



30 December 2002

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046

IDEN TEC SOLUTIONS, INC.
Suite 102, 1860 Dayton Street
Kelowna, British Columbia
Canada V1Y 7W6

Tel: (250) 860-6567
Fax: (250) 860-6541

SUBJECT: i-PORT III Modifications for FCC Class-B Compliance

To Whom It May Concern:

The following modifications were done during pre-scan to comply with FCC Class-B Section 15.109, "Unintentional Radiated Emissions in RX Mode"

Each step of modification had minimal success; some attempts actually retuned the peak signal to another frequency.

Every test determined that the emissions were radiating down the cables, i.e. the cables were acting as an antenna

- Ferrite Beads on unshielded CAT-5 LAN and DC Supply reduced emissions by approximately – 3dB.
- The DC was grounded to the chassis, reducing the emissions by another 2-3dB

Several modifications to the grounding of the RF portion of the Circuitry were done.

- Unused pins of CAT-5 Ethernet connector were grounded to the RJ-45 Shielded case
- Unused pins of RS-232 DB-9 Serial connector were grounded to the DB-9 Shielded case
- The case of the RJ-45 and the DB-9 connectors were grounded to the –DC supply and Chassis Ground.

No noticeable change was measured.

Using a Dremel polishing tool, the surface of the chassis itself was burnished to expose the aluminum case under the anodized surface.

Specifically:

- Inside edge of rear plate, edge of rear of chassis parameter, rear edges of back-side of the front plate, all inner surfaces where front plate contacts chassis, contact surface of hinged cover and top of chassis.
- The entire inside of the chassis, including the inside of all plates and cover were painted with Conductive Nickel shielding spray
- Conductive foam gasket material was placed along every surface that the front and rear plates contact the chassis and RF can be generated.
- Various gaskets were used, manufactured by Schlegel Systems Inc, specifically: E0813T, E3713T, E6313T, E1213T, EC313T, E5819G-0191

This reduced emissions by approximately -10dB on average but retuned the signal around 740MHz to well over the FCC limit.

A 916.5 MHz spike was noticed. It can be turned off but an 868.35 MHz signal appears.

This is the TX Carrier signal, which should be off during RX only

- Firmware and software modifications were written by the Identec Engineers to turn this off during RX mode.
- Software Version 3.20, Firmware Version 3.70

This modification only affected the fundamental TX carrier frequency in RX mode.

A low 0.3dB quasi-peak signal remained over the FCC limit at approximately 814MHz. The level of emissions could be increased / decreased significantly by moving any cable by a little as 1”

Further Modifications.

- All openings within the case, including the area around the conduit feed through were burnished to the metal
- Copper tape was installed over every opening ensuring that it also made contact with the exposed metal in at least one area.
- The i-PORT III was installed in the case such that it was completely isolated from the NEMA enclosure.
- The NEMA enclosure is a HOFFMAN ASE12X12X4
- Power Supply is inside the enclosure

Note that the I/O lines will NOT be used; any reference to them will be removed from the User Manual, as well, the RS-232 is not used outside of engineering professional representative's initial setup.

***Modifications completed as at 20-Dec-2002 and modification statement prepared by
Merv Flahr, CTech.***

***Senior RF Technologist
Identec Solutions, Inc.***

Yours truly,



Merv Flahr, CTech.
Senior RF Tech.

IDENTEC SOLUTIONS, INC.

Email: mflahr@identecsolutions.com