Appendix-A LTE Cat M1 Band 25

Effective (Isotropic) Radiated Power Output Data for M1

Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Power (dBm)	EIRP (dBm)	Limit (dBm)	Verdict
Band25	1.4MHz	QPSK	26047	1	0	Low	21.22	22.81	33	PASS
Band25	1.4MHz	QPSK	26047	1	5	Low	21.03	22.62	33	PASS
Band25	1.4MHz	QPSK	26047	6	0	Low	19.12	20.71	33	PASS
Band25	1.4MHz	QPSK	26365	1	0	Low	21.26	22.85	33	PASS
Band25	1.4MHz	QPSK	26365	1	5	Low	20.96	22.55	33	PASS
Band25	1.4MHz	QPSK	26365	6	0	Low	18.99	20.58	33	PASS
Band25	1.4MHz	QPSK	26683	1	0	High	21.30	22.89	33	PASS
Band25	1.4MHz	QPSK	26683	1	5	High	20.92	22.51	33	PASS
Band25	1.4MHz	QPSK	26683	6	0	High	19.02	20.61	33	PASS
Band25	3MHz	QPSK	26055	1	0	Low	21.28	22.87	33	PASS
Band25	3MHz	QPSK	26055	1	5	Low	20.98	22.57	33	PASS
Band25	3MHz	QPSK	26055	6	0	Low	19.08	20.67	33	PASS
Band25	3MHz	QPSK	26365	1	0	Low	21.19	22.78	33	PASS
Band25	3MHz	QPSK	26365	1	5	Low	20.94	22.53	33	PASS
Band25	3MHz	QPSK	26365	6	0	Low	18.96	20.55	33	PASS
Band25	3MHz	QPSK	26675	1	0	High	21.23	22.82	33	PASS
Band25	3MHz	QPSK	26675	1	5	High	20.89	22.48	33	PASS
Band25	3MHz	QPSK	26675	6	0	High	19.02	20.61	33	PASS
Band25	5MHz	QPSK	26065	1	0	Low	21.39	22.98	33	PASS
Band25	5MHz	QPSK	26065	1	5	Low	21.13	22.72	33	PASS
Band25	5MHz	QPSK	26065	6	0	Low	20.22	21.81	33	PASS
Band25	5MHz	QPSK	26365	1	0	Low	21.28	22.87	33	PASS
Band25	5MHz	QPSK	26365	1	5	Low	21.02	22.61	33	PASS
Band25	5MHz	QPSK	26365	6	0	Low	20.12	21.71	33	PASS
Band25	5MHz	QPSK	26665	1	0	High	21.30	22.89	33	PASS
Band25	5MHz	QPSK	26665	1	5	High	21.04	22.63	33	PASS
Band25	5MHz	QPSK	26665	6	0	High	20.17	21.76	33	PASS
Band25	10MHz	QPSK	26090	1	0	Low	21.29	22.88	33	PASS
Band25	10MHz	QPSK	26090	1	5	Low	21.14	22.73	33	PASS
Band25	10MHz	QPSK	26090	6	0	Low	20.23	21.82	33	PASS
Band25	10MHz	QPSK	26365	1	0	Low	21.25	22.84	33	PASS
Band25	10MHz	QPSK	26365	1	5	Low	21.02	22.61	33	PASS
Band25	10MHz	QPSK	26365	6	0	Low	20.11	21.7	33	PASS
Band25	10MHz	QPSK	26640	1	0	High	21.44	23.03	33	PASS
Band25	10MHz	QPSK	26640	1	5	High	20.99	22.58	33	PASS
Band25	10MHz	QPSK	26640	6	0	High	20.08	21.67	33	PASS
Band25	15MHz	QPSK	26115	1	0	Low	21.16	22.75	33	PASS

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.

Band25	15MHz	QPSK	26115	1	5	Low	21.00	22.59	33	PASS
Band25	15MHz	QPSK	26115	6	0	Low	20.10	21.69	33	PASS
Band25	15MHz	QPSK	26365	1	0	Low	21.14	22.73	33	PASS
Band25	15MHz	QPSK	26365	1	5	Low	21.02	22.61	33	PASS
Band25	15MHz	QPSK	26365	6	0	Low	20.12	21.71	33	PASS
Band25	15MHz	QPSK	26615	1	0	High	21.28	22.87	33	PASS
Band25	15MHz	QPSK	26615	1	5	High	21.09	22.68	33	PASS
Band25	15MHz	QPSK	26615	6	0	High	21.11	22.7	33	PASS
Band25	20MHz	QPSK	26140	1	0	Low	21.20	22.79	33	PASS
Band25	20MHz	QPSK	26140	1	5	Low	20.97	22.56	33	PASS
Band25	20MHz	QPSK	26140	6	0	Low	21.20	22.79	33	PASS
Band25	20MHz	QPSK	26365	1	0	Low	21.12	22.71	33	PASS
Band25	20MHz	QPSK	26365	1	5	Low	20.97	22.56	33	PASS
Band25	20MHz	QPSK	26365	6	0	Low	21.12	22.71	33	PASS
Band25	20MHz	QPSK	26590	1	0	High	21.45	23.04	33	PASS
Band25	20MHz	QPSK	26590	1	5	High	21.09	22.68	33	PASS
Band25	20MHz	QPSK	26590	6	0	High	21.28	22.87	33	PASS
Band25	1.4MHz	16QAM	26047	1	0	Low	20.41	22	33	PASS
Band25	1.4MHz	16QAM	26047	1	5	Low	19.94	21.53	33	PASS
Band25	1.4MHz	16QAM	26047	5	0	Low	19.15	20.74	33	PASS
Band25	1.4MHz	16QAM	26365	1	0	Low	20.30	21.89	33	PASS
Band25	1.4MHz	16QAM	26365	1	5	Low	20.13	21.72	33	PASS
Band25	1.4MHz	16QAM	26365	5	0	Low	19.44	21.03	33	PASS
Band25	1.4MHz	16QAM	26683	1	0	High	20.27	21.86	33	PASS
Band25	1.4MHz	16QAM	26683	1	5	High	20.10	21.69	33	PASS
Band25	1.4MHz	16QAM	26683	5	0	High	19.42	21.01	33	PASS
Band25	3MHz	16QAM	26055	1	0	Low	20.54	22.13	33	PASS
Band25	3MHz	16QAM	26055	1	5	Low	20.30	21.89	33	PASS
Band25	3MHz	16QAM	26055	5	0	Low	19.59	21.18	33	PASS
Band25	3MHz	16QAM	26365	1	0	Low	20.25	21.84	33	PASS
Band25	3MHz	16QAM	26365	1	5	Low	20.10	21.69	33	PASS
Band25	3MHz	16QAM	26365	5	0	Low	19.19	20.78	33	PASS
Band25	3MHz	16QAM	26675	1	0	High	20.12	21.71	33	PASS
Band25	3MHz	16QAM	26675	1	5	High	20.05	21.64	33	PASS
Band25	3MHz	16QAM	26675	5	0	High	19.37	20.96	33	PASS
Band25	5MHz	16QAM	26065	1	0	Low	21.24	22.83	33	PASS
Band25	5MHz	16QAM	26065	1	5	Low	20.98	22.57	33	PASS
Band25	5MHz	16QAM	26065	5	0	Low	20.05	21.64	33	PASS
Band25	5MHz	16QAM	26365	1	0	Low	21.28	22.87	33	PASS
Band25	5MHz	16QAM	26365	1	5	Low	20.93	22.52	33	PASS
Band25	5MHz	16QAM	26365	5	0	Low	19.94	21.53	33	PASS
Band25	5MHz	16QAM	26665	1	0	High	21.21	22.8	33	PASS
Band25	5MHz	16QAM	26665	1	5	High	20.96	22.55	33	PASS
Band25	5MHz	16QAM	26665	5	0	High	20.04	21.63	33	PASS
Band25	10MHz	16QAM	26090	1	0	Low	21.22	22.81	33	PASS

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.

Band25	10MHz	16QAM	26090	1	5	Low	20.97	22.56	33	PASS
Band25	10MHz	16QAM	26090	5	0	Low	21.00	22.59	33	PASS
Band25	10MHz	16QAM	26365	1	0	Low	21.35	22.94	33	PASS
Band25	10MHz	16QAM	26365	1	5	Low	20.92	22.51	33	PASS
Band25	10MHz	16QAM	26365	5	0	Low	20.97	22.56	33	PASS
Band25	10MHz	16QAM	26640	1	0	High	21.40	22.99	33	PASS
Band25	10MHz	16QAM	26640	1	5	High	20.99	22.58	33	PASS
Band25	10MHz	16QAM	26640	5	0	High	21.04	22.63	33	PASS
Band25	15MHz	16QAM	26115	1	0	Low	21.14	22.73	33	PASS
Band25	15MHz	16QAM	26115	1	5	Low	20.94	22.53	33	PASS
Band25	15MHz	16QAM	26115	5	0	Low	21.06	22.65	33	PASS
Band25	15MHz	16QAM	26365	1	0	Low	21.40	22.99	33	PASS
Band25	15MHz	16QAM	26365	1	5	Low	20.94	22.53	33	PASS
Band25	15MHz	16QAM	26365	5	0	Low	21.04	22.63	33	PASS
Band25	15MHz	16QAM	26615	1	0	High	21.34	22.93	33	PASS
Band25	15MHz	16QAM	26615	1	5	High	20.93	22.52	33	PASS
Band25	15MHz	16QAM	26615	5	0	High	21.00	22.59	33	PASS
Band25	20MHz	16QAM	26140	1	0	Low	21.12	22.71	33	PASS
Band25	20MHz	16QAM	26140	1	5	Low	20.87	22.46	33	PASS
Band25	20MHz	16QAM	26140	5	0	Low	21.02	22.61	33	PASS
Band25	20MHz	16QAM	26365	1	0	Low	21.38	22.97	33	PASS
Band25	20MHz	16QAM	26365	1	5	Low	20.97	22.56	33	PASS
Band25	20MHz	16QAM	26365	5	0	Low	21.01	22.6	33	PASS
Band25	20MHz	16QAM	26590	1	0	High	21.48	23.07	33	PASS
Band25	20MHz	16QAM	26590	1	5	High	21.02	22.61	33	PASS
Band25	20MHz	16QAM	26590	5	0	High	21.08	22.67	33	PASS

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.

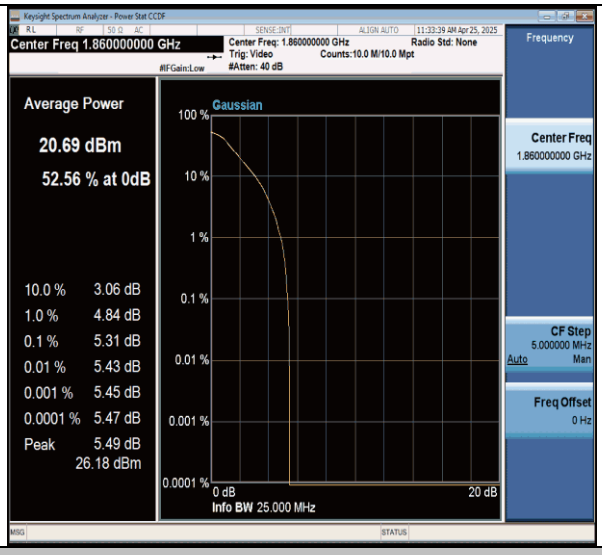
Peak-to-Average Ratio(CCDF) for M1

Test Result

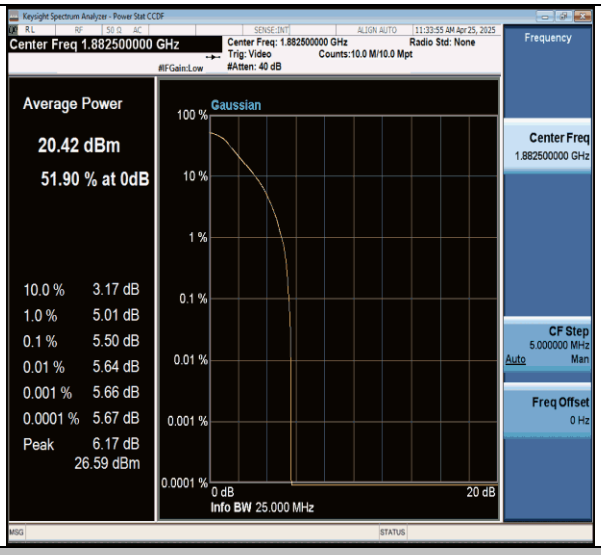
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result(dB)	Limit(dB)	Verdict
Band25	20MHz	QPSK	26140	6	0	Low	5.31	<=13	PASS
Band25	20MHz	QPSK	26365	6	0	Low	5.50	<=13	PASS
Band25	20MHz	QPSK	26590	6	0	High	5.16	<=13	PASS
Band25	20MHz	16QAM	26140	5	0	Low	5.56	<=13	PASS
Band25	20MHz	16QAM	26365	5	0	Low	5.60	<=13	PASS
Band25	20MHz	16QAM	26590	5	0	High	5.59	<=13	PASS

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.

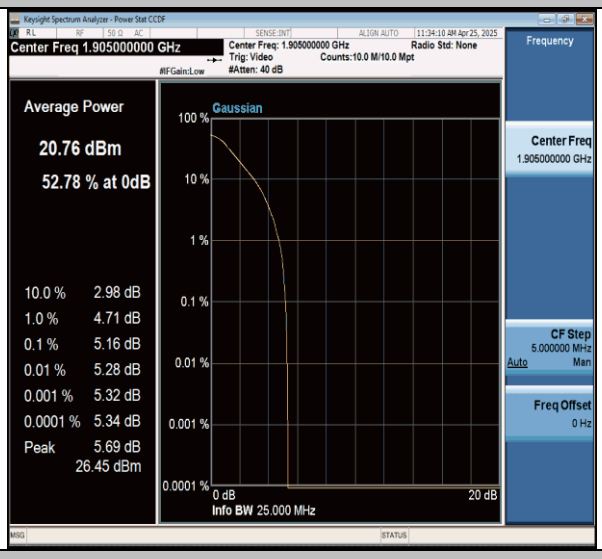
Test Graphs



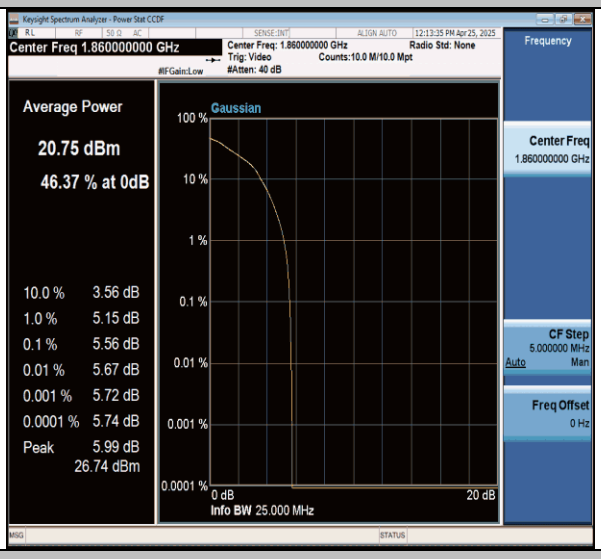
Band25-20MHz-QPSK-26140-PASS



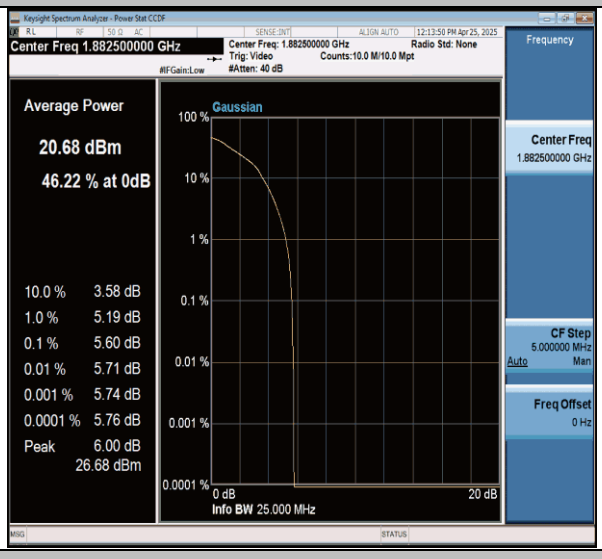
Band25-20MHz-QPSK-26365-PASS



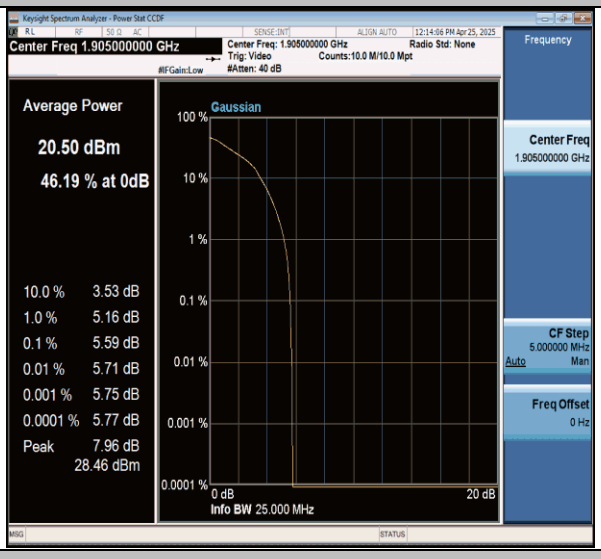
Band25-20MHz-QPSK-26590-PASS



Band25-20MHz-16QAM-26140-PASS



Band25-20MHz-16QAM-26365-PASS



Band25-20MHz-16QAM-26590-PASS

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.

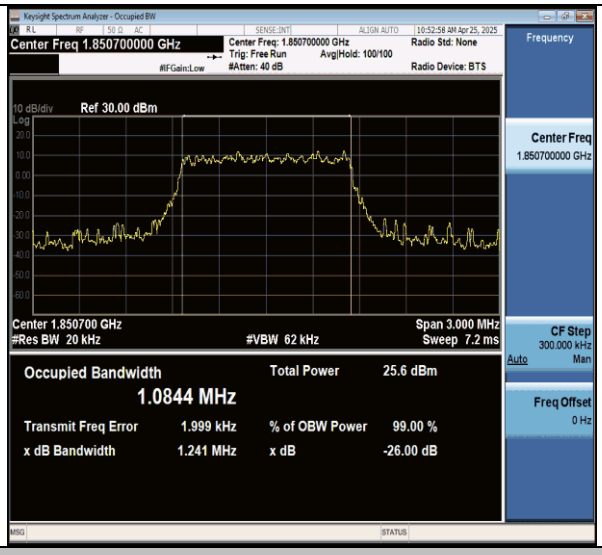
26dB Bandwidth and Occupied Bandwidth for M1

Test Result

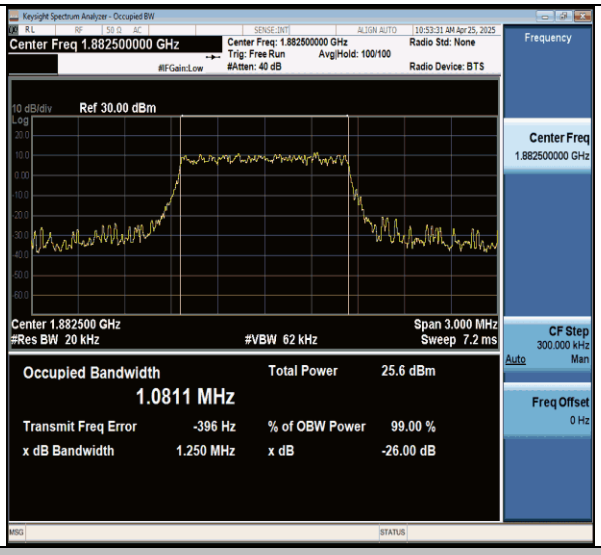
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band25	1.4MHz	QPSK	26047	6	0	Low	1.0844	1.241	PASS
Band25	1.4MHz	QPSK	26365	6	0	Low	1.0811	1.250	PASS
Band25	1.4MHz	QPSK	26683	6	0	High	1.0829	1.258	PASS
Band25	3MHz	QPSK	26055	6	0	Low	1.0926	1.228	PASS
Band25	3MHz	QPSK	26365	6	0	Low	1.0880	1.250	PASS
Band25	3MHz	QPSK	26675	6	0	High	1.0878	1.267	PASS
Band25	5MHz	QPSK	26065	6	0	Low	1.0869	1.235	PASS
Band25	5MHz	QPSK	26365	6	0	Low	1.0872	1.278	PASS
Band25	5MHz	QPSK	26665	6	0	High	1.0849	1.220	PASS
Band25	10MHz	QPSK	26090	6	0	Low	1.0913	1.256	PASS
Band25	10MHz	QPSK	26365	6	0	Low	1.0937	1.280	PASS
Band25	10MHz	QPSK	26640	6	0	High	1.0971	1.245	PASS
Band25	15MHz	QPSK	26115	6	0	Low	1.1040	1.265	PASS
Band25	15MHz	QPSK	26365	6	0	Low	1.1034	1.256	PASS
Band25	15MHz	QPSK	26615	6	0	High	1.1023	1.284	PASS
Band25	20MHz	QPSK	26140	6	0	Low	1.1077	1.269	PASS
Band25	20MHz	QPSK	26365	6	0	Low	1.1074	1.308	PASS
Band25	20MHz	QPSK	26590	6	0	High	1.1126	1.270	PASS
Band25	1.4MHz	16QAM	26047	5	0	Low	0.90995	1.074	PASS
Band25	1.4MHz	16QAM	26365	5	0	Low	0.91468	1.064	PASS
Band25	1.4MHz	16QAM	26683	5	0	High	0.90836	1.087	PASS
Band25	3MHz	16QAM	26055	5	0	Low	0.91119	1.090	PASS
Band25	3MHz	16QAM	26365	5	0	Low	0.91693	1.107	PASS
Band25	3MHz	16QAM	26675	5	0	High	0.91577	1.090	PASS
Band25	5MHz	16QAM	26065	5	0	Low	0.92092	1.105	PASS
Band25	5MHz	16QAM	26365	5	0	Low	0.91974	1.100	PASS
Band25	5MHz	16QAM	26665	5	0	High	0.92554	1.082	PASS
Band25	10MHz	16QAM	26090	5	0	Low	0.92737	1.124	PASS
Band25	10MHz	16QAM	26365	5	0	Low	0.92874	1.103	PASS
Band25	10MHz	16QAM	26640	5	0	High	0.93068	1.103	PASS
Band25	15MHz	16QAM	26115	5	0	Low	0.92514	1.118	PASS
Band25	15MHz	16QAM	26365	5	0	Low	0.92680	1.144	PASS
Band25	15MHz	16QAM	26615	5	0	High	0.92585	1.131	PASS
Band25	20MHz	16QAM	26140	5	0	Low	0.94934	1.152	PASS
Band25	20MHz	16QAM	26365	5	0	Low	0.94205	1.147	PASS
Band25	20MHz	16QAM	26590	5	0	High	0.95022	1.150	PASS

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.

Test Graphs

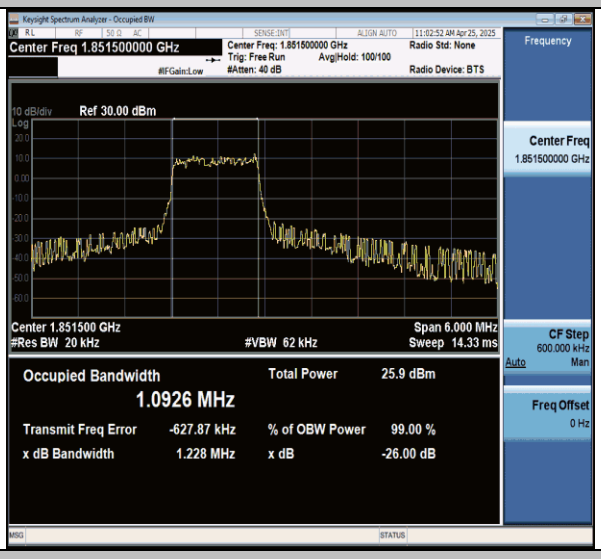


Band25-1.4MHz-QPSK-26047-PASS



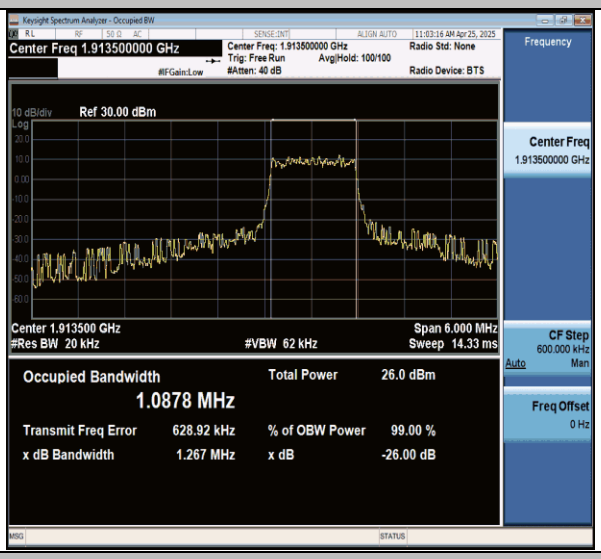
Band25-1.4MHz-QPSK-26365-PASS

Band25-1.4MHz-QPSK-26683-PASS



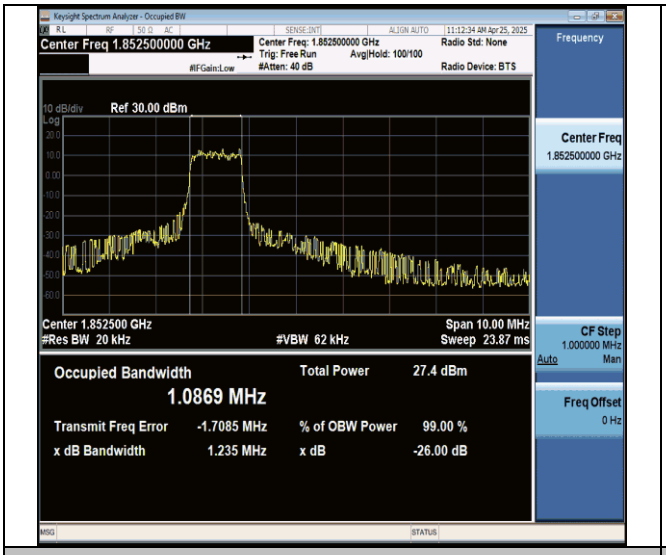
Band25-3MHz-QPSK-26055-PASS

Band25-3MHz-QPSK-26365-PASS

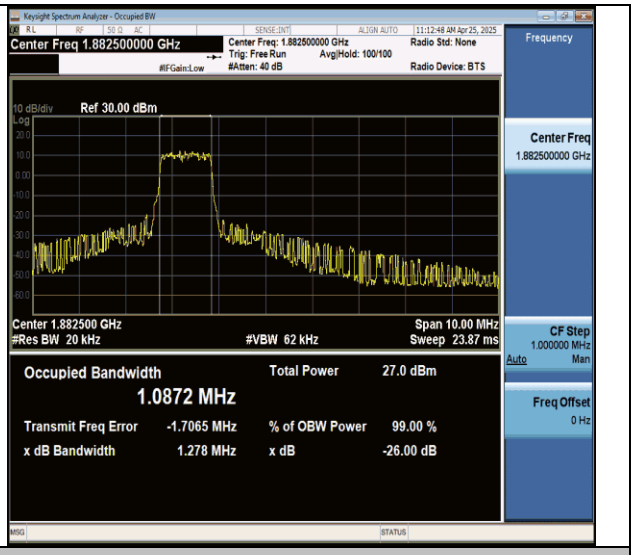


Band25-3MHz-QPSK-26675-PASS

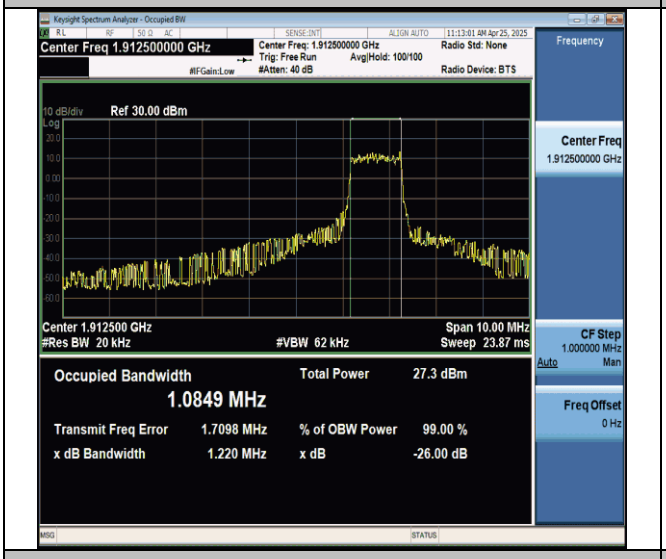
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.



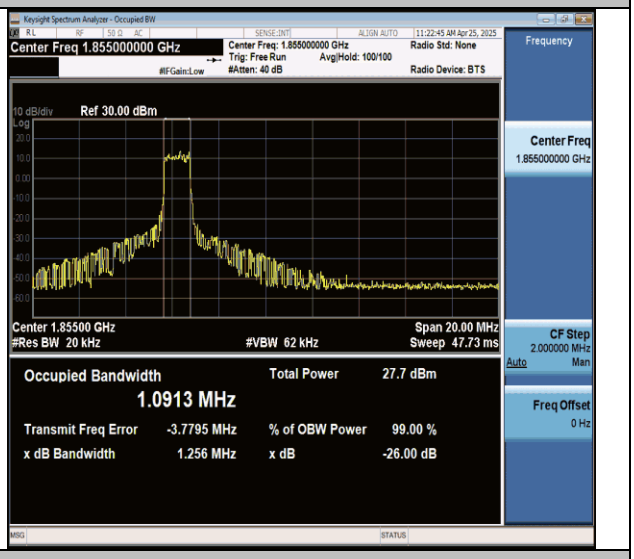
Band25-5MHz-QPSK-26065-PASS



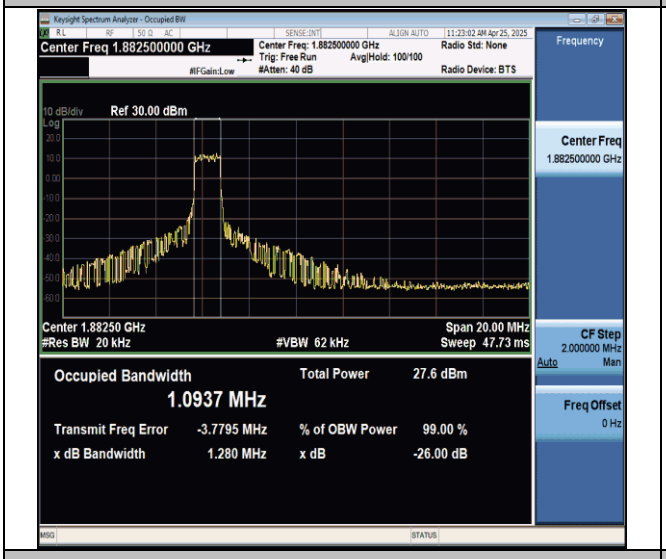
Band25-5MHz-QPSK-26365-PASS



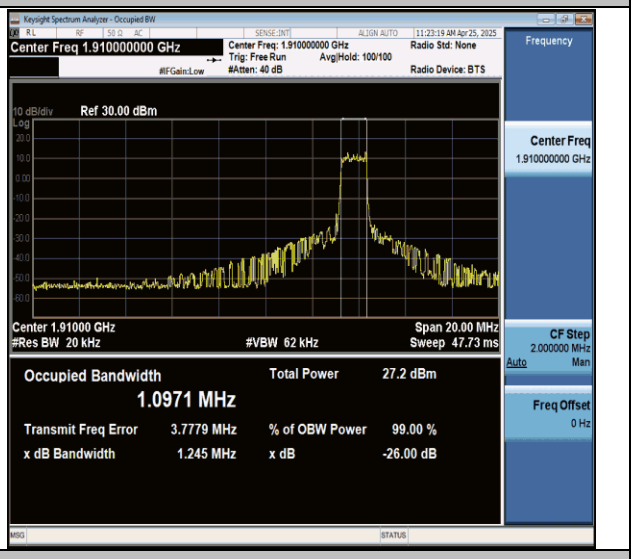
Band25-5MHz-QPSK-26665-PASS



Band25-10MHz-QPSK-26090-PASS

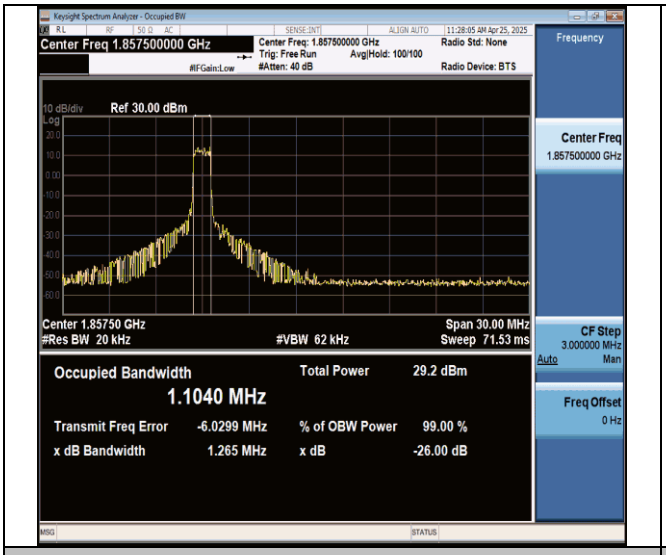


Band25-10MHz-QPSK-26365-PASS

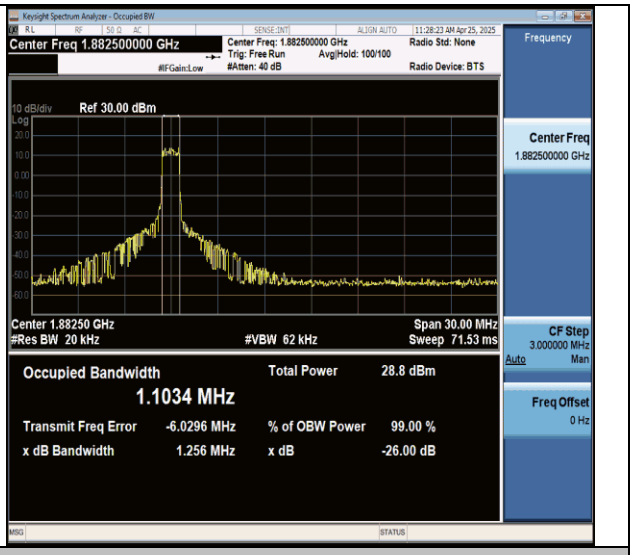


Band25-10MHz-QPSK-26640-PASS

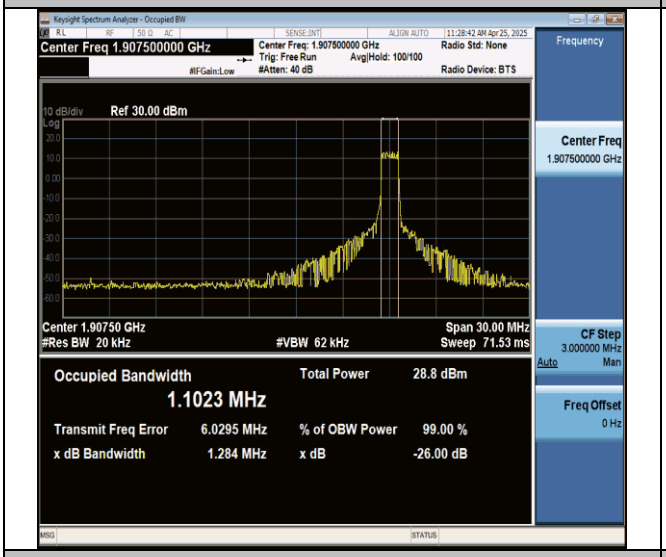
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.



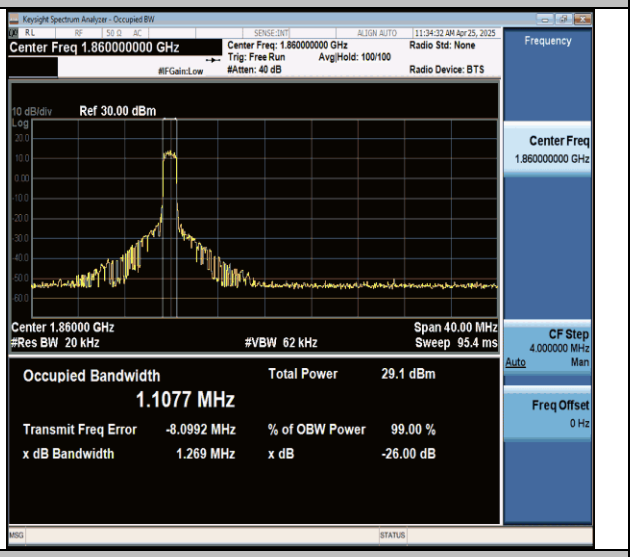
Band25-15MHz-QPSK-26115-PASS



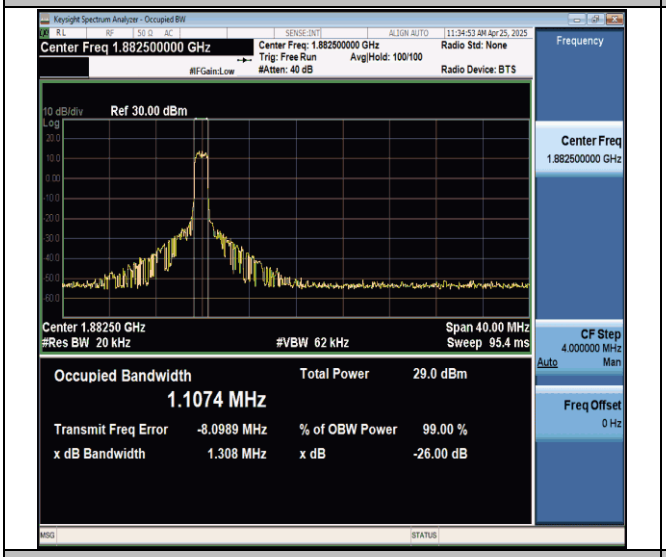
Band25-15MHz-QPSK-26365-PASS



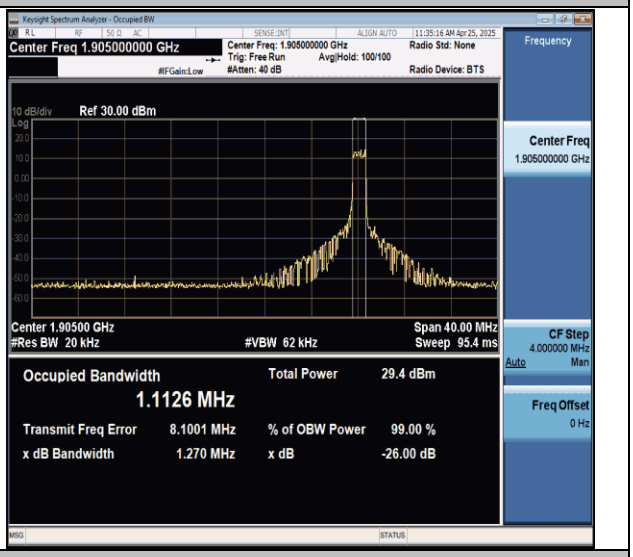
Band25-15MHz-QPSK-26615-PASS



Band25-20MHz-QPSK-26140-PASS



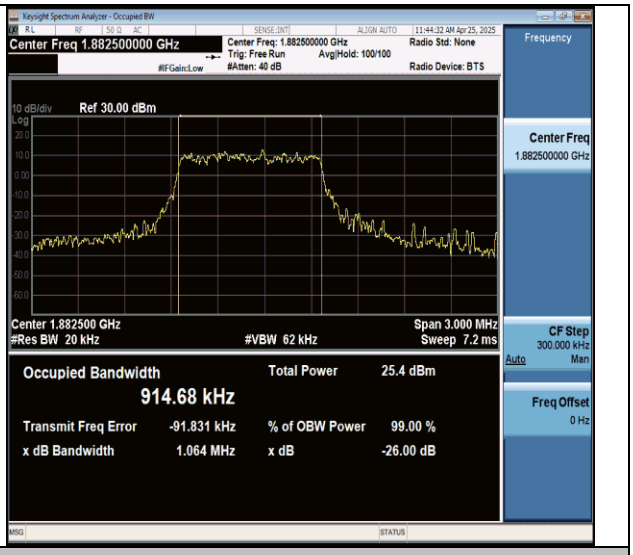
Band25-20MHz-QPSK-26365-PASS



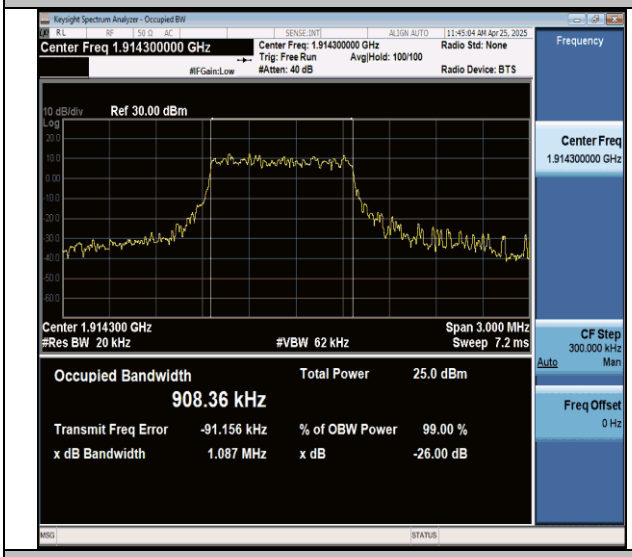
Band25-20MHz-QPSK-26590-PASS

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.

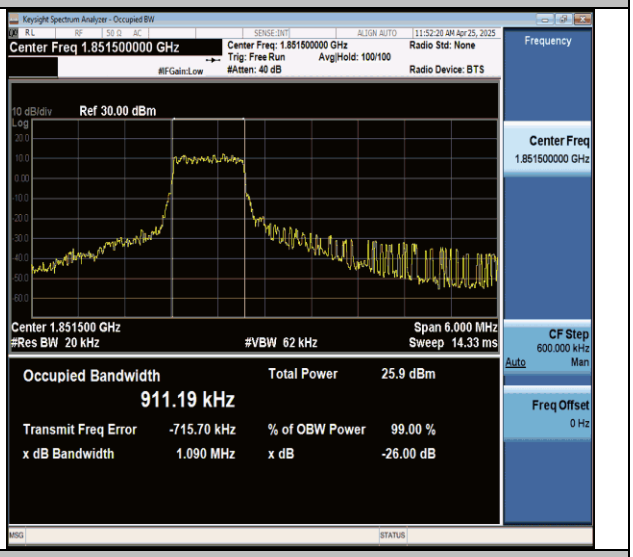
Band25-1.4MHz-16QAM-26047-PASS



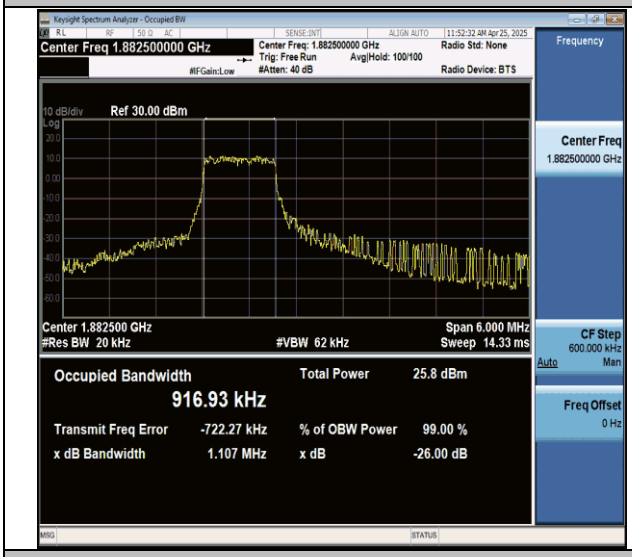
Band25-1.4MHz-16QAM-26365-PASS



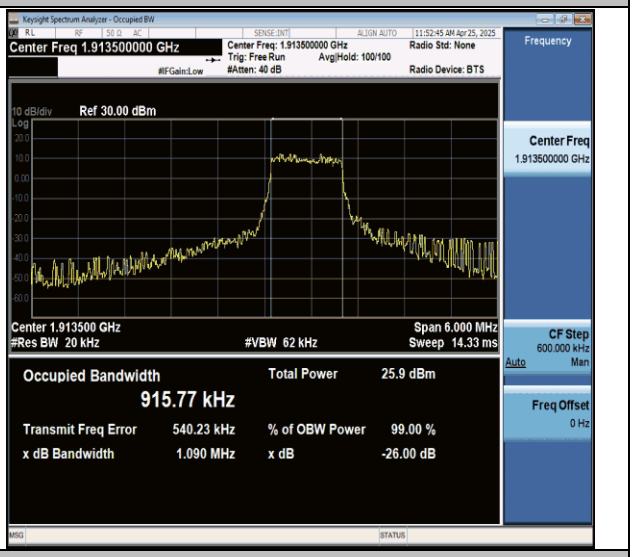
Band25-1.4MHz-16QAM-26683-PASS



Band25-3MHz-16QAM-26055-PASS

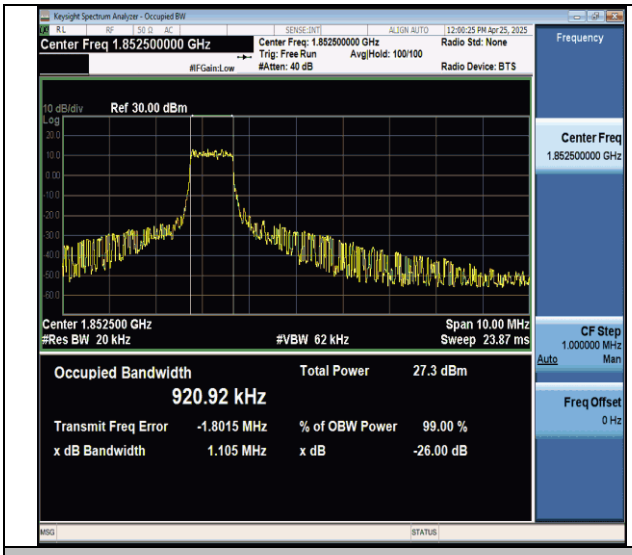


Band25-3MHz-16QAM-26365-PASS

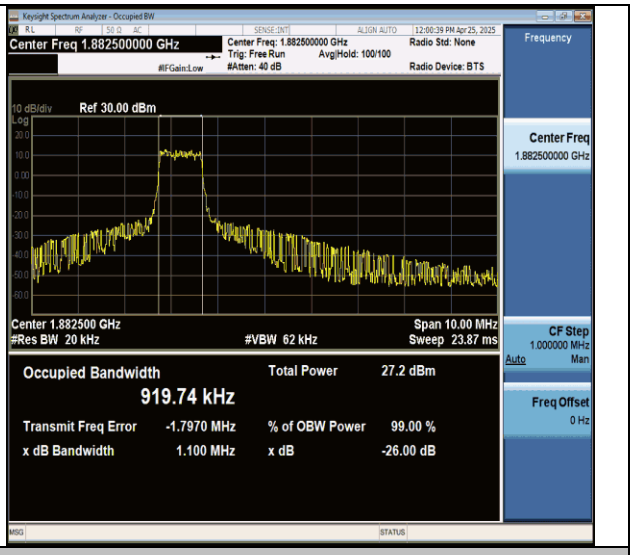


Band25-3MHz-16QAM-26675-PASS

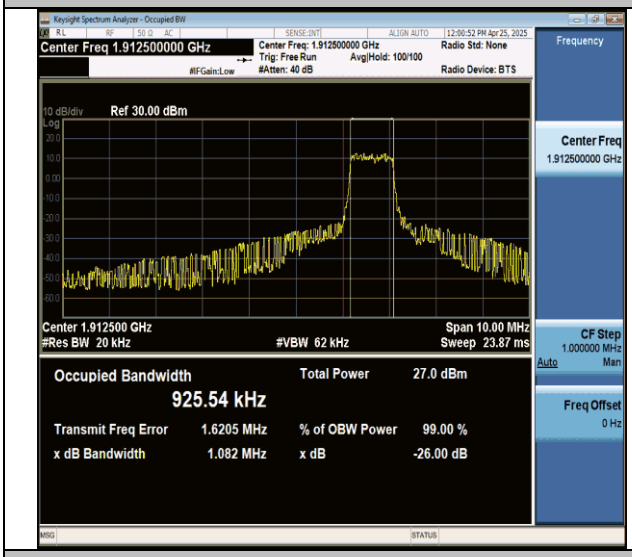
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.



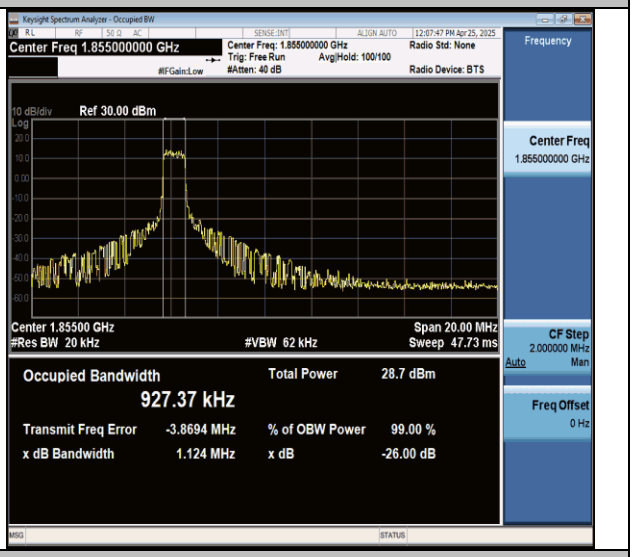
Band25-5MHz-16QAM-26065-PASS



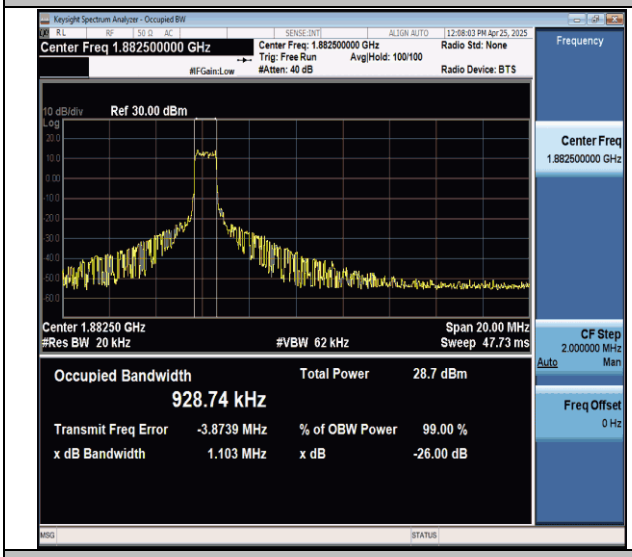
Band25-5MHz-16QAM-26365-PASS



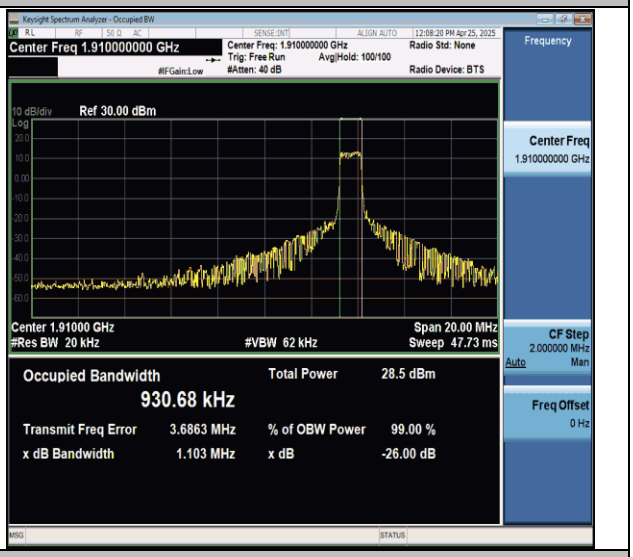
Band25-5MHz-16QAM-26665-PASS



Band25-10MHz-16QAM-26090-PASS

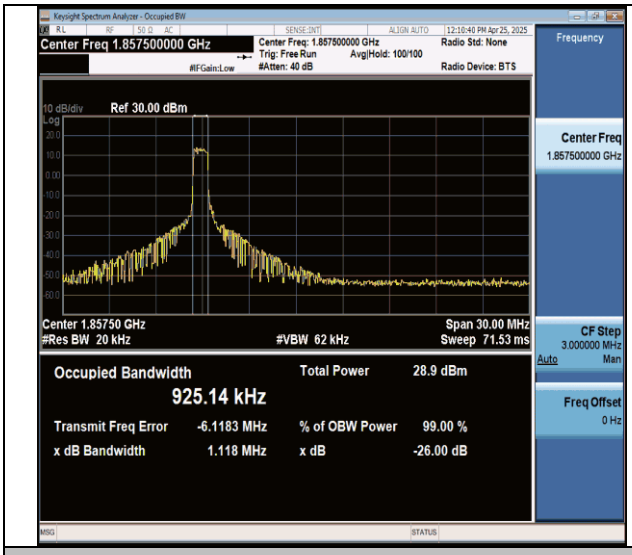


Band25-10MHz-16QAM-26365-PASS

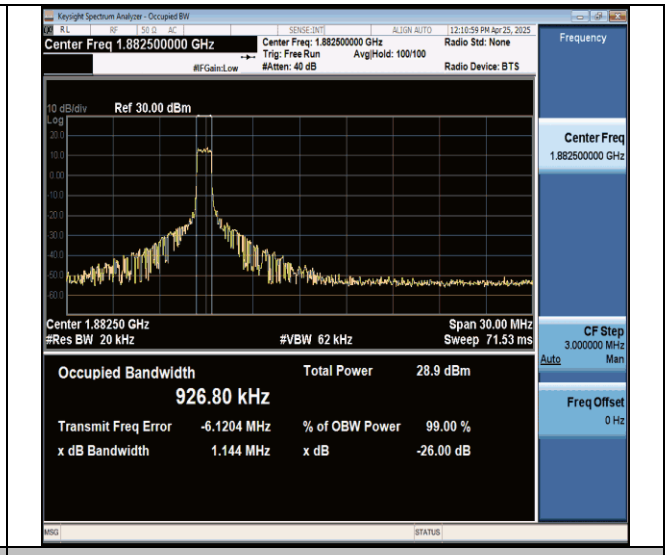


Band25-10MHz-16QAM-26640-PASS

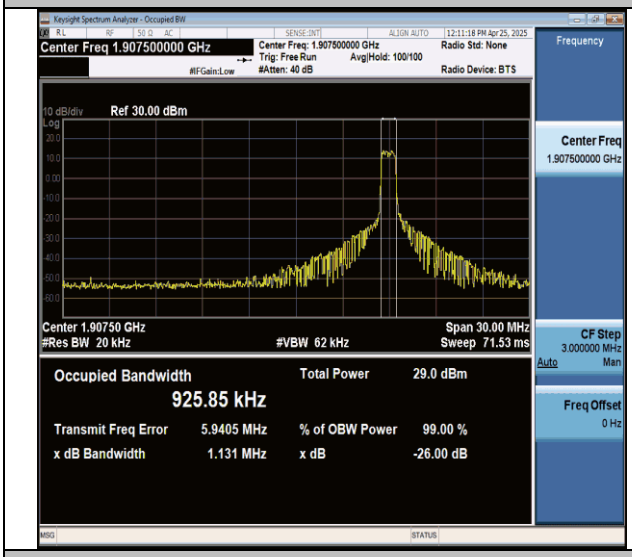
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.



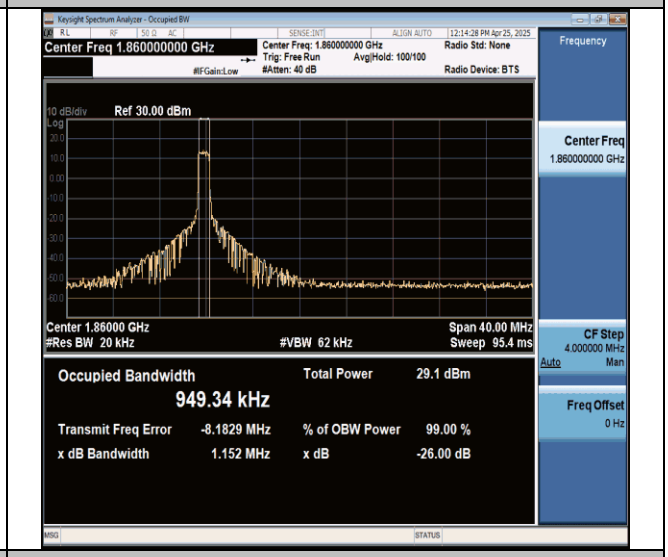
Band25-15MHz-16QAM-26115-PASS



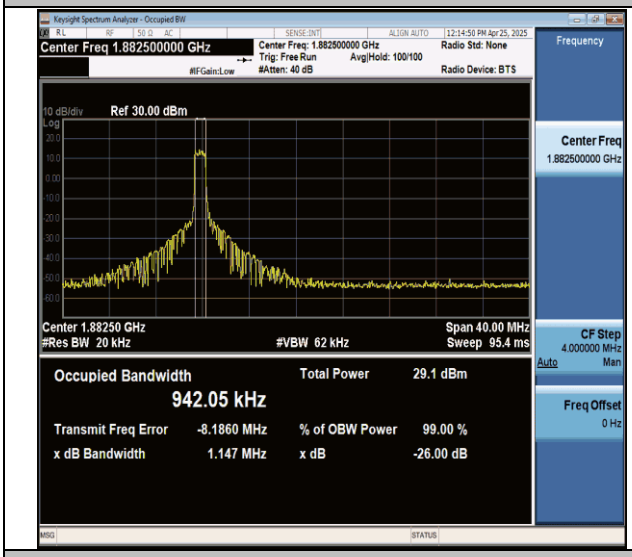
Band25-15MHz-16QAM-26365-PASS



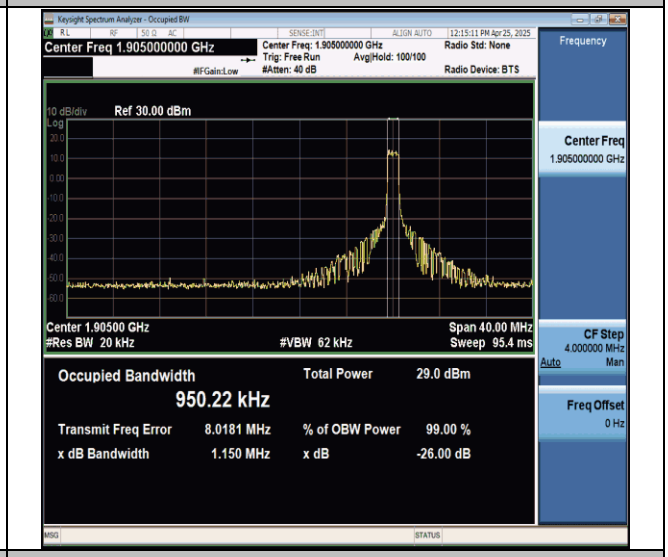
Band25-15MHz-16QAM-26615-PASS



Band25-20MHz-16QAM-26140-PASS



Band25-20MHz-16QAM-26365-PASS

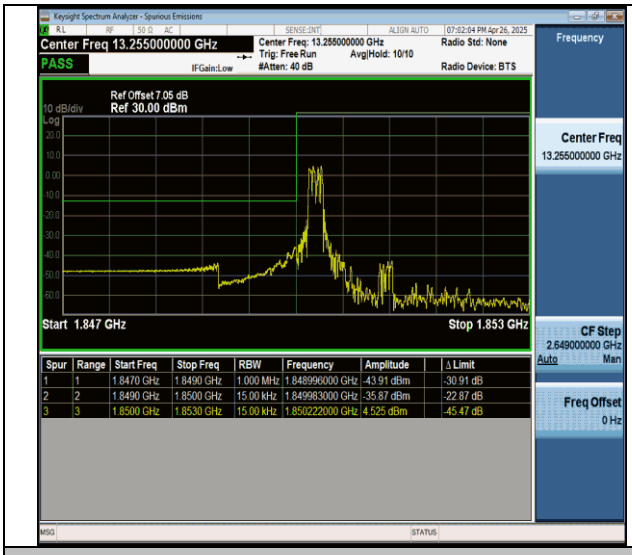


Band25-20MHz-16QAM-26590-PASS

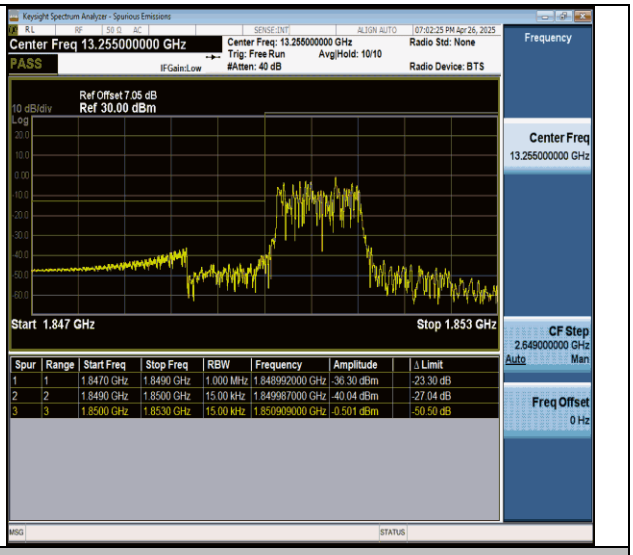
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.

Band Edge for M1

Test Graphs



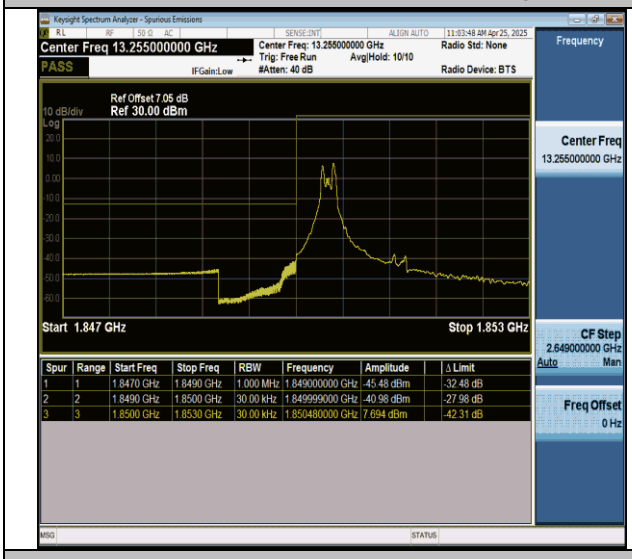
Band25_1.4MHz_QPSK_26047_1_Low



Band25_1.4MHz_QPSK_26047_6_Low

Band25_1.4MHz_QPSK_26683_1_High

Band25_1.4MHz_QPSK_26683_5_High

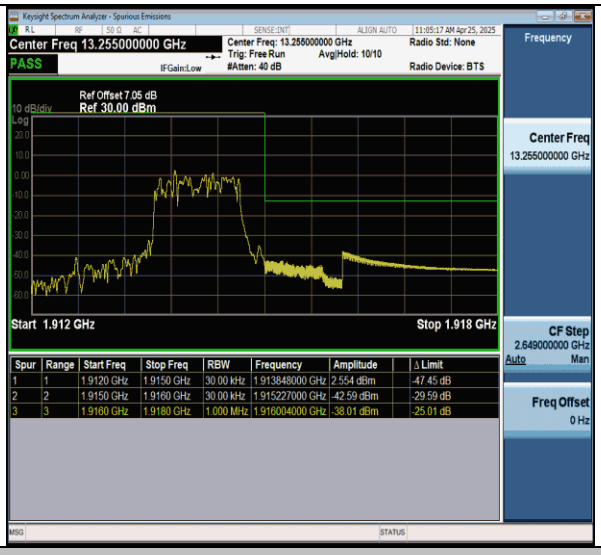


Band25_3MHz_QPSK_26055_1_Low

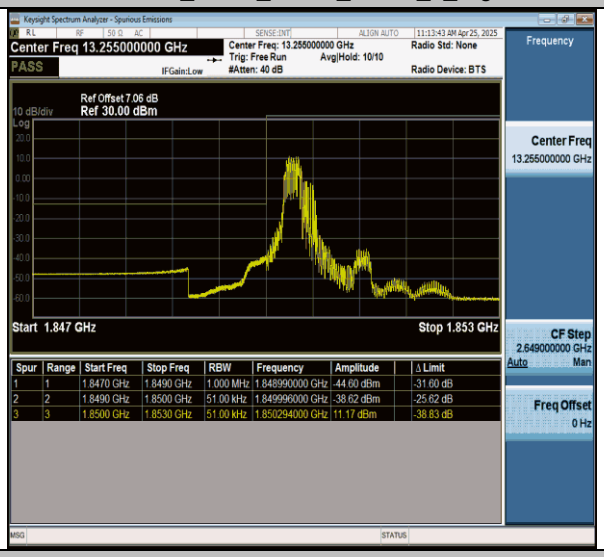
Band25_3MHz_QPSK_26055_6_Low

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.

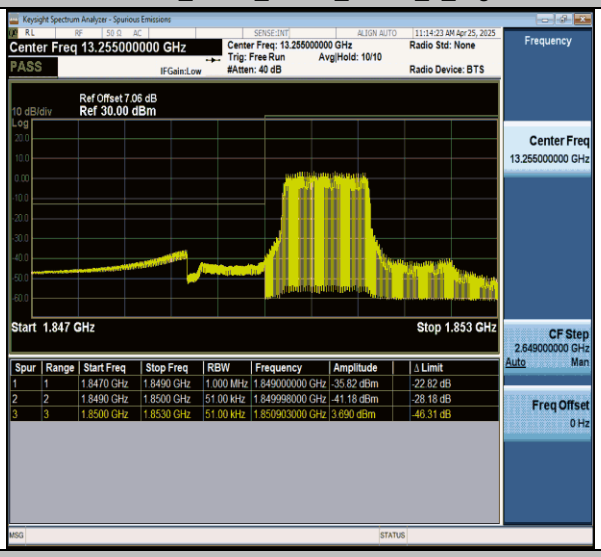
Band25_3MHz_QPSK_26675_1_High



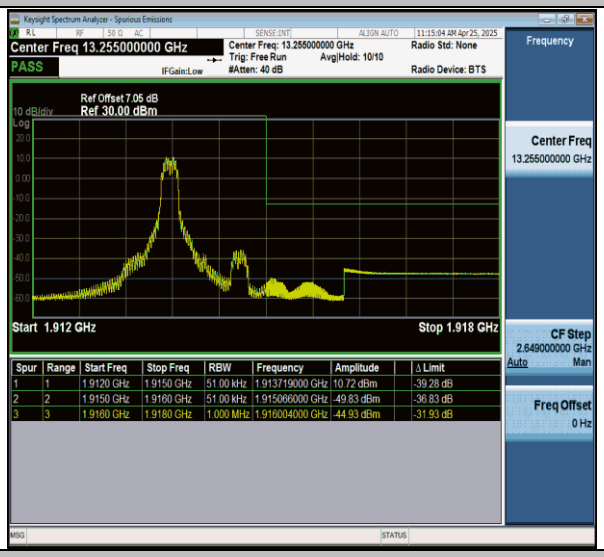
Band25_3MHz_QPSK_26675_6_High



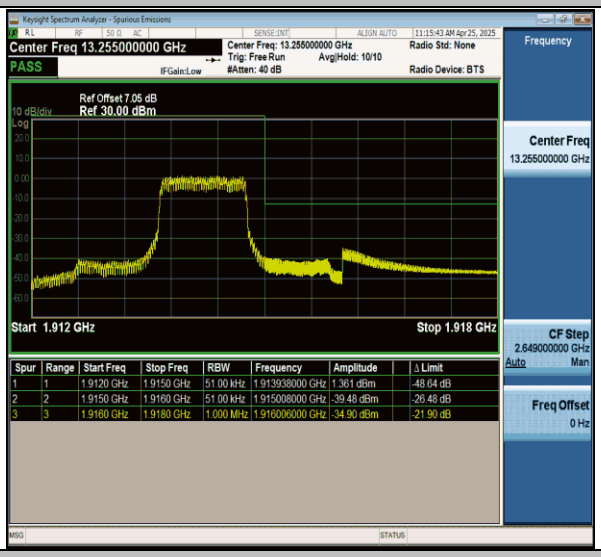
Band25_5MHz_QPSK_26065_1_Low



Band25_5MHz_QPSK_26065_6_Low

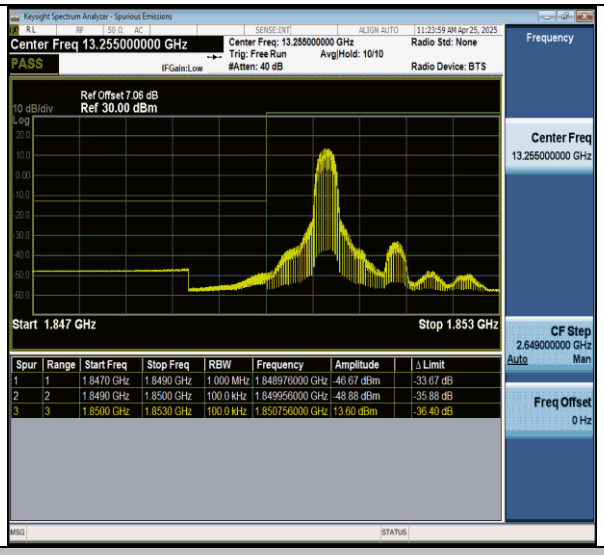


Band25_5MHz_QPSK_26665_1_High

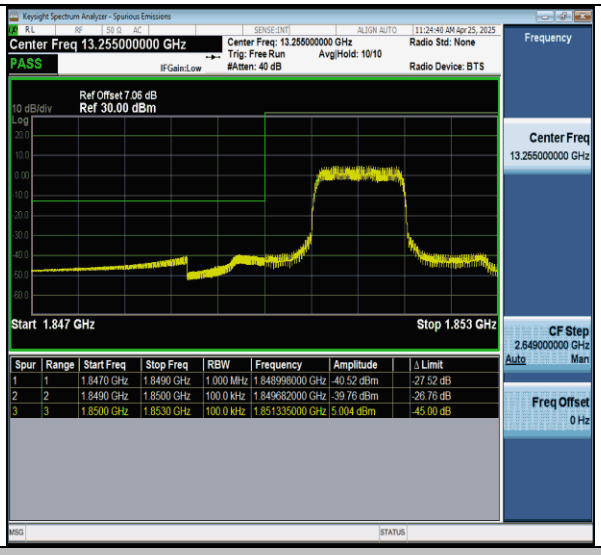


Band25_5MHz_QPSK_26665_6_High

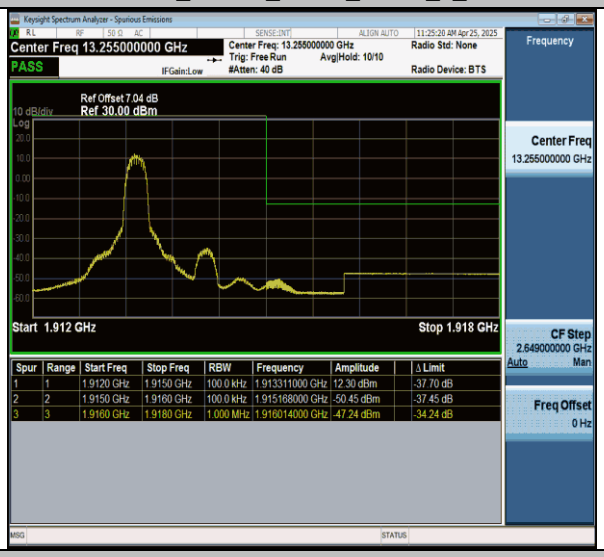
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.



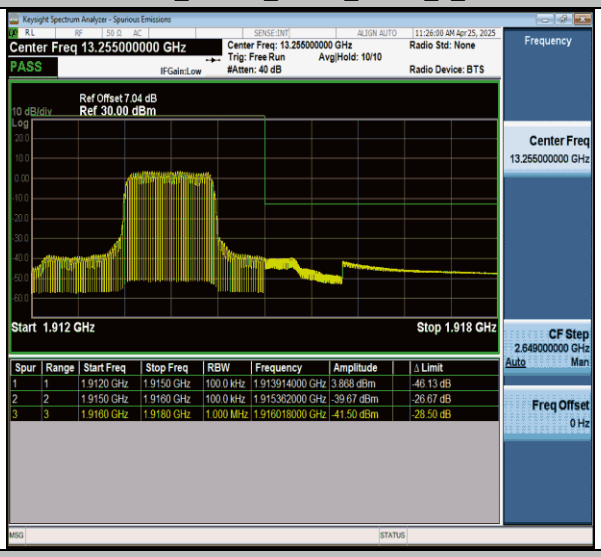
Band25_10MHz_QPSK_26090_1_Low



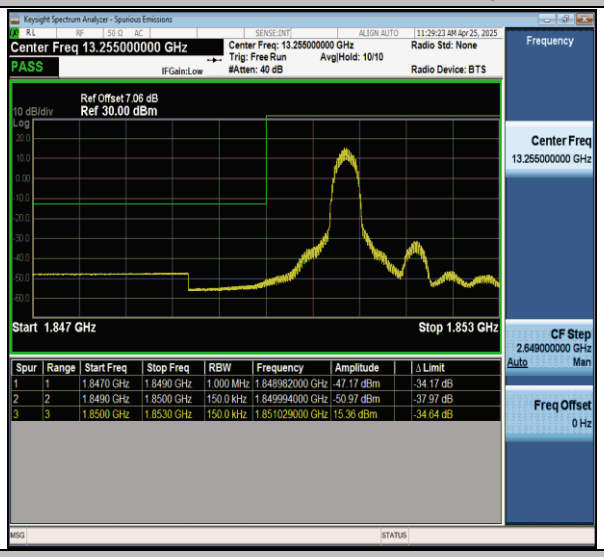
Band25_10MHz_QPSK_26090_6_Low



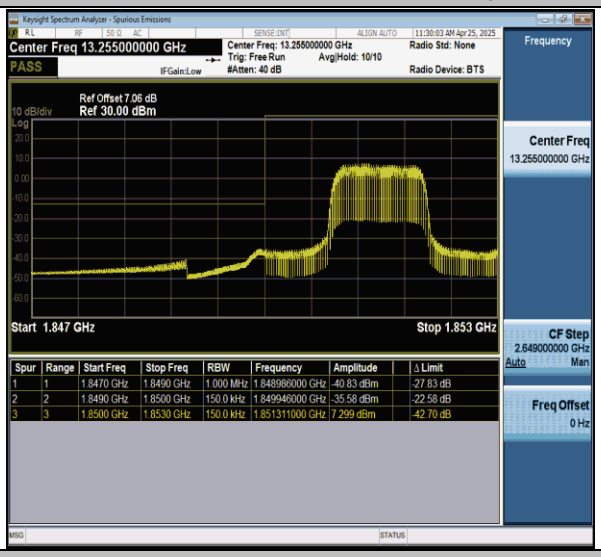
Band25_10MHz_QPSK_26640_1_High



Band25_10MHz_QPSK_26640_6_High

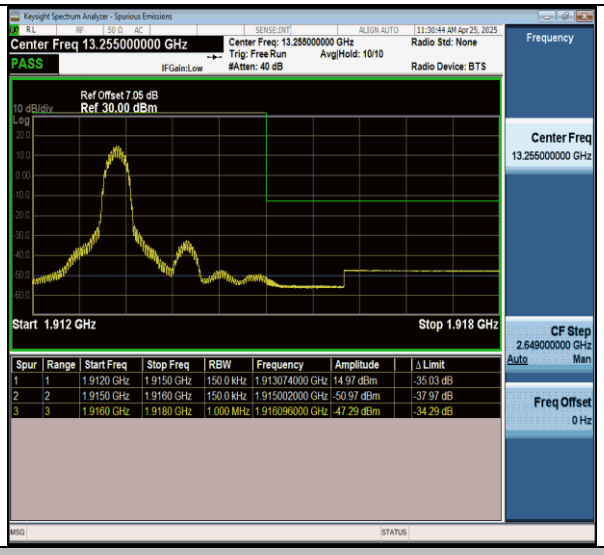


Band25_15MHz_QPSK_26115_1_Low

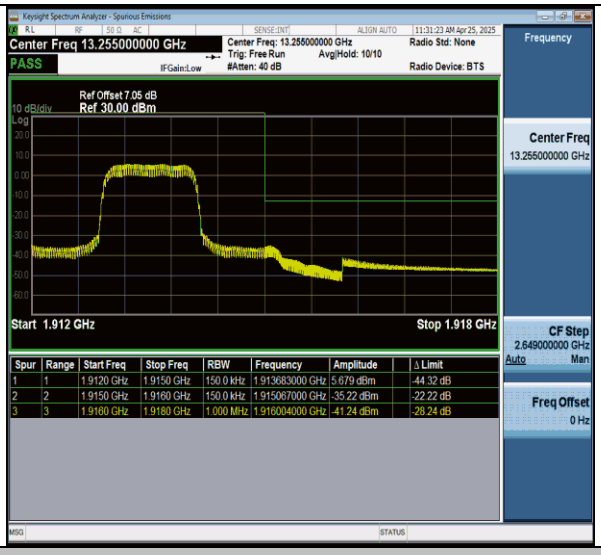


Band25_15MHz_QPSK_26115_6_Low

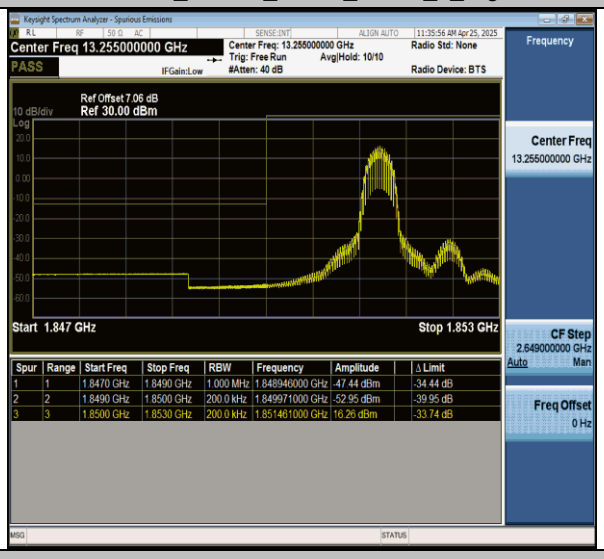
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.



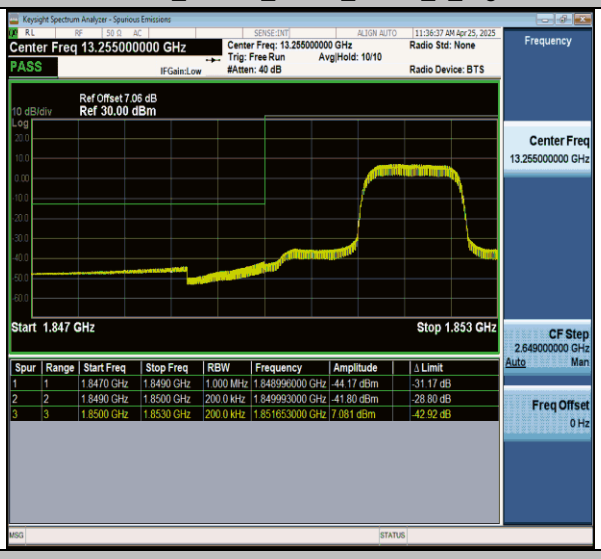
Band25_15MHz_QPSK_26615_1_High



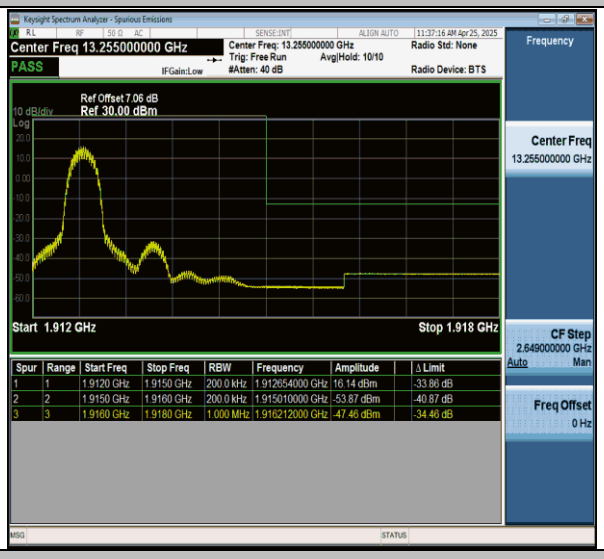
Band25_15MHz_QPSK_26615_6_High



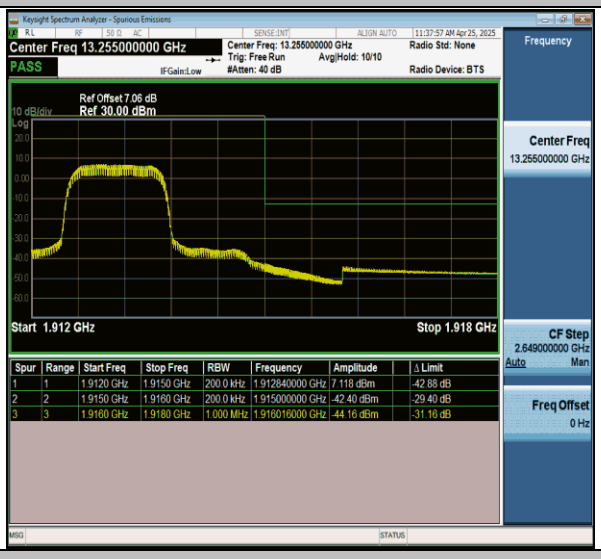
Band25_20MHz_QPSK_26140_1_Low



Band25_20MHz_QPSK_26140_6_Low



Band25_20MHz_QPSK_26590_1_High

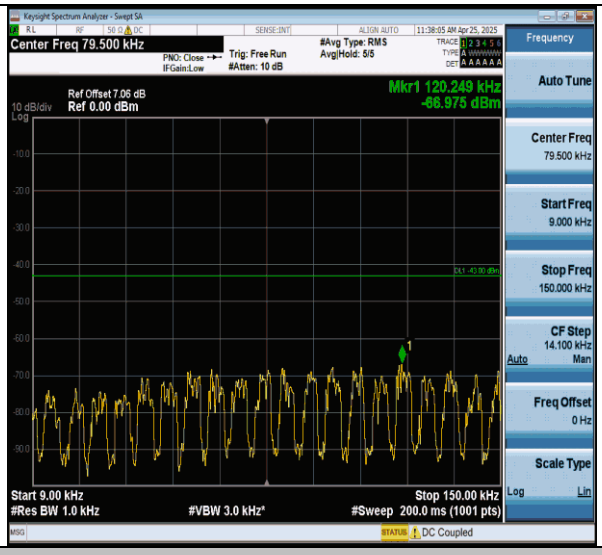


Band25_20MHz_QPSK_26590_6_High

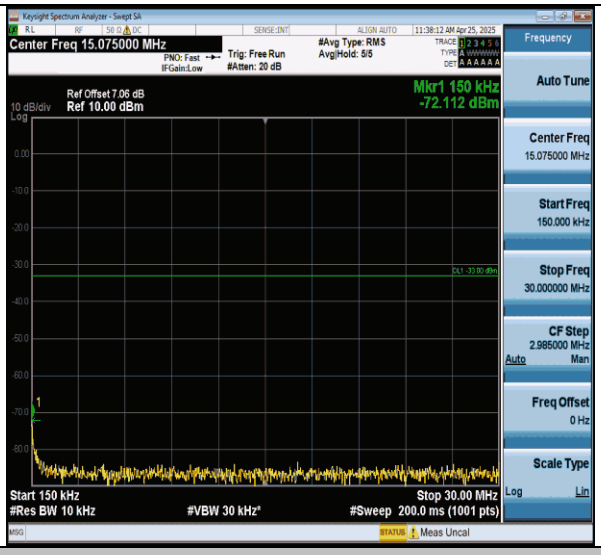
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.

Conducted Spurious Emission for M1

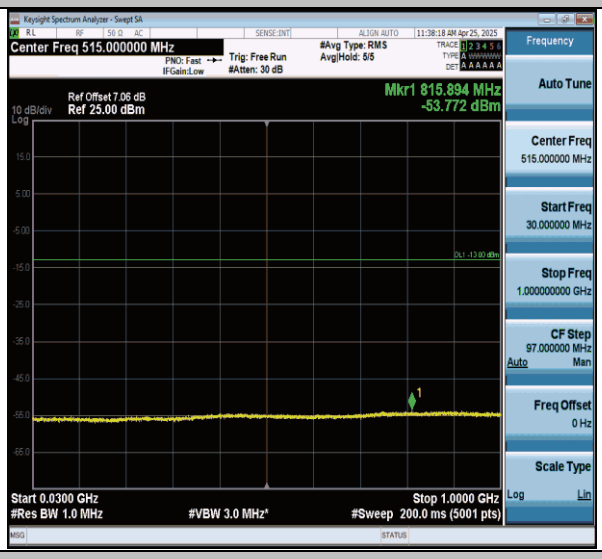
Test Graphs



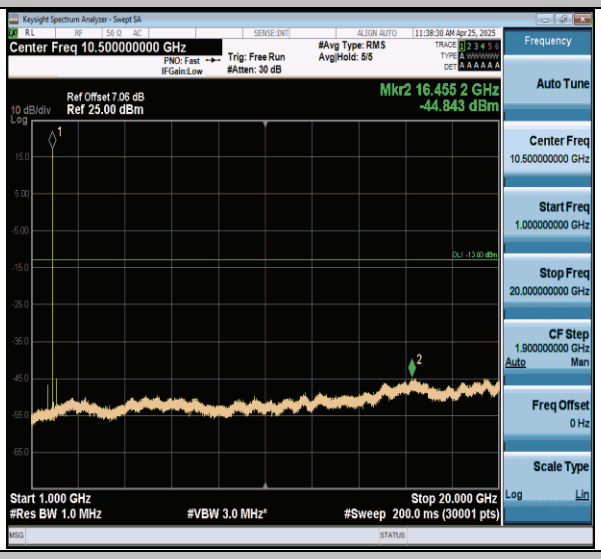
Band25-20MHz-QPSK-26140-PASS



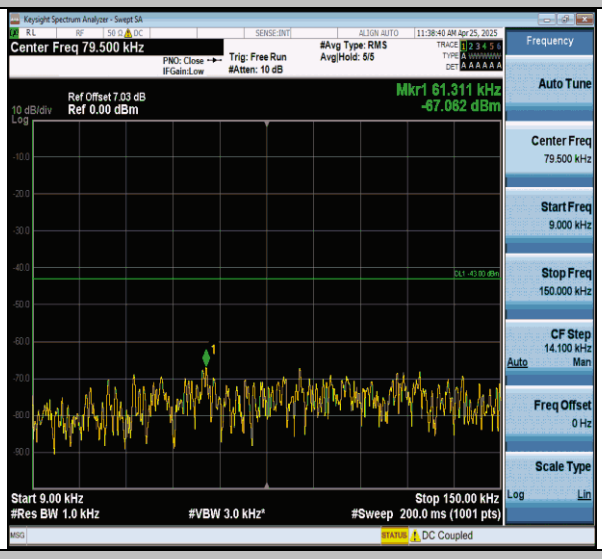
Band25-20MHz-QPSK-26140-PASS



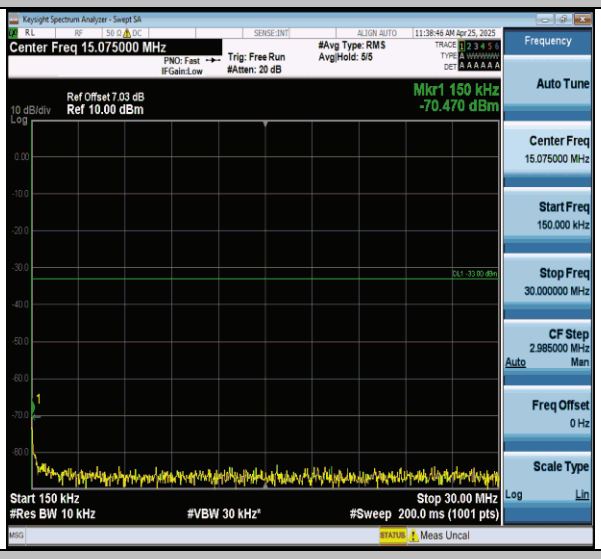
Band25-20MHz-QPSK-26140-PASS



Band25-20MHz-QPSK-26140-PASS

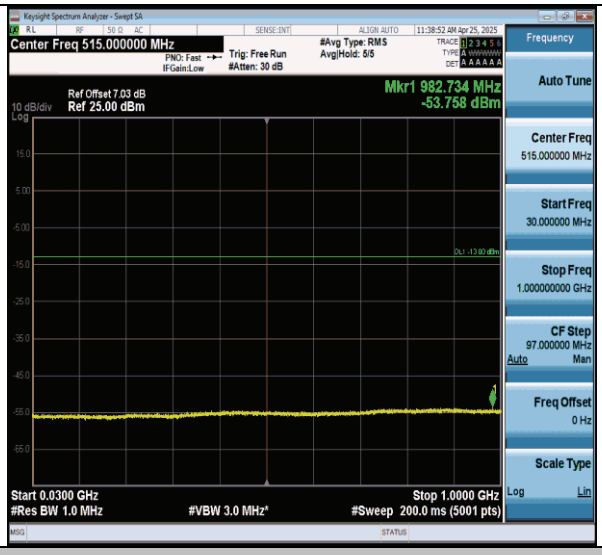


Band25-20MHz-QPSK-26365-PASS

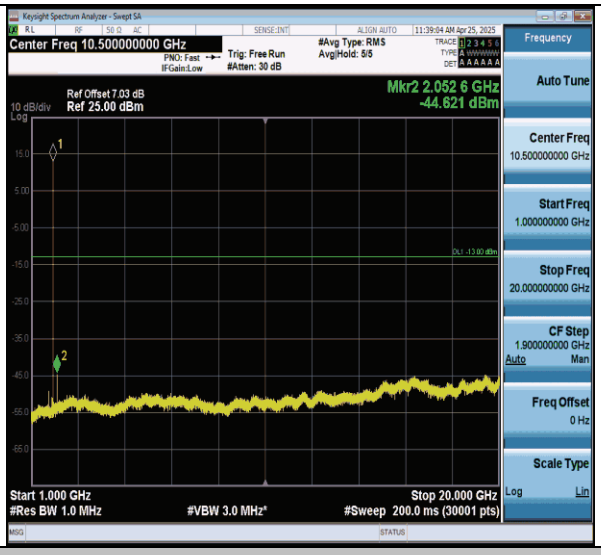


Band25-20MHz-QPSK-26365-PASS

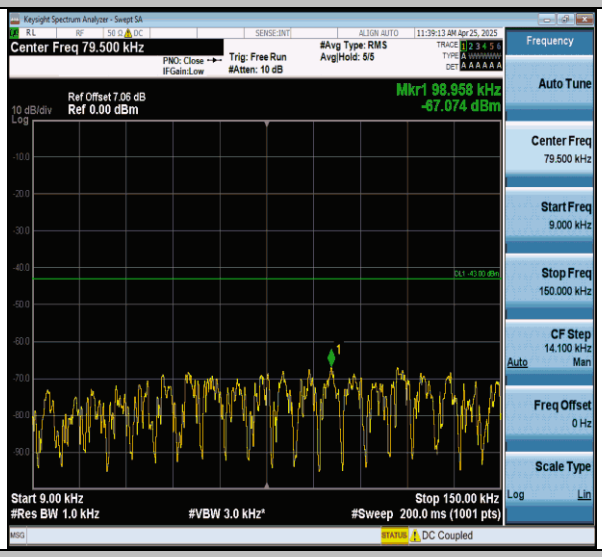
All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.



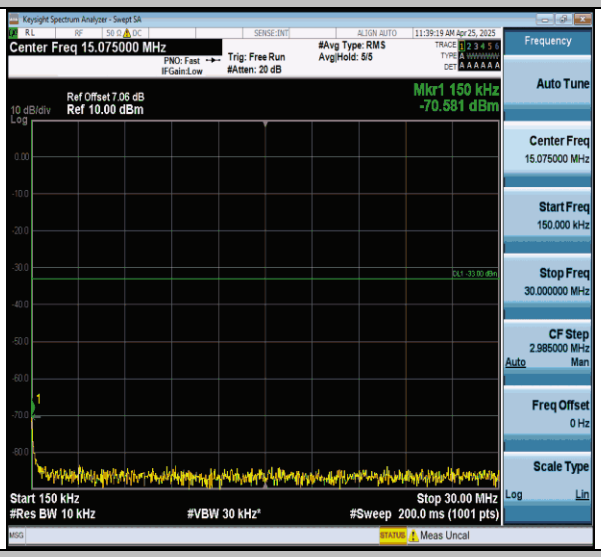
Band25-20MHz-QPSK-26365-PASS



Band25-20MHz-QPSK-26365-PASS

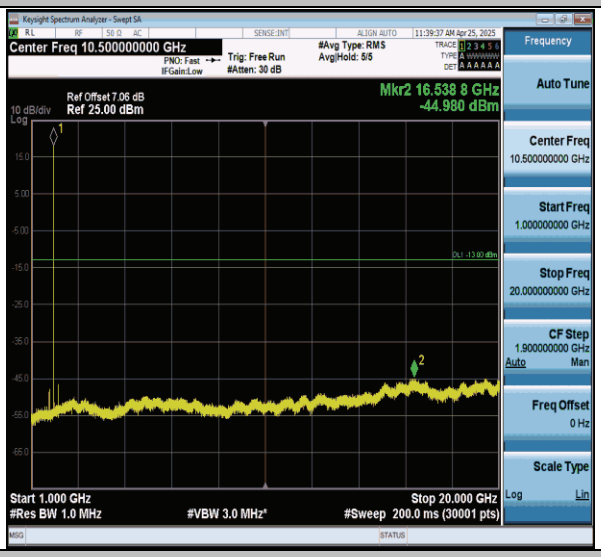


Band25-20MHz-QPSK-26590-PASS



Band25-20MHz-QPSK-26590-PASS

Band25-20MHz-QPSK-26590-PASS



Band25-20MHz-QPSK-26590-PASS

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.

Frequency Stability for M1

Test Result

Voltage											
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Verdict
Band25	20MHz	QPSK	26365	6	0	Low	VN	NT	-7.70	-0.004090	PASS
Band25	20MHz	QPSK	26365	6	0	Low	VL	NT	-7.70	-0.004090	PASS
Band25	20MHz	QPSK	26365	6	0	Low	VH	NT	-3.70	-0.001965	PASS

Temperature											
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Verdict
Band25	20MHz	QPSK	26365	6	0	Low	NV	-30	-8.40	-0.004462	PASS
Band25	20MHz	QPSK	26365	6	0	Low	NV	-20	-6.90	-0.003665	PASS
Band25	20MHz	QPSK	26365	6	0	Low	NV	-10	-5.90	-0.003134	PASS
Band25	20MHz	QPSK	26365	6	0	Low	NV	0	-8.90	-0.004728	PASS
Band25	20MHz	QPSK	26365	6	0	Low	NV	10	-8.00	-0.004250	PASS
Band25	20MHz	QPSK	26365	6	0	Low	NV	20	-6.00	-0.003187	PASS
Band25	20MHz	QPSK	26365	6	0	Low	NV	30	-7.10	-0.003772	PASS
Band25	20MHz	QPSK	26365	6	0	Low	NV	40	-6.80	-0.003612	PASS
Band25	20MHz	QPSK	26365	6	0	Low	NV	50	-7.20	-0.003825	PASS

~The End~

All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from TOWE.