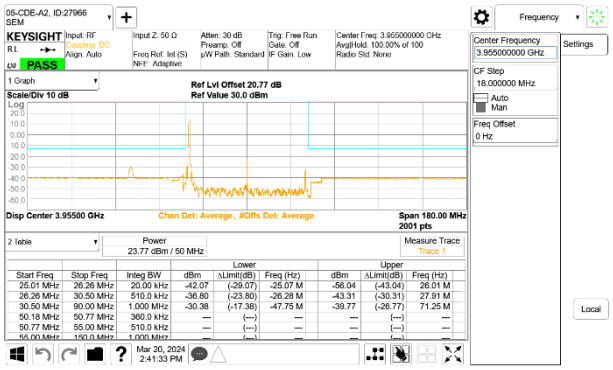
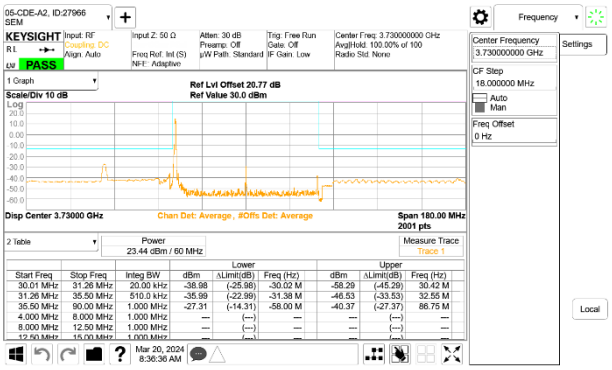
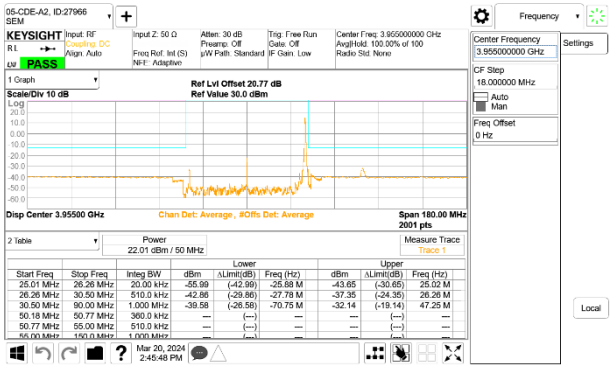


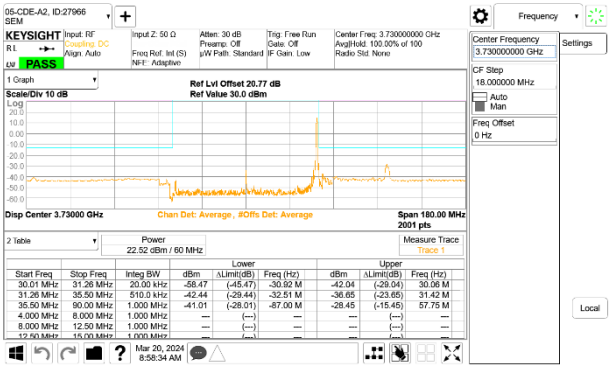
5G NR n77 50MHz BPSK High Channel RB1-0, ID:27966



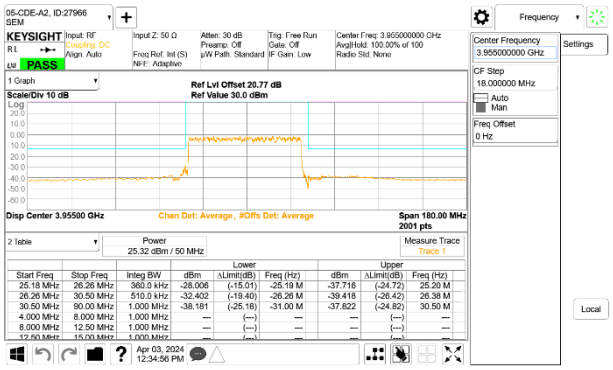
5G NR n77 60MHz BPSK Low Channel RB1-0, ID:27966



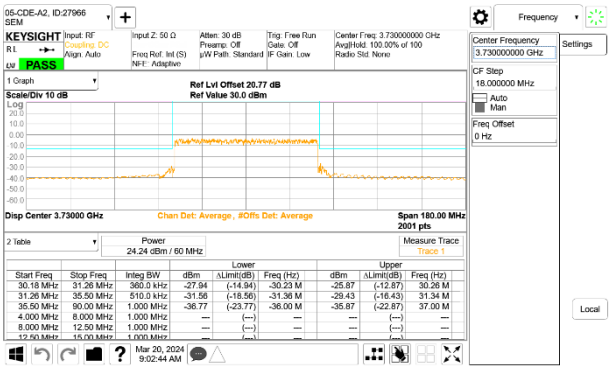
5G NR n77 50MHz BPSK High Channel RB1-132, ID:27966



5G NR n77 60MHz BPSK Low Channel RB1-161, ID:27966

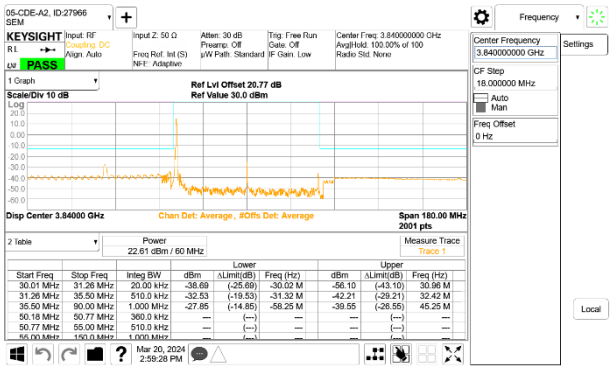


5G NR n77 50MHz BPSK High Channel RB128-0, ID:27966

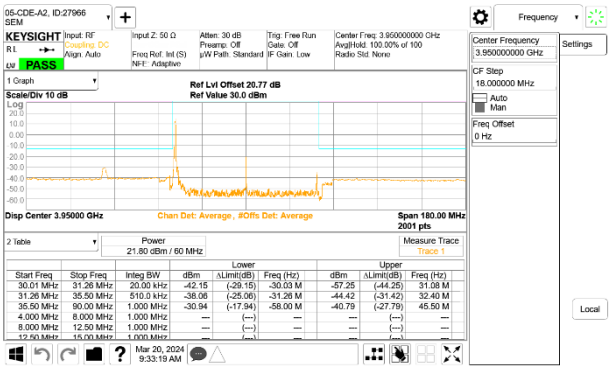


5G NR n77 60MHz BPSK Low Channel RB162-0, ID:27966

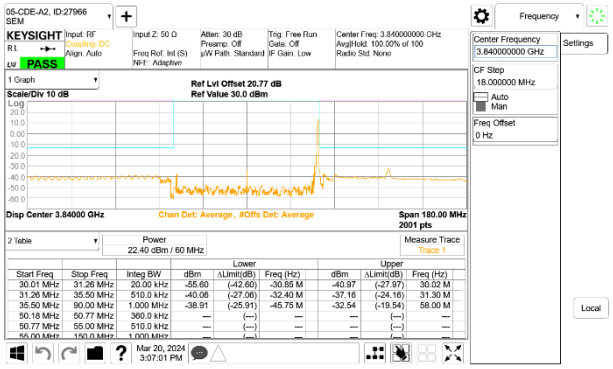
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000
FORM NO: CCSUP4031B
FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.



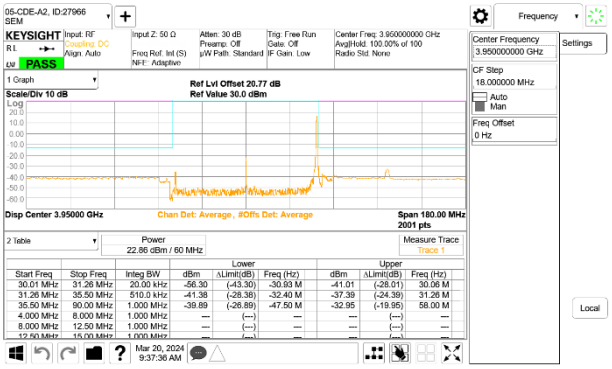
5G NR n77 60MHz BPSK Middle Channel RB1-0, ID:27966



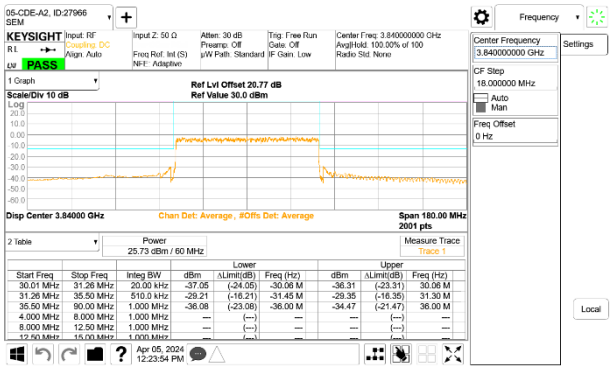
5G NR n77 60MHz BPSK High Channel RB1-0, ID:27966



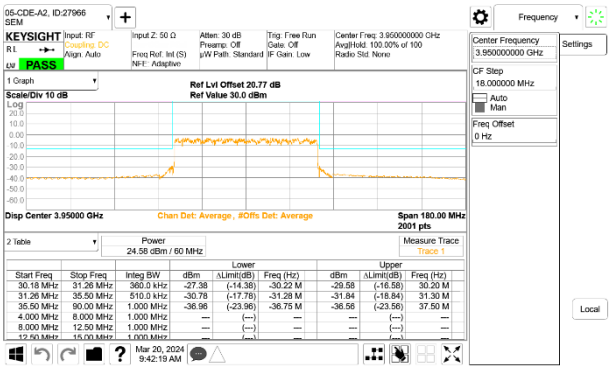
5G NR n77 60MHz BPSK Middle Channel RB1-161, ID:27966



5G NR n77 60MHz BPSK High Channel RB1-161, ID:27966

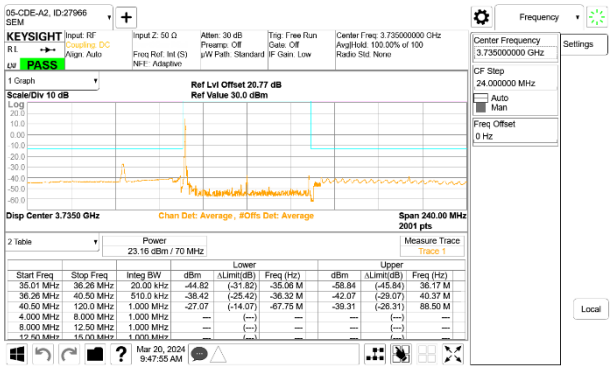


5G NR n77 60MHz BPSK Middle Channel RB162-0, ID:27966

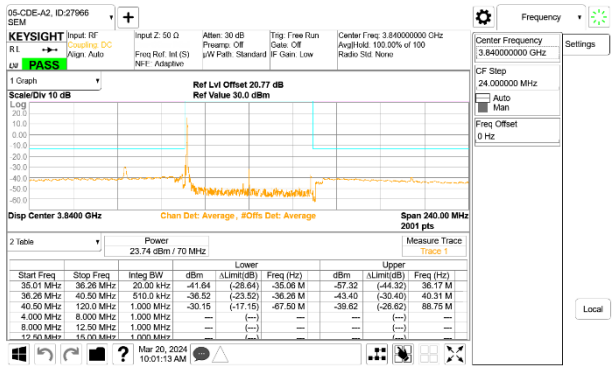


5G NR n77 60MHz BPSK High Channel RB162-0, ID:27966

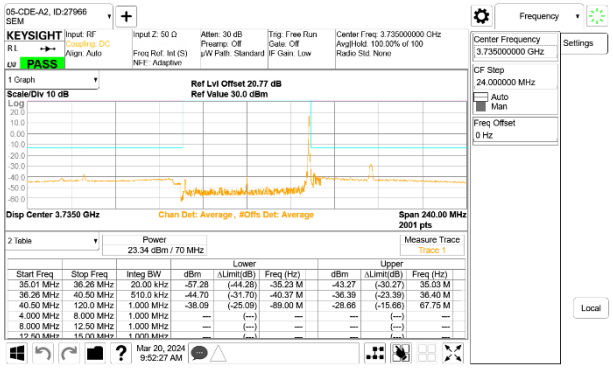
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.



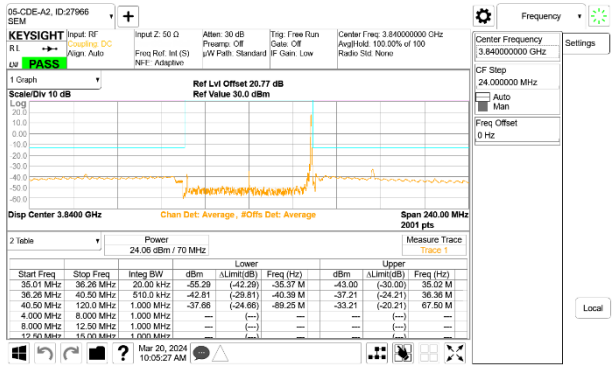
5G NR n77 70MHz BPSK Low Channel RB1-0, ID:27966



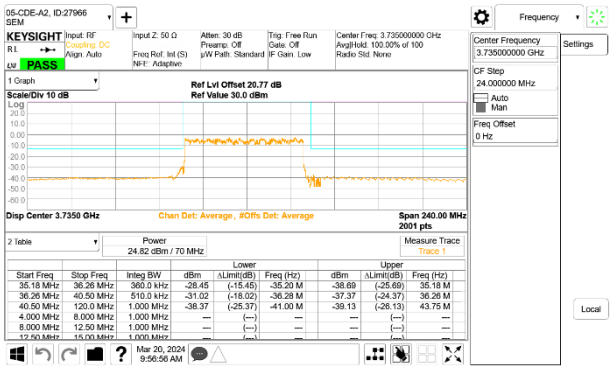
5G NR n77 70MHz BPSK Middle Channel RB1-0, ID:27966



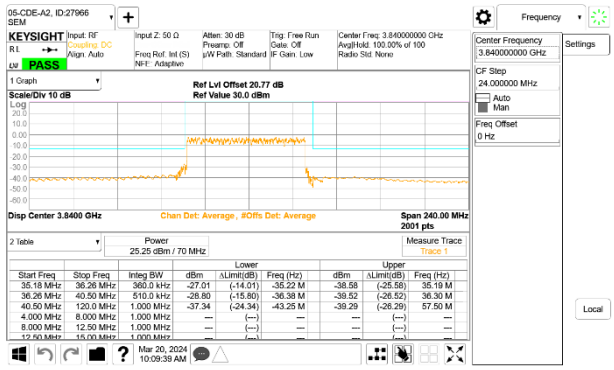
5G NR n77 70MHz BPSK Low Channel RB1-188, ID:27966



5G NR n77 70MHz BPSK Middle Channel RB1-188, ID:27966

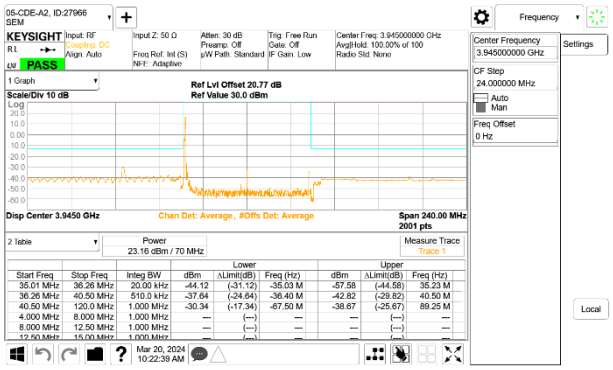


5G NR n77 70MHz BPSK Low Channel RB180-0, ID:27966

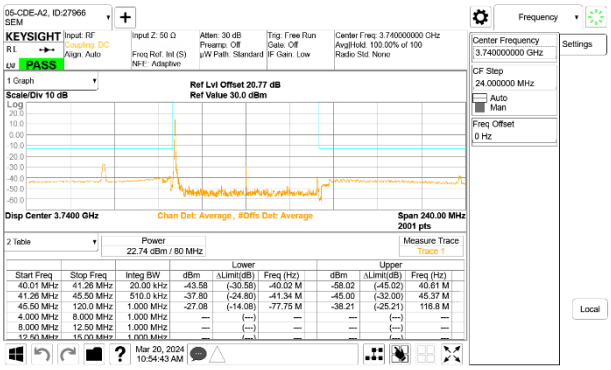


5G NR n77 70MHz BPSK Middle Channel RB180-0, ID:27966

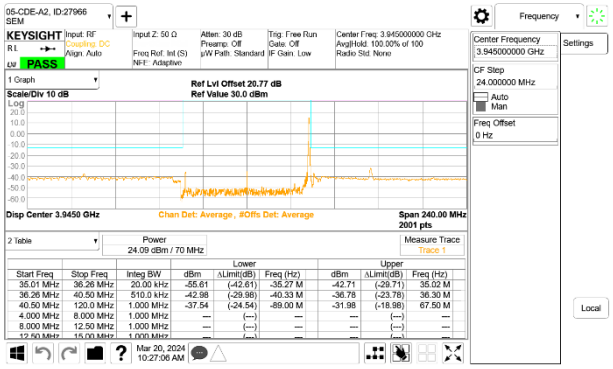
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000
FORM NO: CCSUP4031B
FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.



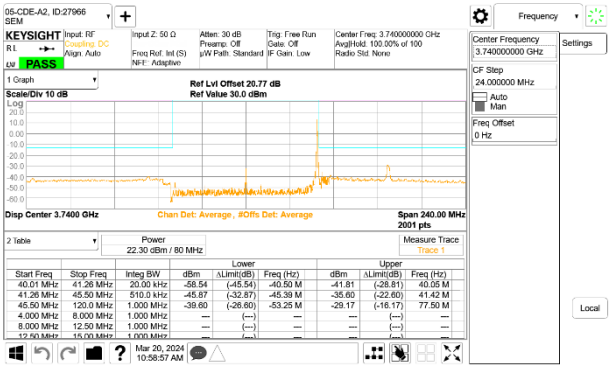
5G NR n77 70MHz BPSK High Channel RB1-0, ID:27966



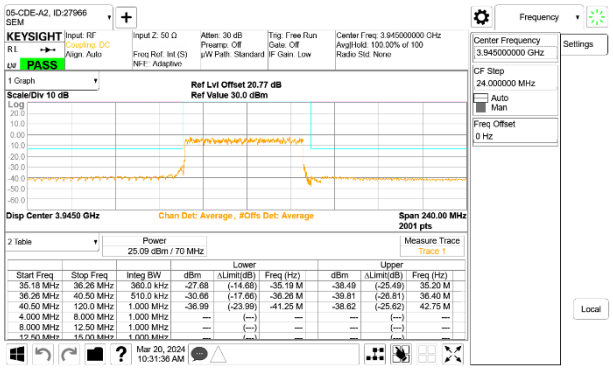
5G NR n77 80MHz BPSK Low Channel RB1-0, ID:27966



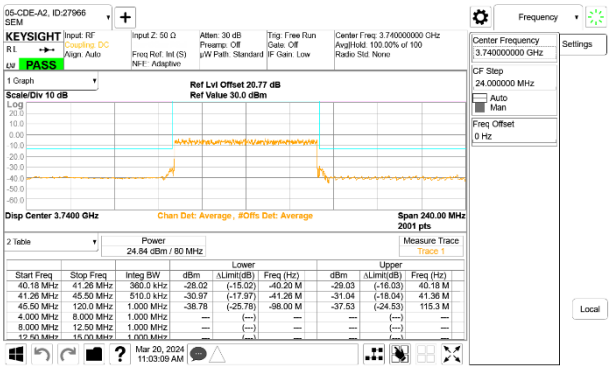
5G NR n77 70MHz BPSK High Channel RB1-188, ID:27966



5G NR n77 80MHz BPSK Low Channel RB1-216, ID:27966

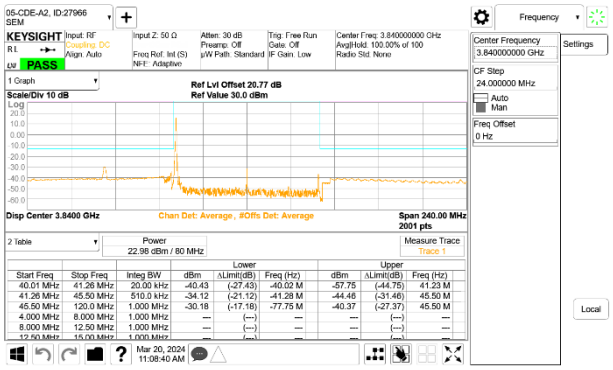


5G NR n77 70MHz BPSK High Channel RB180-0, ID:27966

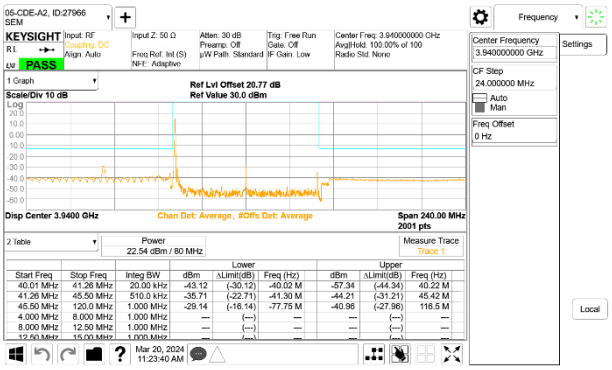


5G NR n77 80MHz BPSK Low Channel RB216-0, ID:27966

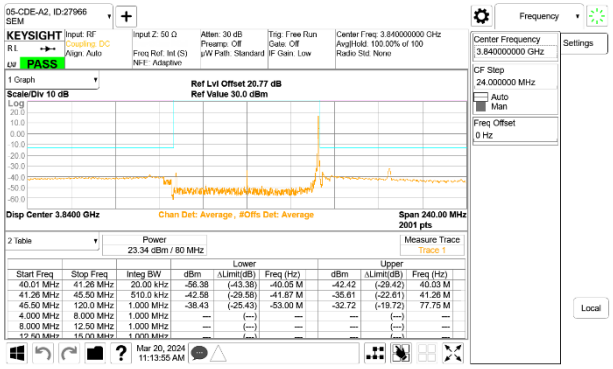
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000
FORM NO: CCSUP4031B
FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.



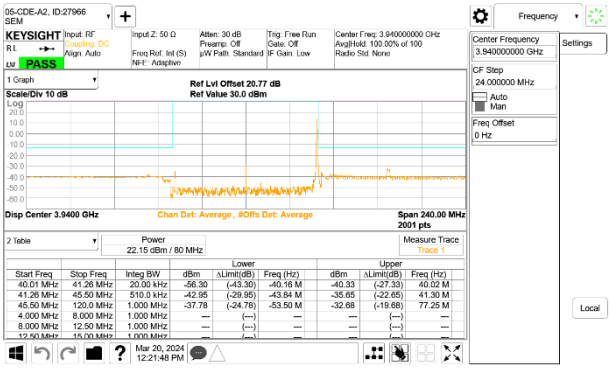
5G NR n77 80MHz BPSK Middle Channel RB1-0, ID:27966



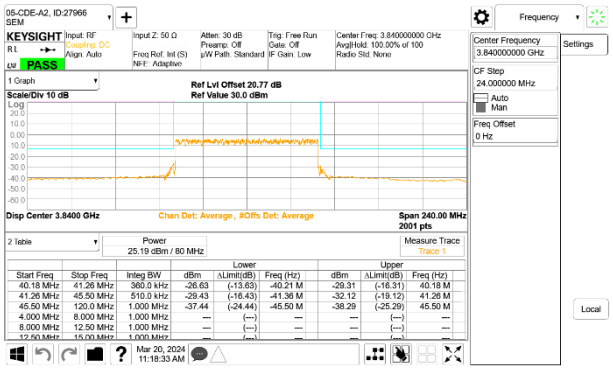
5G NR n77 80MHz BPSK High Channel RB1-0, ID:27966



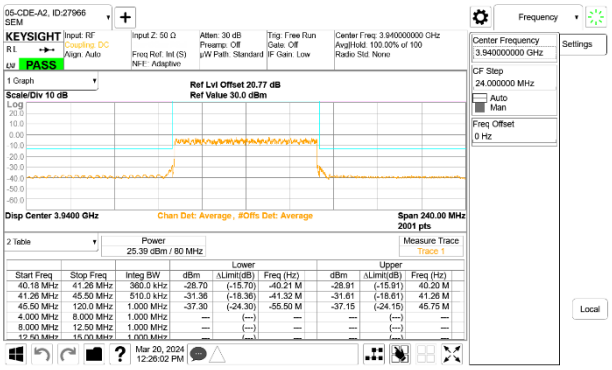
5G NR n77 80MHz BPSK Middle Channel RB1-216, ID:27966



5G NR n77 80MHz BPSK High Channel RB1-216, ID:27966



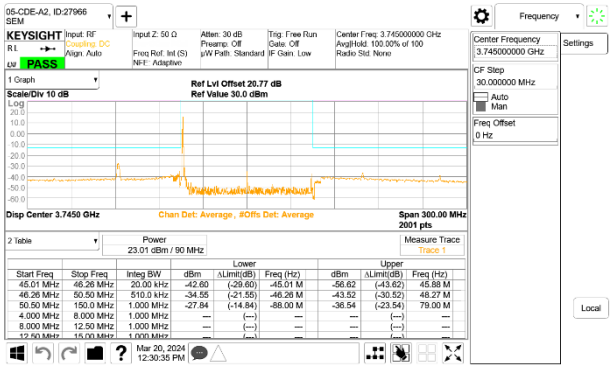
5G NR n77 80MHz BPSK Middle Channel RB216-0, ID:27966



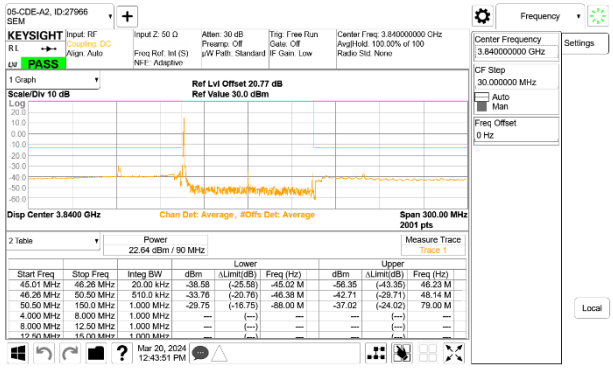
5G NR n77 80MHz BPSK High Channel RB216-0, ID:27966

UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000

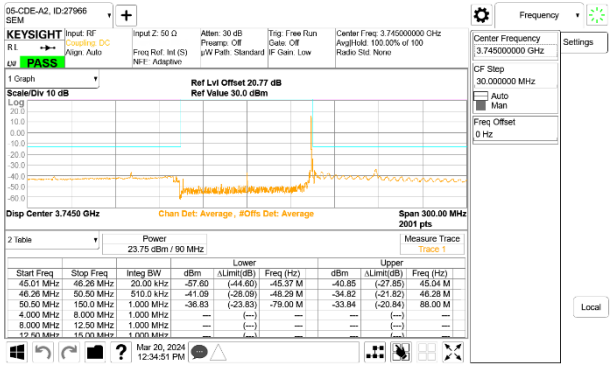
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.



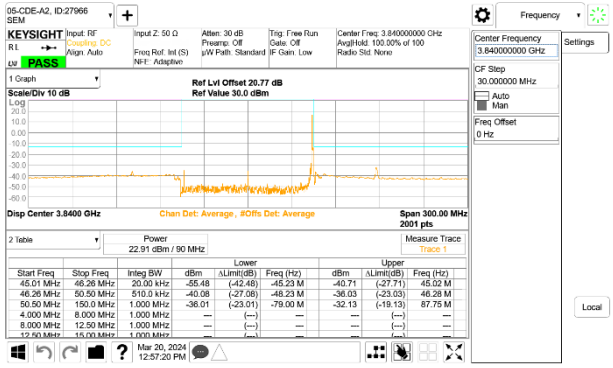
5G NR n77 90MHz BPSK Low Channel RB1-0, ID:27966



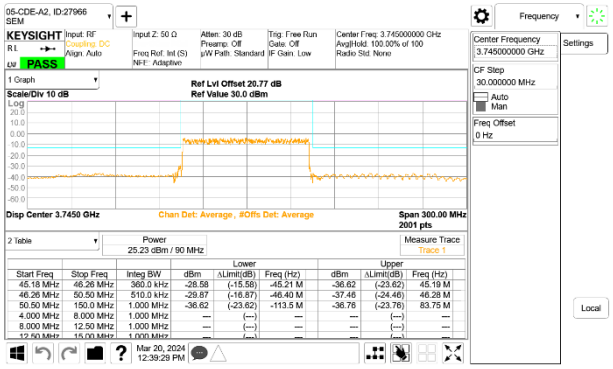
5G NR n77 90MHz BPSK Middle Channel RB1-0, ID:27966



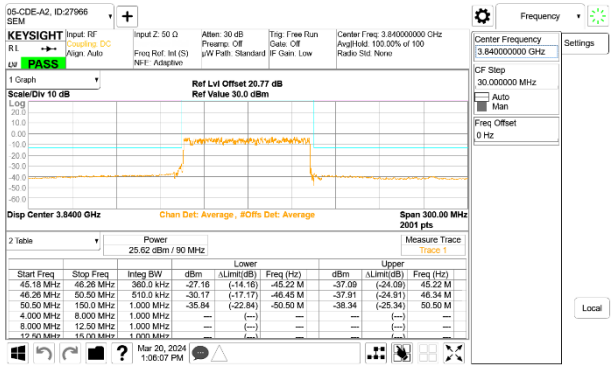
5G NR n77 90MHz BPSK Low Channel RB1-244, ID:27966



5G NR n77 90MHz BPSK Middle Channel RB1-244, ID:27966

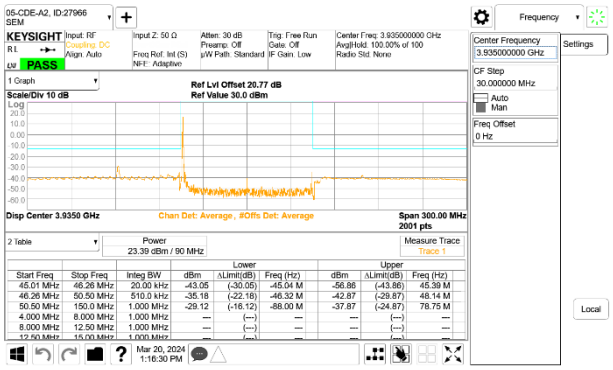


5G NR n77 90MHz BPSK Low Channel RB243-0, ID:27966

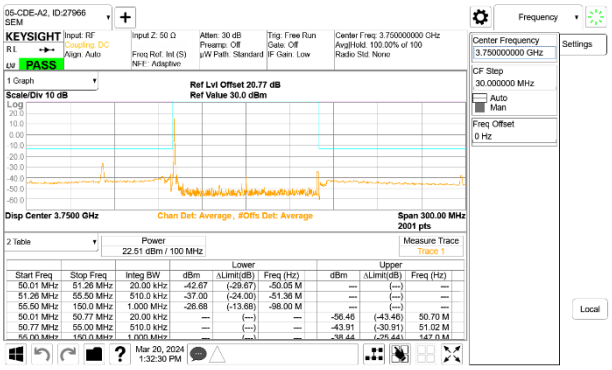


5G NR n77 90MHz BPSK Middle Channel RB243-0, ID:27966

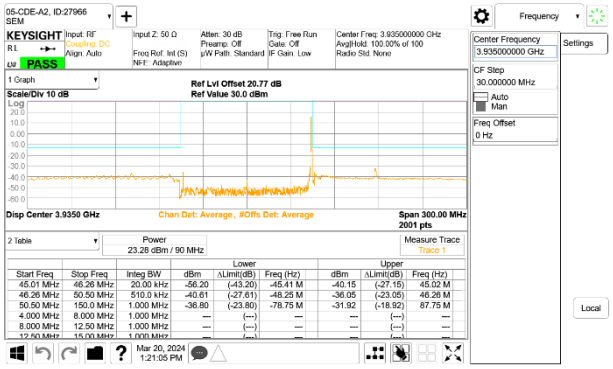
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000
FORM NO: CCSUP4031B
FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.



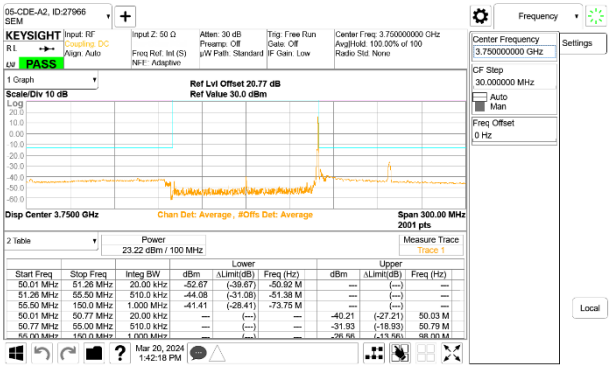
5G NR n77 90MHz BPSK High Channel RB1-0, ID:27966



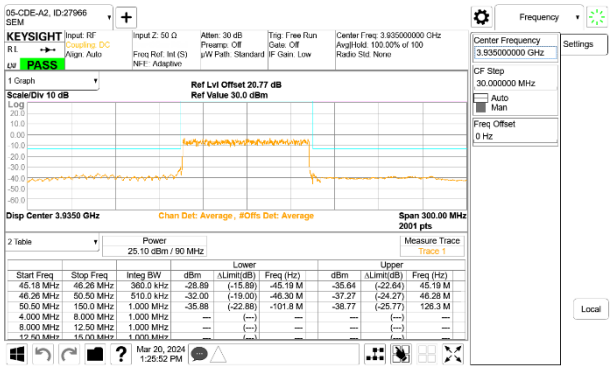
5G NR n77 100MHz BPSK Low Channel RB1-0, ID:27966



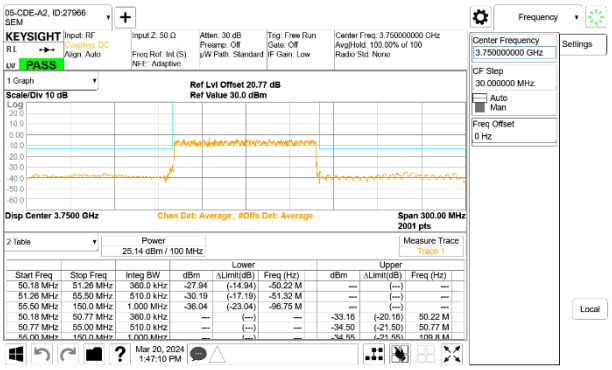
5G NR n77 90MHz BPSK High Channel RB1-244, ID:27966



5G NR n77 100MHz BPSK Low Channel RB1-272, ID:27966

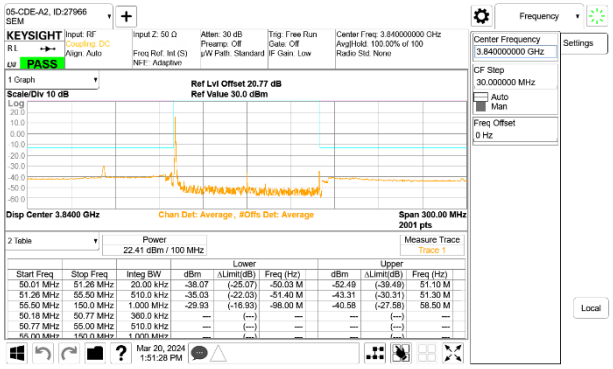


5G NR n77 90MHz BPSK High Channel RB243-0, ID:27966

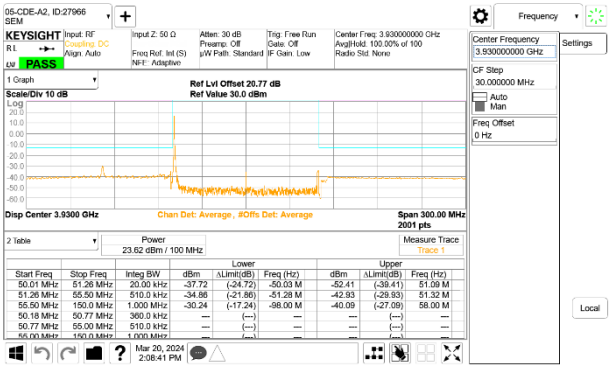


5G NR n77 100MHz BPSK Low Channel RB270-0, ID:27966

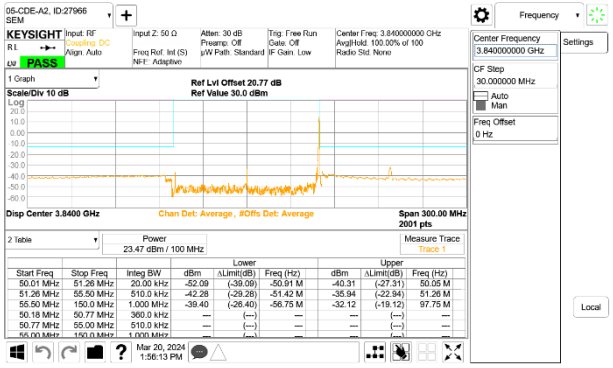
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.



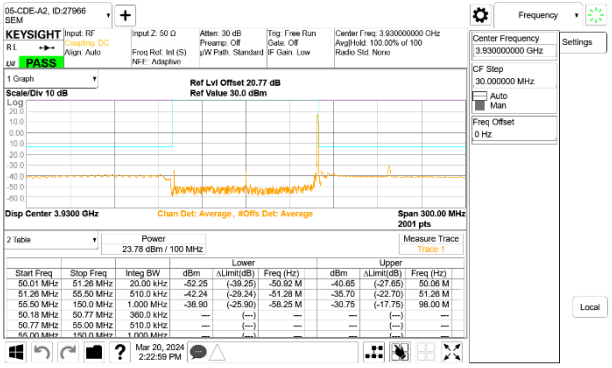
5G NR n77 100MHz BPSK Middle Channel RB1-0, ID:27966



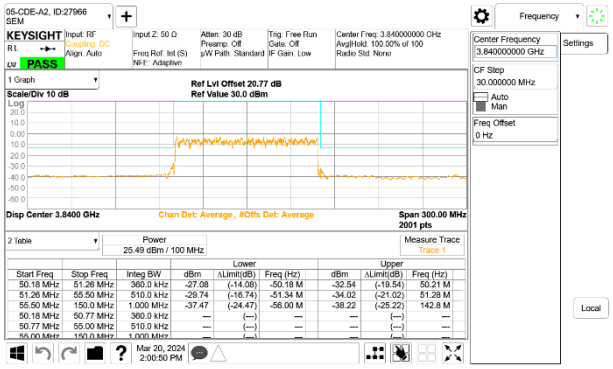
5G NR n77 100MHz BPSK High Channel RB1-0, ID:27966



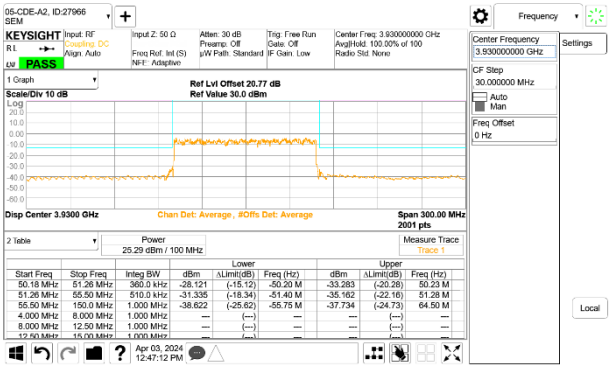
5G NR n77 100MHz BPSK Middle Channel RB1-272, ID:27966



5G NR n77 100MHz BPSK High Channel RB1-272, ID:27966



5G NR n77 100MHz BPSK Middle Channel RB270-0, ID:27966



5G NR n77 100MHz BPSK High Channel RB270-0, ID:27966

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

9.3. OUT OF BAND EMISSIONS

TEST PROCEDURE

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

- Set display line at -13 dBm, -25dBm and -40dBm according to the band Limit
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz. (NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

RESULTS

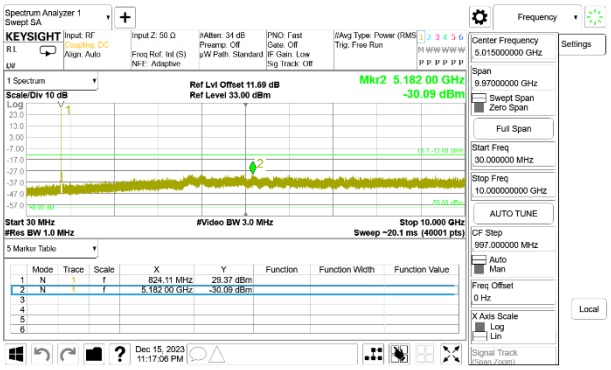
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

9.3.1. LTE BAND 5 AND 5G NR n5

LIMITS

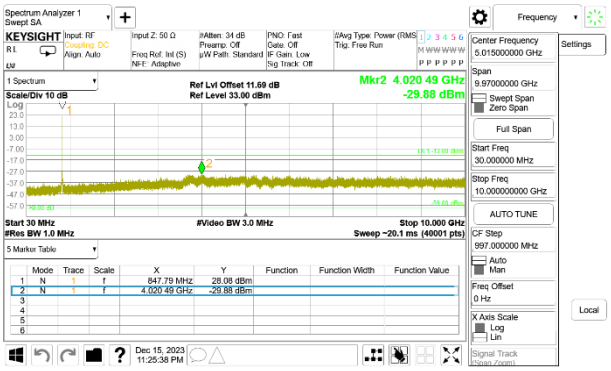
FCC: §22.917 (a)
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.

LTE BAND 5

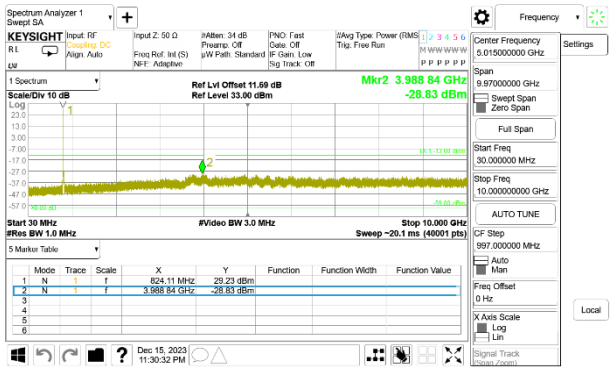


LTE B5 1.4MHz QPSK Low Channel RB1-0, ID:19210

LTE B5 1.4MHz QPSK Middle Channel RB1-0, ID:19210

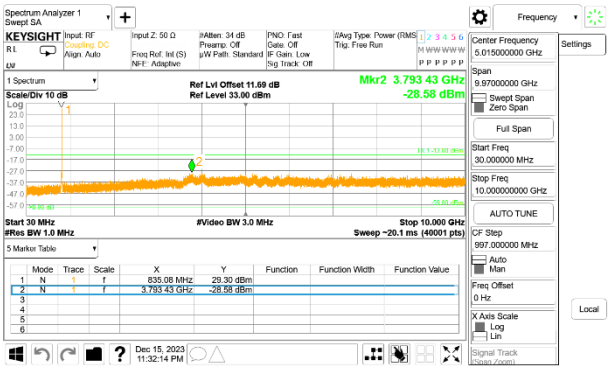


LTE B5 1.4MHz QPSK High Channel RB1-0, ID:19210

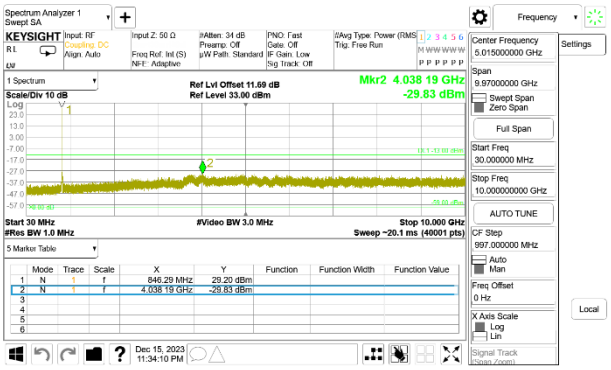


LTE B5 3MHz QPSK Low Channel RB1-0, ID:19210

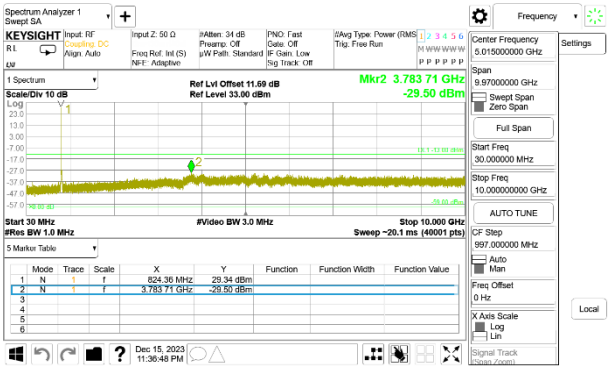
UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.



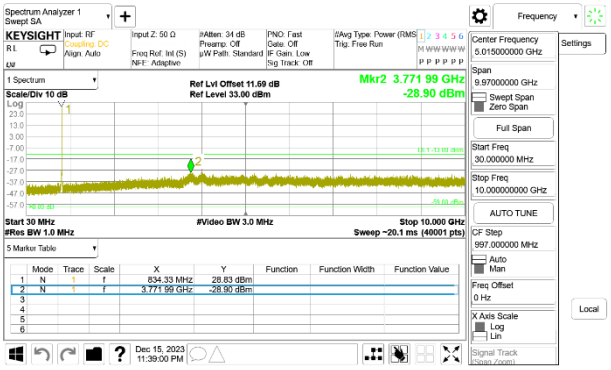
LTE B5 3MHz QPSK Middle Channel RB1-0, ID:19210



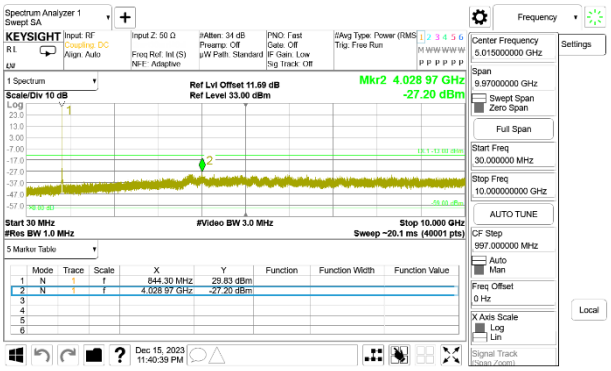
LTE B5 3MHz QPSK High Channel RB1-0, ID:19210



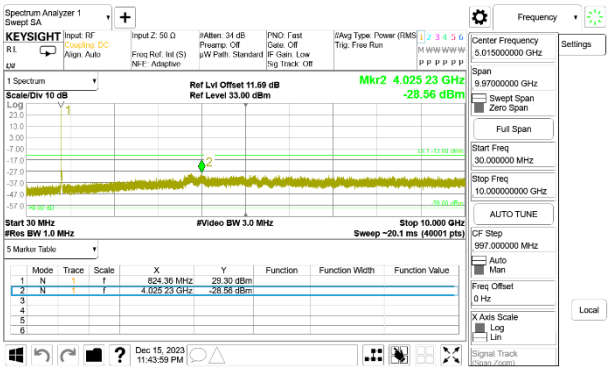
LTE B5 5MHz QPSK Low Channel RB1-0, ID:19210



LTE B5 5MHz QPSK Middle Channel RB1-0, ID:19210

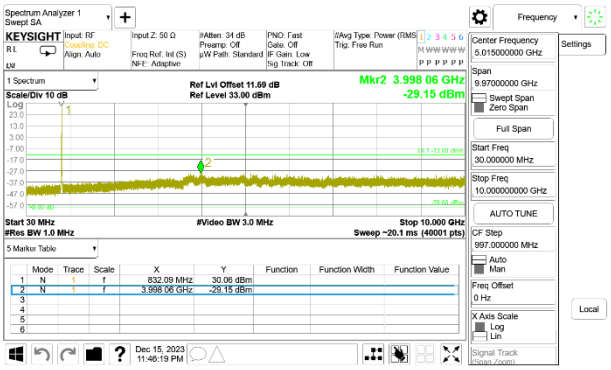


LTE B5 5MHz QPSK High Channel RB1-0, ID:19210

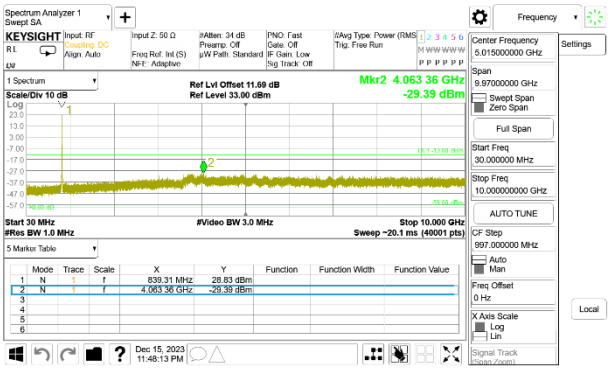


LTE B5 10MHz QPSK Low Channel RB1-0, ID:19210

UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000
FORM NO: CCSUP4031B
FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

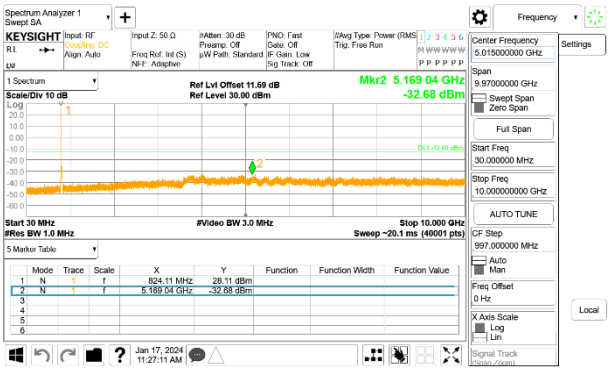


LTE B5 10MHz QPSK Middle Channel RB1-0, ID:19210

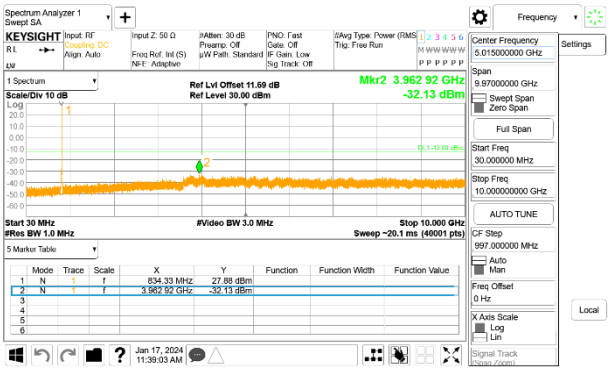


LTE B5 10MHz QPSK High Channel RB1-0, ID:19210

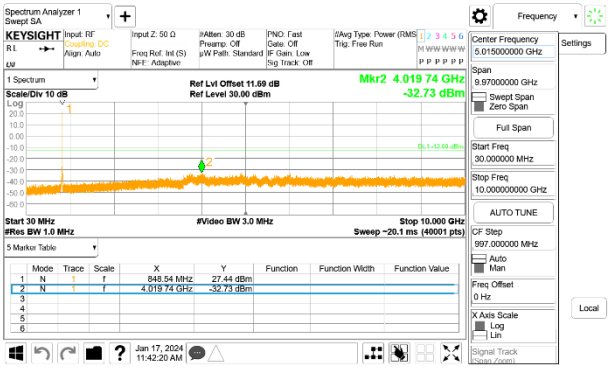
5G NR n5



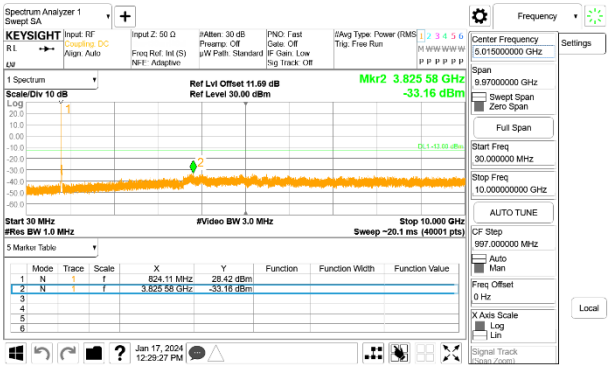
5G NR n5 5MHz BPSK Low Channel RB1-0, ID:27966



5G NR n5 5MHz BPSK Middle Channel RB1-1, ID:27966

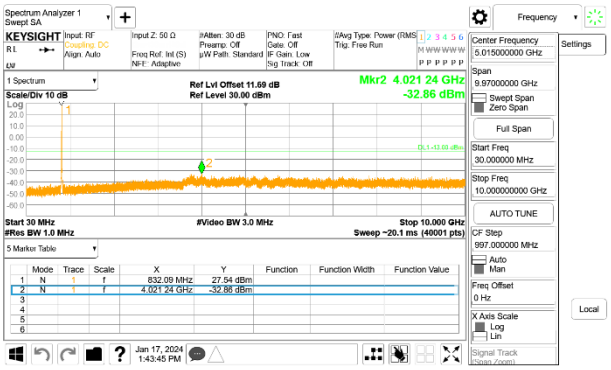


5G NR n5 5MHz BPSK High Channel RB1-24, ID:27966

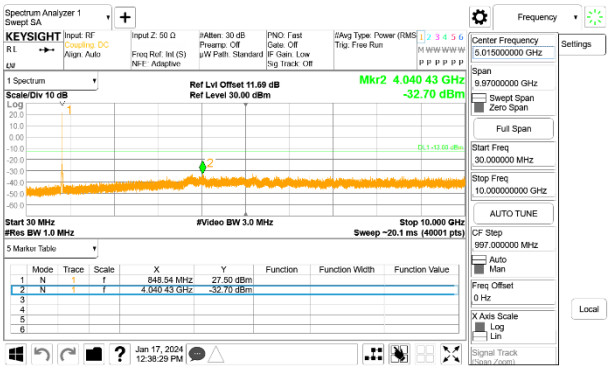


5G NR n5 10MHz BPSK Low Channel RB1-0, ID:27966

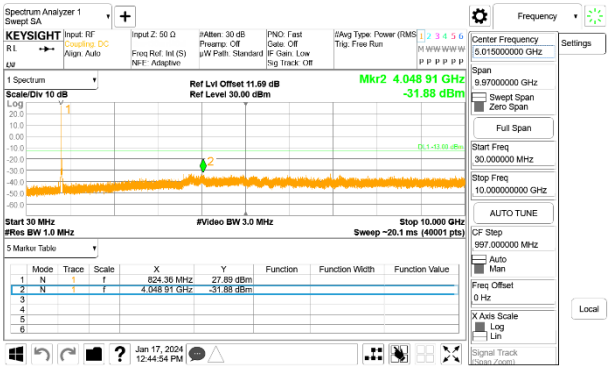
UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.



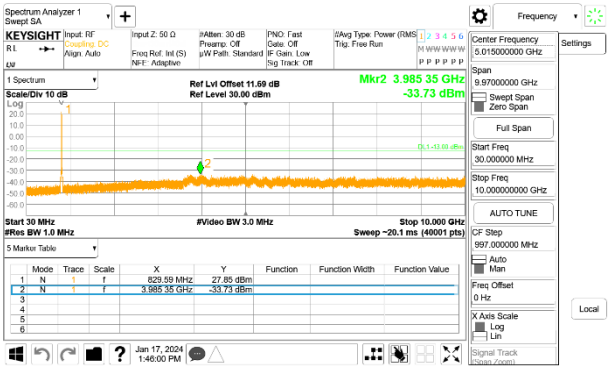
5G NR n5 10MHz BPSK Middle Channel RB1-1, ID:27966



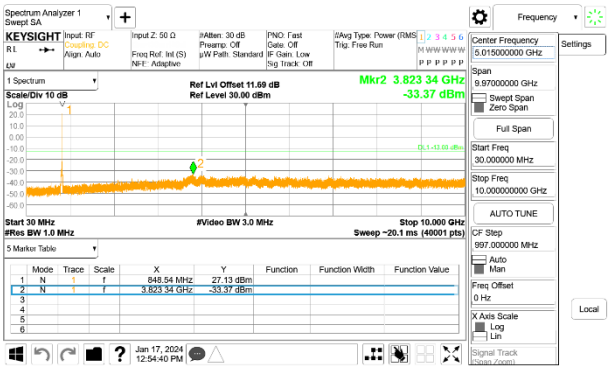
5G NR n5 10MHz BPSK High Channel RB1-51, ID:27966



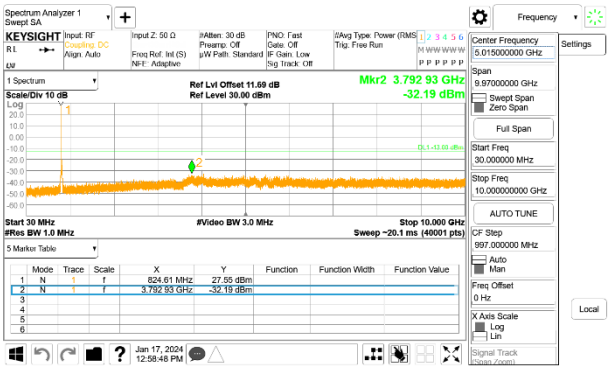
5G NR n5 15MHz BPSK Low Channel RB1-0, ID:27966



5G NR n5 15MHz BPSK Middle Channel RB1-1, ID:27966



5G NR n5 15MHz BPSK High Channel RB1-78, ID:27966

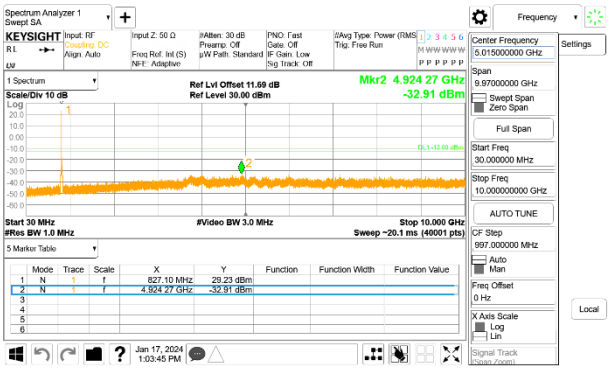


5G NR n5 20MHz BPSK Low Channel RB1-0, ID:27966

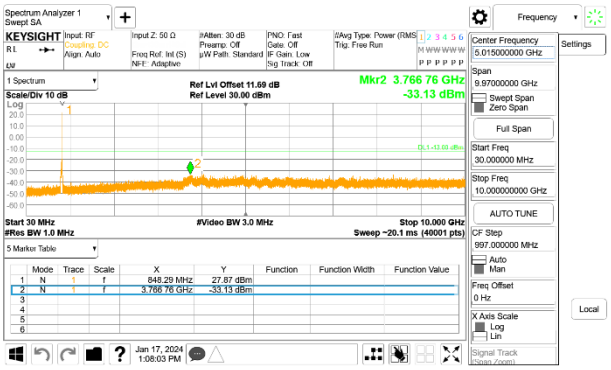
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000

FORM NO: CCSUP4031B
FAX: (510) 661-0888

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.



5G NR n5 20MHz BPSK Middle Channel RB1-1, ID:27966



5G NR n5 20MHz BPSK High Channel RB1-105, ID:27966

UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000

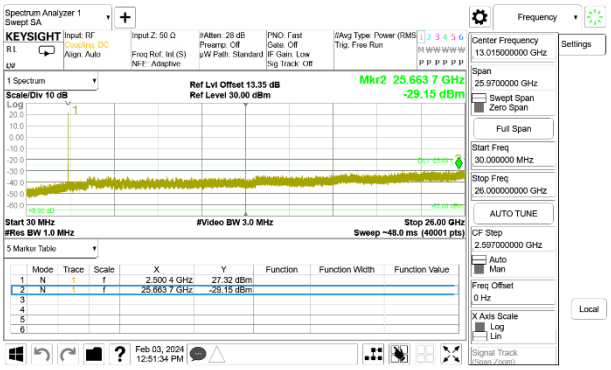
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

9.3.2. LTE BAND 7 AND 5G NR n7

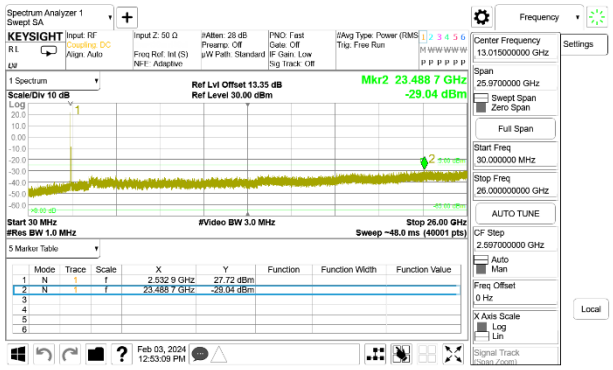
LIMITS

FCC: §27.53 (m)
The minimum permissible attenuation level of any spurious emissions is 55 + 10 log (P) dB where transmitting power (P) in Watts.

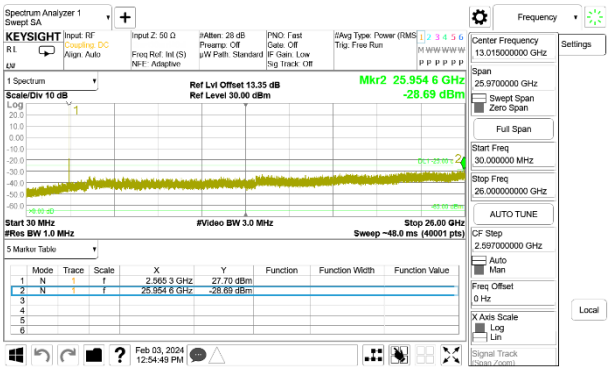
LTE BAND 7



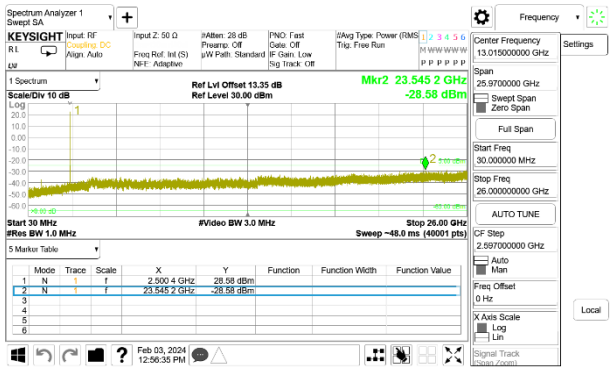
LTE B7 5MHz QPSK Low Channel RB1-0, ID:39005



LTE B7 5MHz QPSK Middle Channel RB1-0, ID:39005



LTE B7 5MHz QPSK High Channel RB1-0, ID:39005



LTE B7 10MHz QPSK Low Channel RB1-0, ID:39005

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.