665	0
	30	3665	0
	40	3665.009	9000
	50	3665.0107	10700
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3664.9995	-500.0000001	
Nominal-15%	3665	0	
Max deviation (Hz)	10700		
Max deviation (PPM)	2.919508868		

Mid channel, 64QAM, 7MHz, antenna port 2			
Channel frequency (MHz)		3665	
Temperature (deg C)		Measured Frequency (MHz)	Deviation (Hz)
	-30	3664.9848	-15200
	-20	3664.9871	-12900
	-10	3664.99102	-8980
	0	3664.9999	-100.0000002
	10	3665	0
	20	3665	0
	30	3665	0
	40	3665.003	3000
	50	3665.003	3000
Voltage		Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%		3665	0
Nominal-15%		3665	0
Max deviation (Hz)		15200	
Max deviation (PPM)		4.1473397	

Mid channel, 64QAM, 10MHz, antenna port 2			
Channel frequency (MHz)	3665		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
	-30	3664.998	-2000
	-20	3664.998	-2000
	-10	3664.999	-1000
	0	3664.999	-1000
	10	3665	0
	20	3665	0
	30	3665	0
	40	3665.0099	9900
	50	3665.0105	10500
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3665.0007	700.0000001	
Nominal-15%	3665.0005	500.0000001	
Max deviation (Hz)	10500		
Max deviation (PPM)	2.864938608		

Hi channel, QPSK, 5MHz,
antenna port 2

Channel frequency
(MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.991	-9000
-20	3694.999	-1000
-10	3694.9999	-100.0000002
0	3694.9999	-100.0000002
10	3695	0
20	3695	0
30	3695	0
40	3695.006	6000
50	3695.01	10000

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695	0
Nominal-15%	3695	0

Max deviation (Hz) 10000

Max deviation (PPM) 2.706359946

Hi channel, QPSK, 7MHz,
antenna port 2

Channel frequency
(MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.98002	-19980
-20	3694.9893	-10700
-10	3694.9917	-8300
0	3694.999	-1000
10	3695	0
20	3695	0
30	3695	0
40	3695.0007	700.0000001
50	3695.0096	9600

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3694.9996	-399.9999999
Nominal-15%	3694.9999	-100.0000002

Max deviation (Hz) 19980

Max deviation (PPM) 5.407307172

Hi channel, QPSK, 10MHz, antenna port 2			
Channel frequency (MHz)	3695		
Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)	
-30	3694.9781	-21900	
-20	3694.9844	-15600	
-10	3694.9888	-11200	
0	3694.99	-10000	
10	3694.9999	-100.0000002	
20	3695	0	
30	3695	0	
40	3695.007	7000	
50	3695.0107	10700	
Voltage	Measured Frequency (MHz)	Deviation (Hz)	
Nominal+15%	3695	0	
Nominal-15%	3695	0	
Max deviation (Hz)	21900		
Max deviation (PPM)	5.926928281		

Hi channel, 16QAM,
5MHz, antenna port 2

Channel frequency
(MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.991	-9000
-20	3694.991	-9000
-10	3694.999	-1000
0	3694.9999	-100.0000002
10	3694.9999	-100.0000002
20	3695	0
30	3695	0
40	3695.003	3000
50	3695.0197	19700

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695	0
Nominal-15%	3695	0

Max deviation (Hz) 19700

Max deviation (PPM) 5.331529093

Hi channel, 16QAM,
7MHz, antenna port 2

Channel frequency
(MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.9991	-900
-20	3694.9999	-100.0000002
-10	3694.9999	-100.0000002
0	3694.99999	-10.0000002
10	3695	0
20	3695	0
30	3695.0004	399.9999999
40	3695.0017	1700
50	3695.0095	9500

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695.0006	599.9999998
Nominal-15%	3695.0007	700.0000001

Max deviation (Hz) 9500

Max deviation (PPM) 2.571041949

Hi channel, 16QAM,
10MHz, antenna port 2

Channel frequency
(MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.9882	-11800
-20	3694.9888	-11200
-10	3694.9905	-9500
0	3694.9999	-100.0000002
10	3695	0
20	3695	0
30	3695.0006	599.9999998
40	3695.002	2000
50	3695.0103	10300

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695	0
Nominal-15%	3695	0

Max deviation (Hz) 11800

Max deviation (PPM) 3.193504736

Hi channel, 64QAM,
5MHz, antenna port 2

Channel frequency
(MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.9902	-9800
-20	3694.999	-1000
-10	3694.9999	-100.0000002
0	3694.9999	-100.0000002
10	3695	0
20	3695	0
30	3695.0006	599.9999998
40	3695.0037	3700
50	3695.01936	19360

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695	0
Nominal-15%	3695	0

Max deviation (Hz) 19360

Max deviation (PPM) 5.239512855

Hi channel, 64QAM,
7MHz, antenna port 2

Channel frequency
(MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.9914	-8600
-20	3694.998	-2000
-10	3694.9999	-100.0000002
0	3694.9999	-100.0000002
10	3695	0
20	3695	0
30	3695	0
40	3695.0009	900
50	3695.002	2000

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695	0
Nominal-15%	3695	0

Max deviation (Hz) 8600

Max deviation (PPM) 2.327469553

Hi channel, 64QAM,
10MHz, antenna port 2

Channel frequency
(MHz) 3695

Temperature (deg C)	Measured Frequency (MHz)	Deviation (Hz)
-30	3694.9801	-19900
-20	3694.9833	-16700
-10	3694.9901	-9900
0	3694.999	-1000
10	3694.999	-1000
20	3695	0
30	3695	0
40	3695.0003	300.0000002
50	3695.0012	1200

Voltage	Measured Frequency (MHz)	Deviation (Hz)
Nominal+15%	3695	0
Nominal-15%	3695	0

Max deviation (Hz) 19900

Max deviation (PPM) 5.385656292

Test Setup Photo

