1 TEST REPORT

1.1 System test configuration

1.1.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it). Both mode, SOS mode (ARVA emitting at 457 KHz) and rescue mode (reception), have been tested during pre-scan evaluation; The ARVA 9000 in emission mode has been identified as the worst case, consequently, all test results contained in this report are from the ARVA 9000 set in SOS mode.
The worst case position of the ARVA 9000 has been found in horizontal position, as shown on pictures of the setup.

1.1.2 EUT Exercise software

The software used during testing is the one which is the one normally loaded in the product, and cannot be configured. The ARVA9000 is just set ON in emission mode.

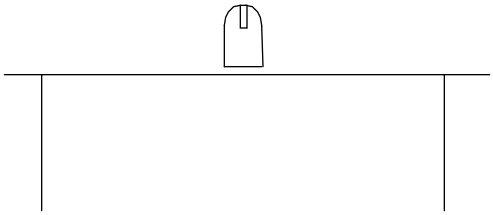
1.1.3 Special accessories

No special accessories were necessary to perform the test. The ARVA9000 is automatically switch ON, when strap is clipped on.

1.1.4 Equipment modifications

No equipment modification has been necessary during testing to achieve compliance to FCC Part15, Subpart C levels. The unit tested was a production unit.

1.1.5 Configuration of tested system



The EUT is set on the table in horizontal position, and turned On in emission mode.

1.2 Conducted emission data

As the ARVA9000 is powered with interna l batteries, no conducted emission test has been performed.

1.3 Radiated emission data

1.3.1 Test Procedure

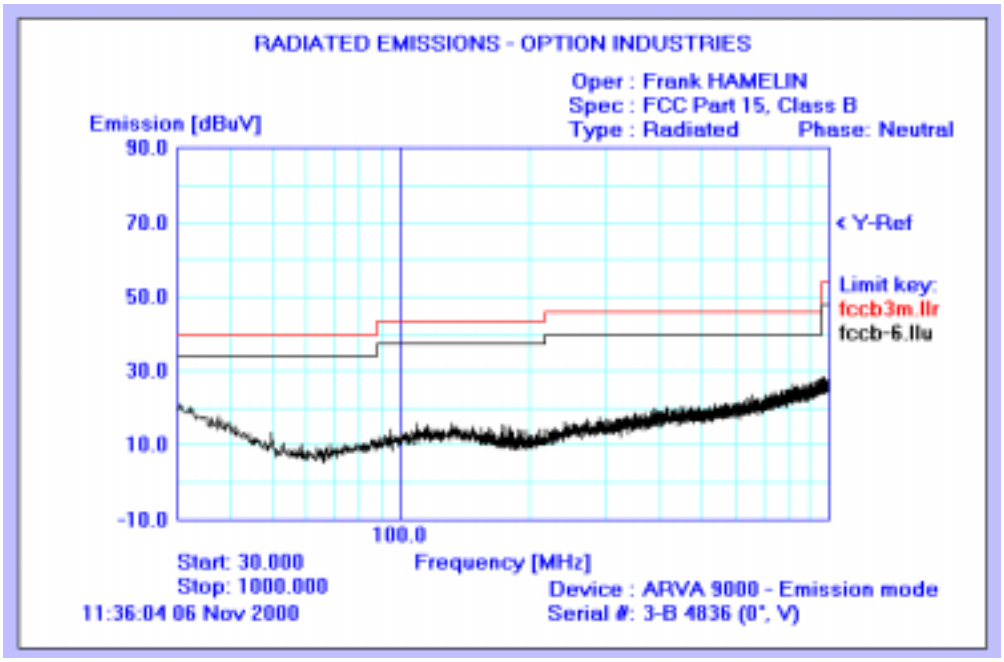
The product has been tested according to ANSI C63.4-1992 and FCC PART15, Subpart C.
The product has been tested with 4 new alkaline AAA/LR03batteries, at a distance of 10 meters from the antenna and compared to the FCC PART15, Subpart C limits. Measurement bandwidth was 120 KHz from 30 MHz to 1 GHz, and 9KHz below 30 MHz. Requirements of 15.209 have been observed.
Above 30MHz, antenna height search was performed from 1m to 4m for both horizontal and vertical polarization. Continuous linear turntable azimuth search was performed with 360 degrees range.
Below 30MHz, a rod antenna has been used, according provisions of ANSI C63.4 (measurements distance is 10 meters and then extrapolated).
The ARVA9000 has been moved in different positions in order to maximized emission. A summary of the worst case emissions found is shown on the following page.

Test Equipment: HP-8574A E.M.I Receiver
HP-8568B Analyzer + HP-85650 Quasi-Peak adapter + HP-85685A RF Preselector.
EMCO 3104C Biconical Antenna & EMCO 3146 Log Periodic Antenna
EMCO-1050, 6 meters height antenna mast & EMCO-1060, 3 meters diameter Turntable.
HP-8591EM Spectrum analyser
CHASE CBL6111A Antenna, 30-1000MHz
AILTECH STODDART 94607-1, Active Rod Antenna
ElectroMetrics Model RVR-30M, Passive Rod Antenna

1.3.2 Radiated emission data (30-1000MHz)

Final result 30-1000 MHz

Graph example - 30-1000MHz (3 meters measurements in full anechoic chamber)

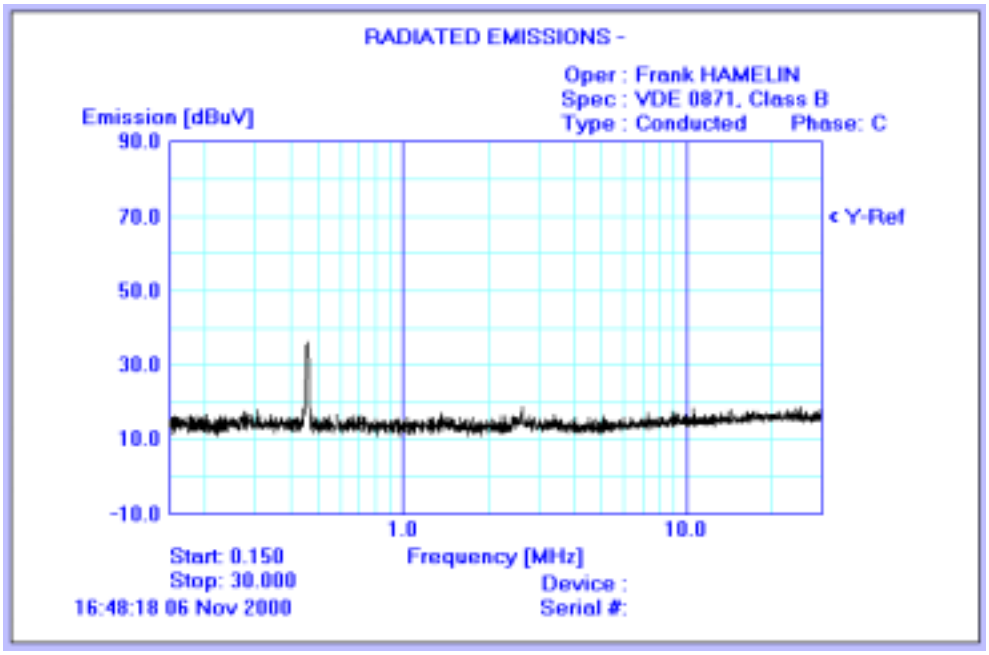


Due to the low levels measured at 3 meters in full anechoic chamber, no measurements above 30MHz has been performed on the open site.

1.3.3 Radiated emission data (below 30 MHz)

Final result below 30 MHz

Graph abstract – below 30 MHz (3 meters measurements in full anechoic chamber)



Final result below 30 MHz measured on open site at 10 meters:
Due to the low levels measured at 3 meters in full anechoic chamber, only the fundamental frequency has been performed on the open site.

Frequency (MHz)	Average Limit (dBµV/m)	Average (dBµV/m)	Average-Limit (dB)	Angle (deg)	Pol	Tot Corr (dB)
457 KHz	44.4	35.2	-9.2	70	V	20.5

1.3.4 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follow :

FS = RA + AF + CF – AG

Where FS = Field Strength
RA = Receiver Amplitude
AF = Antenna Factor
CF = Cable Factor
AG = Amplifier Gain

Assume a receiver reading of 52.5dBµV is obtained. The antenna factor of 7.4 and a cable factor of 1.1 is added. The amplifier gain of 29dB is subtracted, giving a field strength of 32 dBµV/m.

FS = 52.5 + 7.4 + 1.1 – 29 = 32 dBµV/m

The 32 dBµV/m value can be mathematically converted to its corresponding level in µV/m.

Level in µV/m = Common Antilogarithm [(32dBµV/m)/20] = 39.8 µV/m.