RF Exposure Technical Brief

for

Angle Indication System for Underground Drills

ADS-410 System - Display and Sensor Unit

FCC ID: 2AODQ1DK207A8 (Display) / IC: 23492-18DKJ1032A1(Display), HVIN: J-2

and

FCC ID: 2AODQ1DK207S4 (Sensor) / IC: 23492-18DKJ1032S4(Sensor), HVIN: J-4

EUT Description and Key relevant technical data:

The identified Display and Sensor units contain the same radio portion as described below and are operated together as a system.

Maximun RF Output Power, conducted, peak; 10.33 dBm (*)
(*measured as documented in test report #31860384 of TUV Rheinland of NA, filed with this application)

Maximum Antenna Gain: 1.2 dBi;

Operating Frequency: 915MHz; Modulation: FSK; Occupied Bandwidth: 772kHz;

Operational conditions with regard to human exposure to RF: fix/mobile, >20cm distance from human body (details see user guide exhibit filed with this application);

The purpose of this RF Exposure Technical Brief is to show that the above identified and described equipment is either excluded from RF exposure routine evaluation or meets the related limits as specified in FCC parts §2.1091, §1.1307, §1.1310 and ISED RSS-102 issue 5, respectively.

FCC Compliance:

The Plane-wave equivalent Power Density limit according to table 1 in FCC part §1.1310 for a transmitter operating at 915 MHz is 915/1500 = 0.61 mW/cm2

The calculated Plane-wave equivalent Power Density with the above given max output power and gain, for 20 cm distance (d), is (P x G) / (4 x pi x d^2) = 0.003 mW/cm2 (P x G is 14 mW)

The equipment is categorically excluded from routine environmental evaluation but is also clearly meeting the related power density limit specified in the given FCC rule parts.

ISED Compliance:

According to ISED RSS-102, section 2.5.2 the Exemption Limits for Routine Evaluation for the described device is $1.31 \times 10^{-2} f^{0.6834}$ W e.i.r.p.

For f = 915MHz this results in 1.38W.

With the determined e.i.r.p. of 14 mW the equipment is clearly exempted from routine evaluation acc. to RSS-102.

For the Content:		
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