



Technisonic Industries Limited

240 Traders Blvd.
Tel.: (905) 890-2113

Mississauga, Ontario L4Z 1W7
Fax: (905) 890-5338

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Sept 21, 2022

Jae Shin
Spectrum Planning and International Group
Federal Aviation Administration

This letter has been prepared by Technisonic Industries Ltd. to notify the FAA of a certification application (87.147 Authorization of Equipment) for our new T6 MultiBand Transceiver Module.

Equipment Description

The T6 Transceiver will be a module in our existing TDFM-9100, TDFM-9200 and TDFM-9300 as well as future Airborne Radios. The Current TDFM-9x00 radios are meeting environment requirements of DO160C also is STC approved for rotorcraft and fixed wing aircraft. We are not seeking TSO approval for the T6 transceiver. The T6 will be used for non-primary communication for the National Guard, Police, Border Protection, and other United States and Canadian government agencies.

The T6 Transceiver is a MultiBand RF module covering 4 bands in the 30 to 400MHz range.

- Low Band FM (30 to 50MHz)
- VOR Voice AM (107 to 117.9MHz) - RX Only
- **VHF AM (118 to 138MHz)**
- UHF AM (225 to 400MHz)

This letter will only cover the VHF AM band.

FCC Identification number

IMA-T6

Manufacture and Model number

Manufacture Number – 193073
Module Number - T6

Rated Power Output

Nominal RF carrier power is 4W, Modulation depth will not Exceed 95% and Occupied bandwidth will comply with applicable FCC rules part 87.

Frequencies Range

The Transceiver will operate from 117.975 to 136.975MHz for 25kHz Ch Spacing and 117.975 to 136.992MHz for 8.33kHz Ch Spacing.



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Method of tuning

Synthesizer

Channeling capability

25 kHz and 8.33 kHz

*Note – 8.33KHz channels will be locked out for US

Frequency stability

1 ppm

Emission Bandwidth

6 kHz

Emission Type

Emission Designator - 6K00A3E 25 kHz Ch Spacing and 5K6A3E 8.33 kHz Ch Spacing
Class of Emission – A3E

Antenna Characteristics

The antenna will be a quarter wave ground plane antenna.

Receiver Characteristics

The receiver is Dual Conversion with first IF 45 MHz and second IF 1.92 MHz. The nominal sensitivity will be 12dB SINAD at 2uV. No special protection will be required.

Desensitization (2.2.11 DO-186)

Transceiver meets the standard for desensitization specified in section 2.2.11 of RTCA DO-186 on both 25KHz and 8.33KHz channel spacing.



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Emission Plots

118MHz – See Figure 1 and 2

128MHz – See Figure 3 and 4

136.975MHz – See Figure 5 and 6

Harmonic Levels in GNSS Band (2.3.7 DO-186)

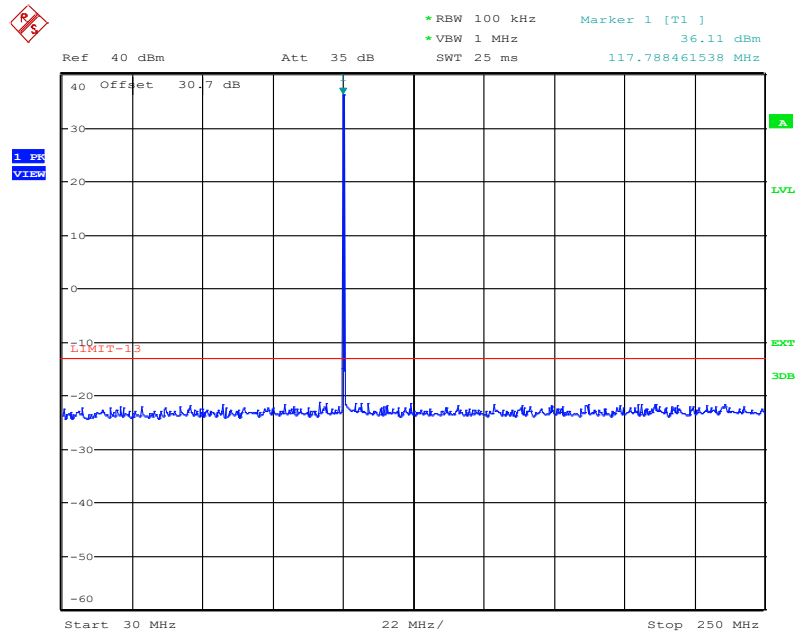
TX Frequency (MHz)	Harmonic	Harmonic Frequency (MHz)	See Figure
130.625	12	1567.500	7
131.275	12	1575.300	8
134.150	12	1609.800	9
120.925	13	1572.025	10
121.175	13	1575.275	11
123.825	13	1609.725	12



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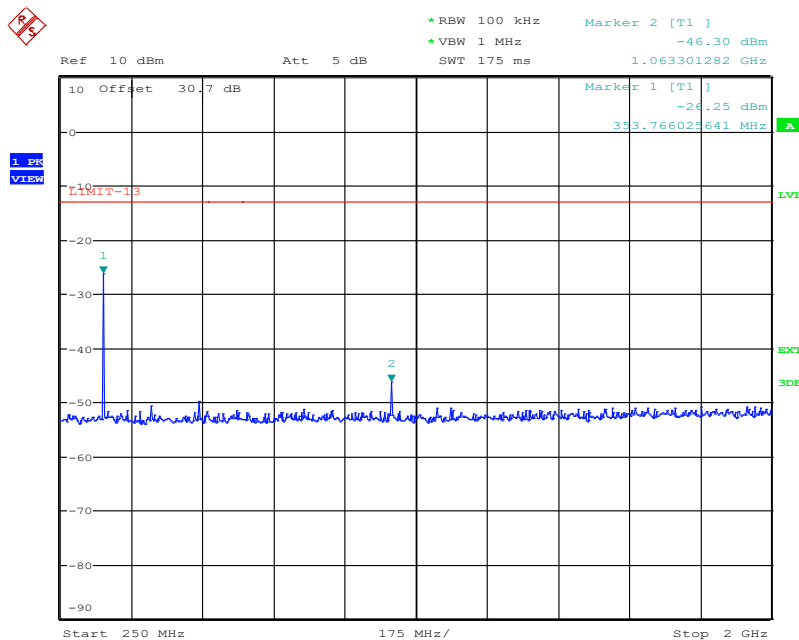
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Date: 21.JUL.2022 11:05:55

Figure 1



Date: 21.JUL.2022 11:07:34

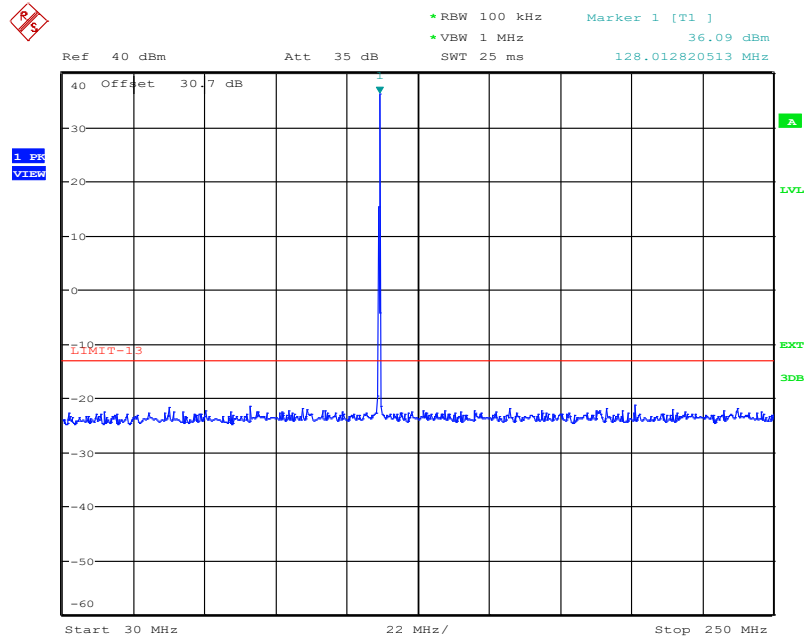
Figure 2



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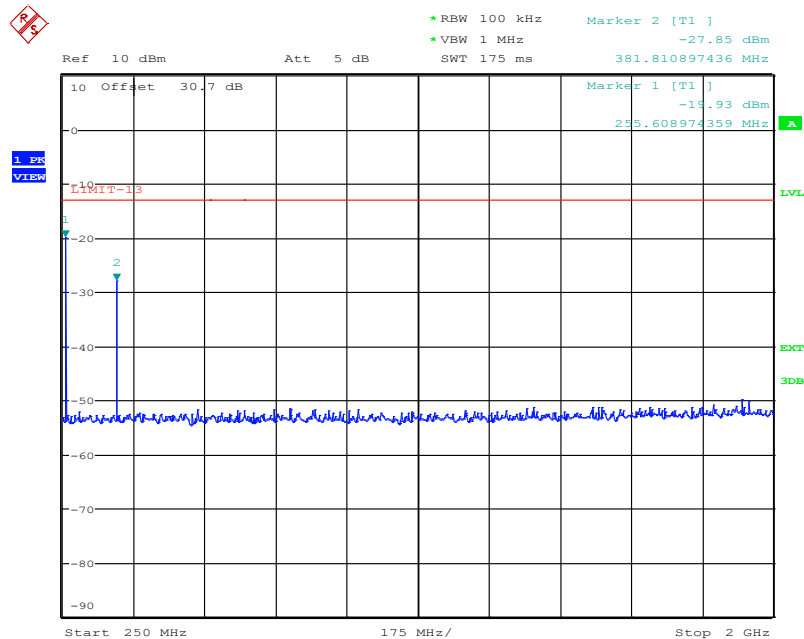
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Date: 21.JUL.2022 11:08:41

Figure 3



Date: 21.JUL.2022 11:09:26

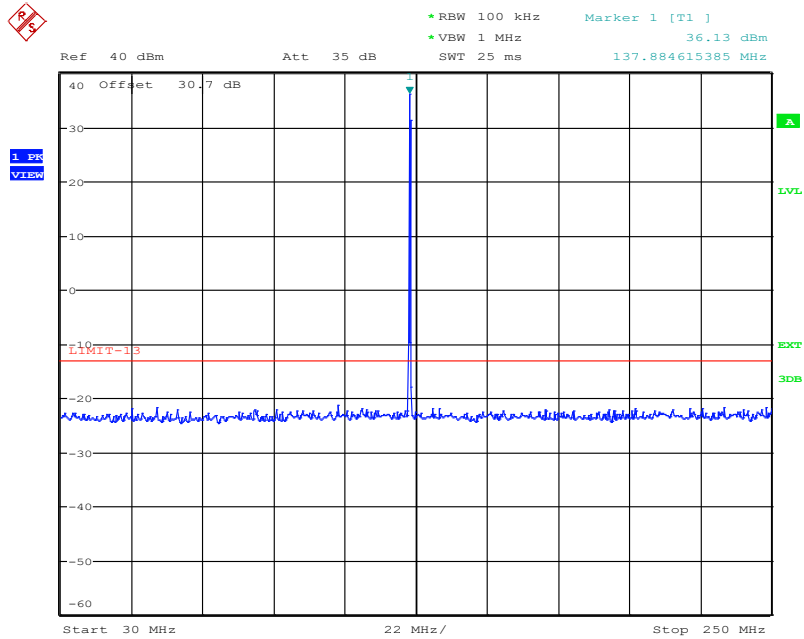
Figure 4



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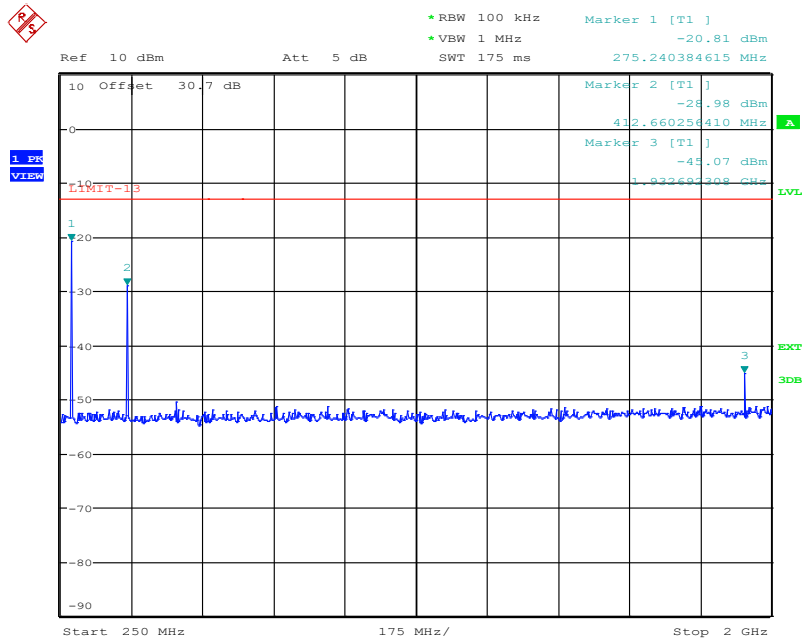
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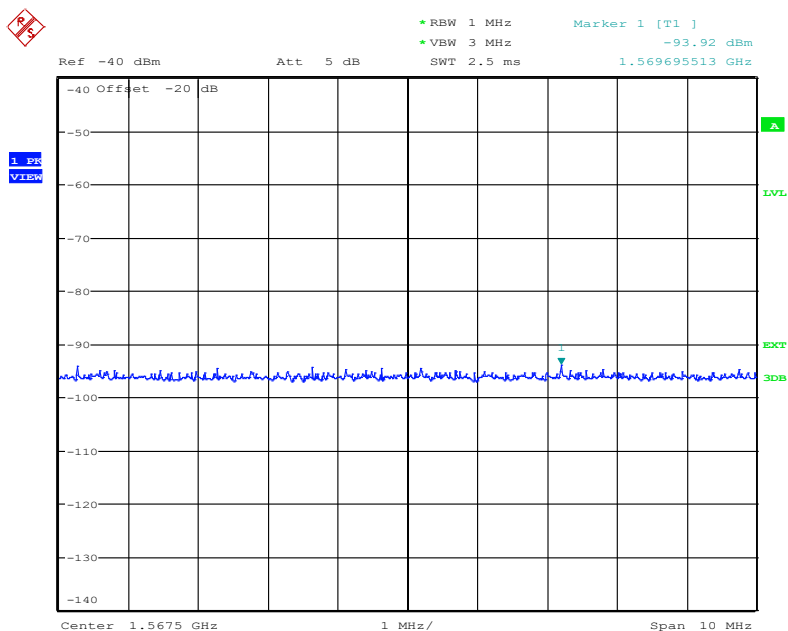
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Figure 5



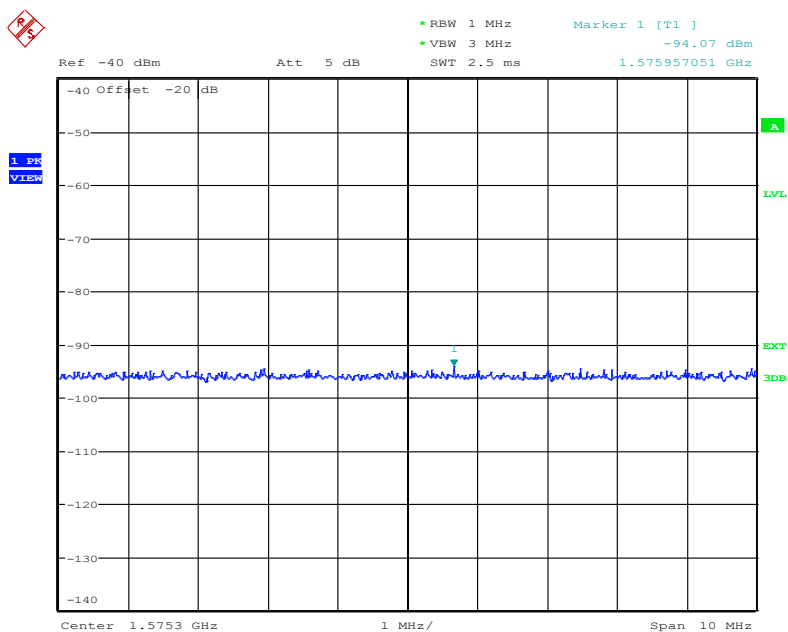
Date: 21.JUL.2022 11:12:32

Figure 6



Date: 21.JUL.2022 10:12:15

Figure 7



Date: 21.JUL.2022 10:17:18

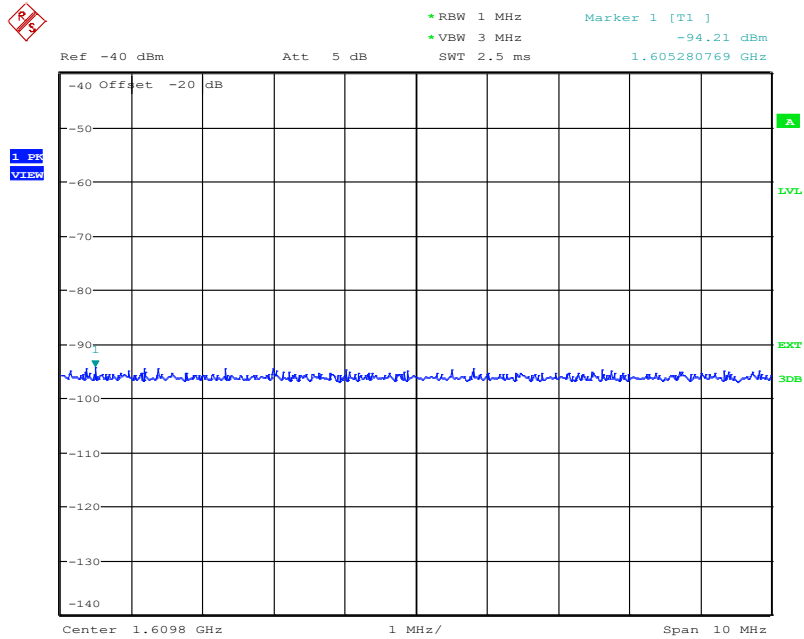
Figure 8



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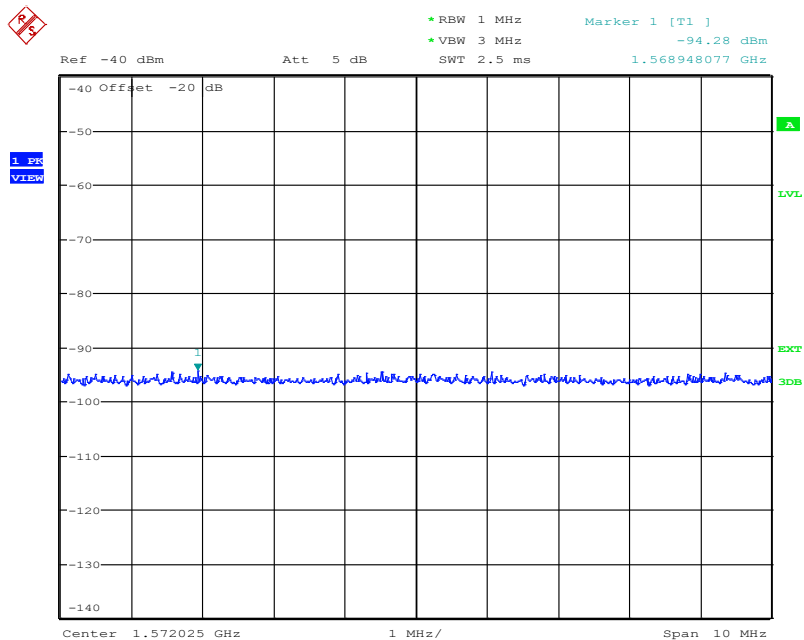
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Date: 21.JUL.2022 10:19:41

Figure 9



Date: 21.JUL.2022 10:22:34

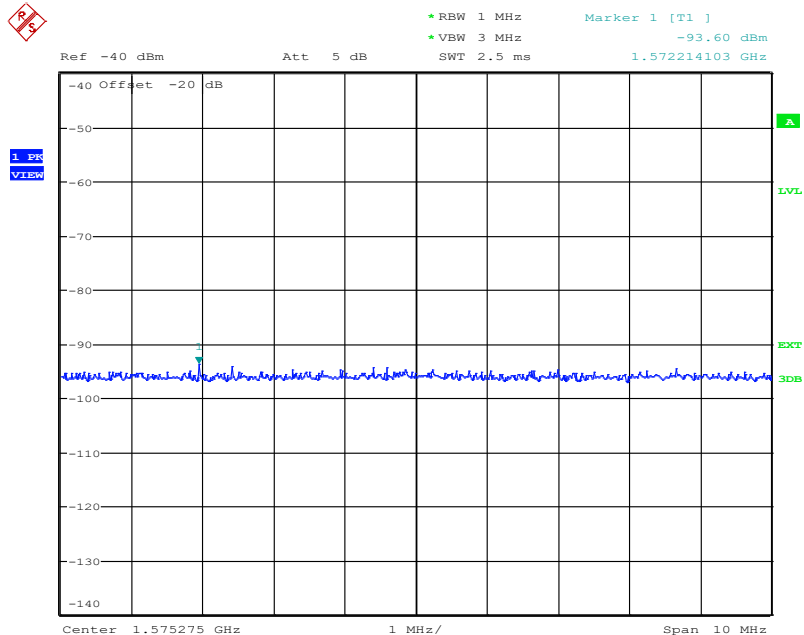
Figure 10



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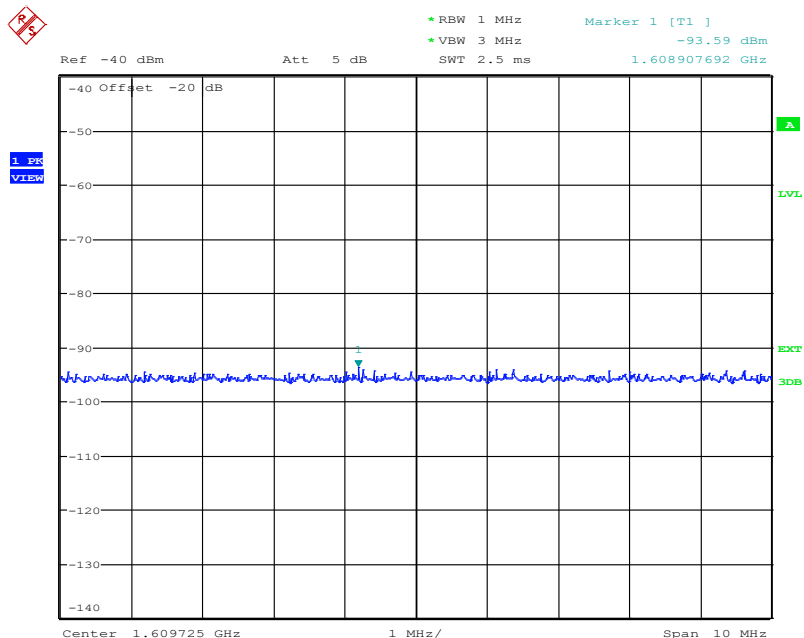
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Date: 21.JUL.2022 10:25:41

Figure 11



Date: 21.JUL.2022 10:29:44

Figure 12



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If you have any questions, concerns, or need any other information please contact us.

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Sincerely,

A handwritten signature in blue ink that reads 'Steve McIntosh'. The signature is fluid and cursive, with the first and last names being more prominent.

Steve McIntosh
Engineering Manager