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January 25, 2003

Timco Engineering Inc.
849 NW State Road 45
Newberry, FL 32669
Telephone 888.472.2424
Fax 352.472.2030

Applicant:
TRV Motorsport, Inc.
300 North Westwood
TOLEDO, OH 43607
FRN 0007 7829 56

Equipment: FCC ID: QOR X100

FCC Rules: Part 90 (LMR Transceiver)

Re: Requested additional information.

Gentlemen:

This is the response for the request of additional information from the FCC for the QORX100 application. A portion of the request is reproduced below.

To: Sid Sanders
From: Martin Perrine
mperrine@fcc.gov
FCC Equipment Authorization Branch

Re: FCC ID: QORX100

Applicant: TRV Motor Sport, Inc.
Correspondence Reference Number: xxxx
731 Confirmation Number: TCxxxxxx
Date of Original Email: 12/23/2002

Subject: Request for additional informatio n

In regards to your recent TCB grant referenced above we kindly request that you provide the following additional information.
1) Tune-up procedure, and Parts lists per CFR47 2.1033(c).

2) Description of any digital modulations. Are the CTCS and DTS digital modes or simply special tones which are FM modulated? Update Form 731 accordingly.

3) Discussion for reasons behind the apparent lack of modulation for 2500 KHz as measured on page 9 of 28.

4) Justification for RBW of 100 KHz used for the conducted spurious emissions spectral plots on page 14-16 of 28. Section 90.210 (m) requires at least 1 MHZ RBW above 1 GHz. Redo plots as appropriate.

5) Confirm that the substitution method was used for all Radiated Spurious emission testing. Please provide a photograph with the substitution antenna in place. Please provide all supporting data and a sample calculation.

SAR

1) Provide new SAR report to account for the following Supplement C requirements. -System validation must be performed within 100 MHZ of the device's center frequency. -Phantom size should be twice the critical dimensions of the device.
- Probes should be calibrated at the device center frequency with similar liquid parameters. -Draft P1528 uncertainty template should be used. -Liquid dielectric parameters should be within 5% of target values. -Tests at low frequency channel (i.e. 450 MHZ).

2) Clarification if all SAR data was reported. Discussions on page suggest that there should be an "ant" and "body" SAR measurement for each test configuration. Two results for each configuration was not located.

3) Details of the power droop observed. Because the droop was excessive please provide power versus time plots for at least 30 minutes and approximate time to perform SAR scans. The FCC believes the SAR tests performed contain factors that significantly increase measurement uncertainty. Firstly, the large power droop in the device under test produces a dynamic SAR distribution. To develop a conservative SAR value it is suggested to scale up the measured SAR value by the droop noted. The SAR measurement system used appears to assume a constant distribution. To determine if the SAR values provided are conservative please perform additional tests 1) a SAR test using an external power supply to supplement the batteries. Please use shielding and ferrite current dampeners on any wires used. 2) A test starting after the output power has stabilized (+20 or 30 minutes) , the SAR value should than be scaled up to full power. Tests in the worst case configuration for both head and body is considered sufficient.

RESPONSE:

1.) Please use the submitted tune up procedure and the uploaded bill of materials list.

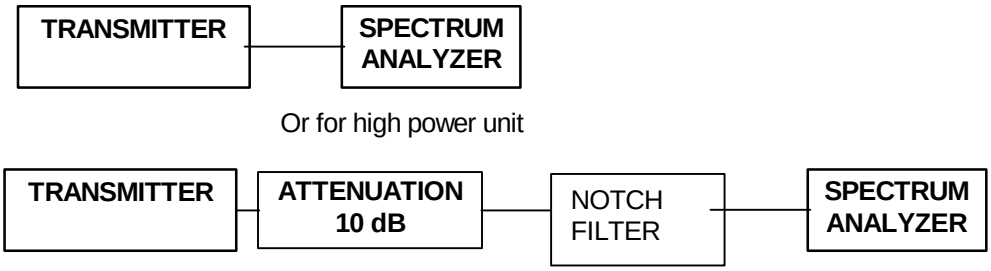
2.) The CTCS and DTS tines are special tones which are frequency modulated. The unit does not have digital modulation techniques incorporated in the design.

3.) The unit had less than 2000 Hz deviation as shown on page 9 of the report. This limited modulation was designed to help the adjacent channel power requirement for designs to be used in the European community.

4.) The spurious responses of the transmitter were measured with an analyzer resolution bandwidth of 100 kHz for frequencies up to 1 GHz. A bandwidth setting of 1 MHz was used for the measurements made above 1 GHz. The plots shown in the report were taken at the antenna terminal in the screen room and the analyzer bandwidth was not adjusted to 1 MHz since the intention was to resolve the spurious emissions for clarity. New plots were produced using the 1MHz bandwidth and shown below. The increased bandwidth does not change the results of the spurious emissions previously reported.

Spurious Emissions at Antenna Terminals

Test Arrangement:



The radio frequency output was coupled to a HP 8562 Spectrum Analyzer. The spectrum analyzer was used to observe the radio frequency spectrum with the transmitter operated in a normal mode. The frequency spectrum from 100 MHz to 5.0 GHz was observed and plots produced of the frequency spectrum. Figures 1 through 6 represent data for the X100 (xx). Data was taken per 2.1051, 2.1057, and applicable paragraphs of Part 90.

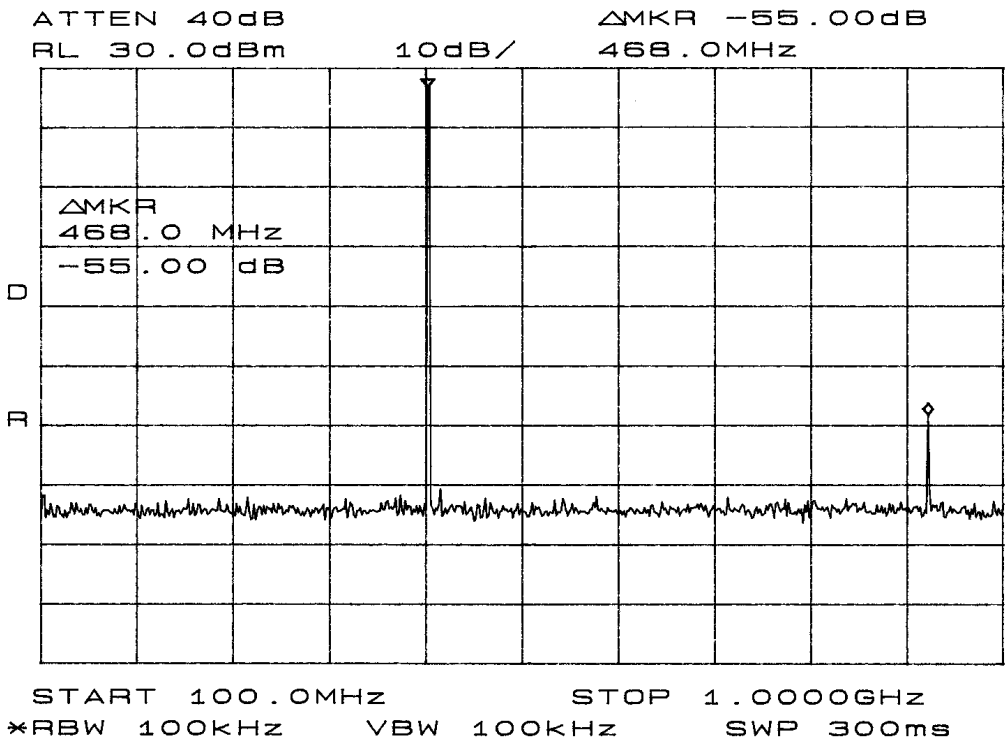


Figure 1 Emission at Antenna Terminal (0.5W)

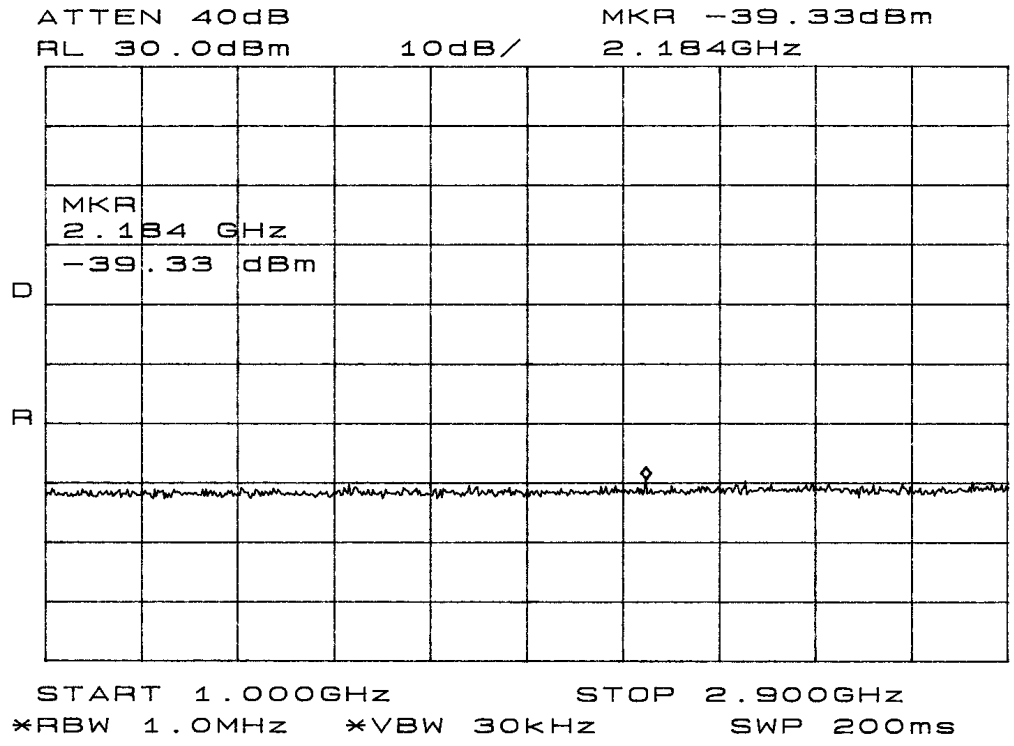


Figure 2 Emission at Antenna Terminal (0.5W)

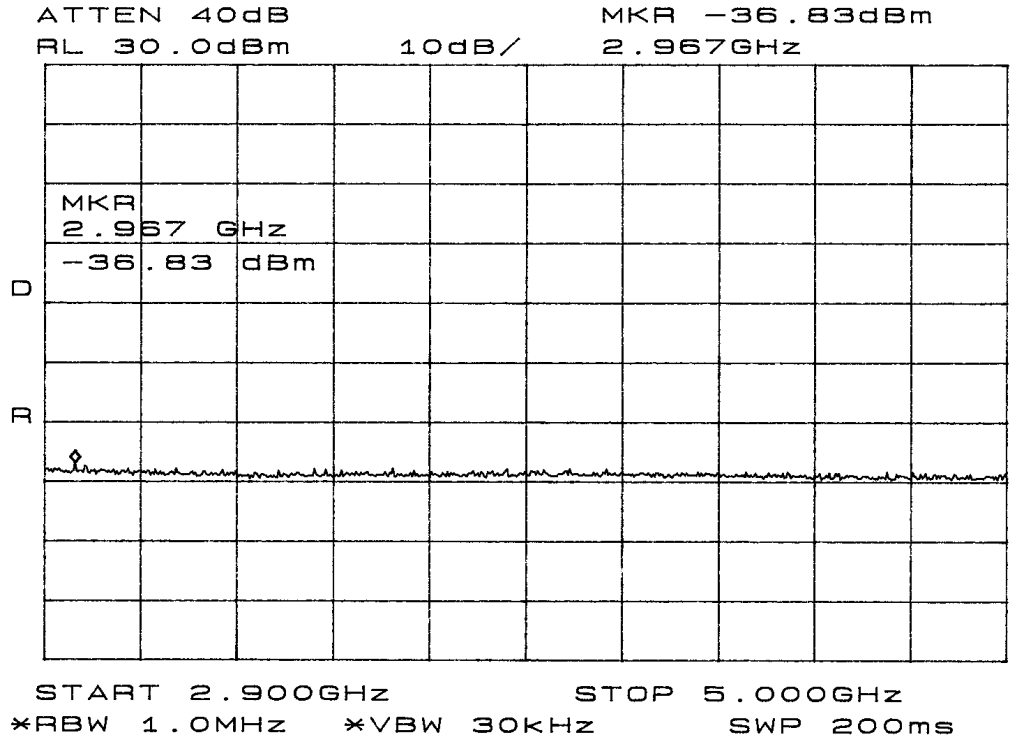


Figure 3 Emission at Antenna Terminal (0.5W)

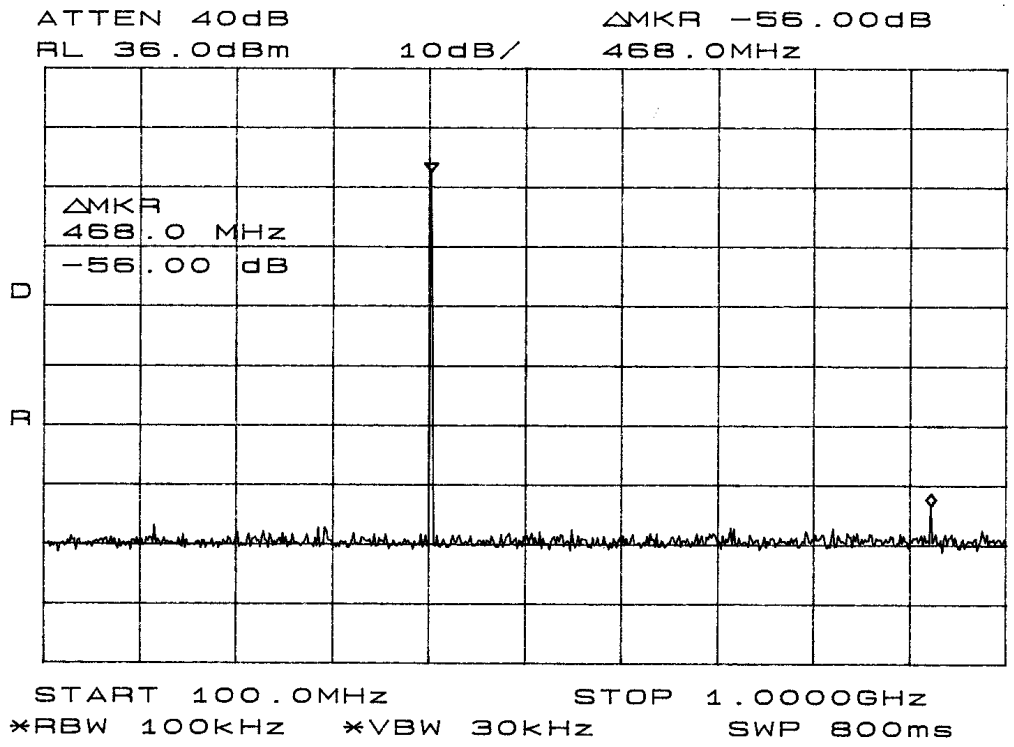


Figure 4 Emission at Antenna Terminal (4.0W)

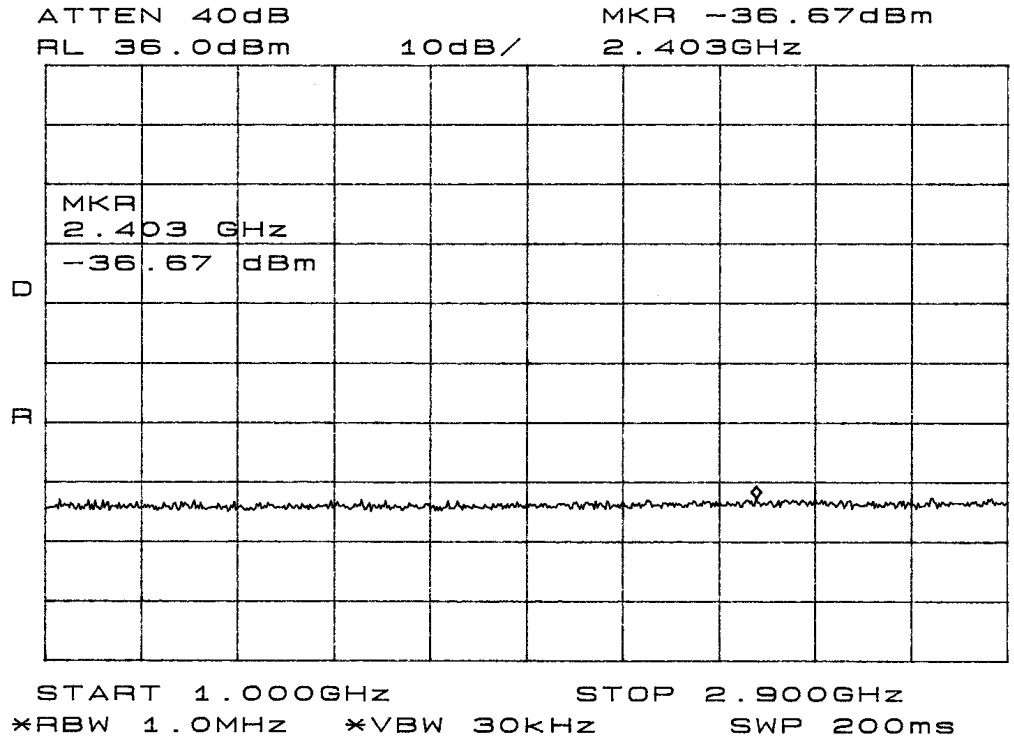


Figure 5 Emission at Antenna Terminal (4.0W)

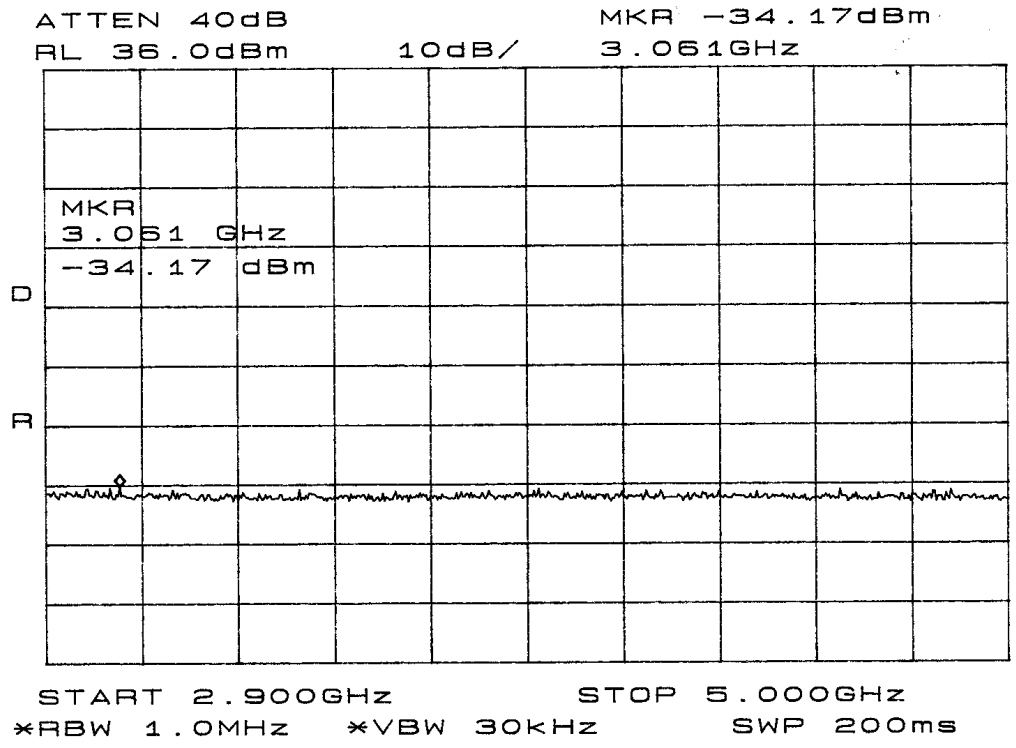
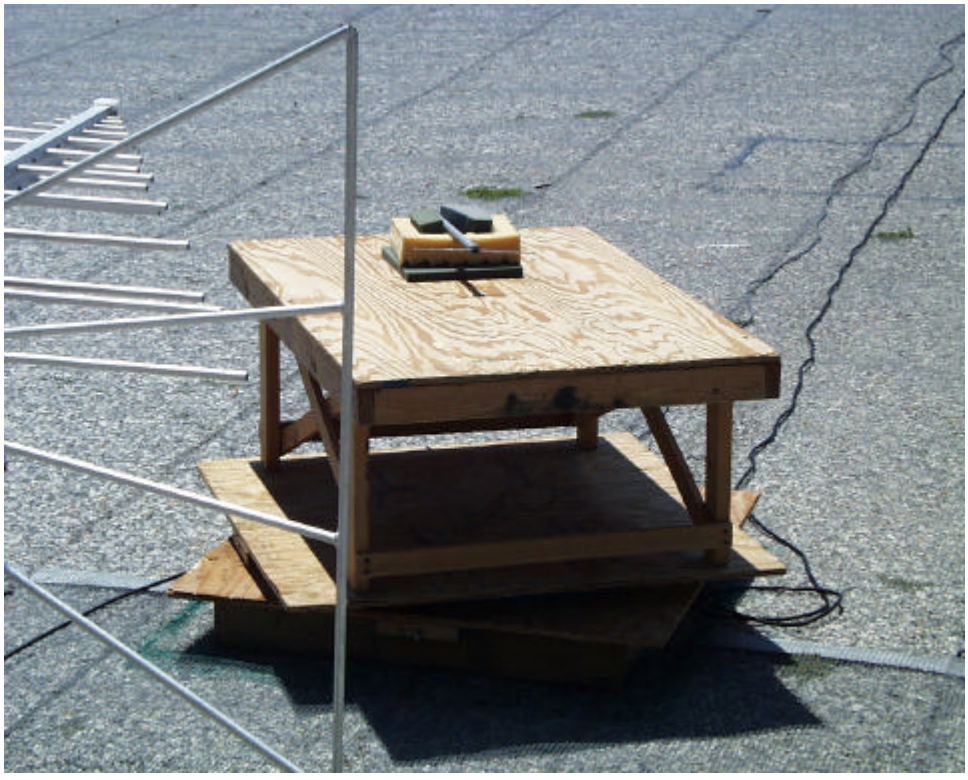


Figure 6 Emission at Antenna Terminal (4.0W)

5.) As stated on page 17 of 28 in the report, the substitution method was used to measure the spurious radiation field strength. The supporting data with sample calculations are reported on pages 18 and 19 of the test report. A picture of the substitution test antenna is supplied below as per your request.



The requested SAR information will be supplied from the test lab which took that data.

Should you require any further information, please contact the undersigned.

Thank you for your consideration in this matter.

Sincerely,

Scot D Rogers

Scot Rogers
Rogers Labs, Inc.
Enclosures