To whom it may concern

Subject: RF exposure analysis for the equipment **NBT RSE** (FCC ID: **T8GB173**; IC: **6434A-B173**)

The device **NBT RSE** (FCC ID: **T8GB173**; IC: **6434A-B173**) is designed to be installed in and used in mobile exposure conditions.

The antennas used for this device must be installed to provide a separation distance of at least 20 cm from all the persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

MPE exposure limits

The table below is excerpted from Table 1B of 47 CFR 1.1310 titled Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure:

Frequency Range (MHz)	Power density (mW/cm^2)	Averaging time (minutes)
300 – 1500	f (MHz) /1500	30
1500 – 100.000	1,0	30

The table below is excerpted from RSS-102, Issue 4, 4.2, titled "RF Limits for Devices used by the General Public":

Frequency Range (MHz)	Power density (W/m^2)	Averaging time (minutes)
300 – 1500	f (MHz) /150	6
1500 – 100.000	10	6

As all the operating frequencies of this device are higher than 1500 MHz, the applicable maximum permissive exposure is: 1 mW/cm^2.

Using the equation $S = \frac{PG}{4\pi R^2}$ to calculate the exposure to electromagnetic fields

where: S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Compliance with FCC and IC maximum permissive exposure limits is demonstrated based on the following calculations:

Measured conducted output power (please refer to test reports)	Maximum antenna gain calculation
Kleer1: 3,3 dBm Kleer2: 3,6 dBm	Type of antenna: integrated SMD antenna Antenna model: SMD antenna Gain (without cable): 4,1 dBi

Frequency band (MHz)	Mode	Frequency Range (MHz)	Conducted output power (dBm)	Conducted output power (mW)	Antenna gain (dBi)	Antenna gain (numerical)	Duty cycle (%)	Evaluation distance (cm)	Power density (mW/cm^2)	FCC/IC MPE limit (mW/cm^2)	MPE RATIO
	Kleer1	2403-2478	3,3	2,138	4,1	6,128	100	20	0,0026	1,000	0,0026
	Kleer2	2403-2478	3,6	2,290	4,1	6,128	100	20	0,0028	1,000	0,0028

Signed on behalf of **Harman Becker Automotive Systems GmbH** in **Karlsbad** on **October 20th, 2014.**

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