



Certification Exhibit

**VGBM4700 FCC ID: SDBVGBM4700
VXU3600 FCC ID: KCHVXU3600**

FCC Rule Part: 47 CFR Part 2.1091

TÜV SÜD Project Number: 72157713

Manufacturer: Sensus USA, Inc.
Model: VGBM4700 / VXU3600

RF Exposure

General Information:

Applicant: Sensus USA, Inc.
 Device Category: Mobile
 Environment: General Population/Uncontrolled Exposure

The VGBM4700 is an updated transceiver to the VXU transceiver system. The VGBM4700 and VXU3600 are separate collocated devices. Both systems can transmit simultaneously.

Technical Information:

	VGBM4700	VXU3600
Antenna Type	External	External
Antenna Gain	5.15dBi Overall Antenna Assembly Gain: 3.2dBi*	2.2dBi
Max Conducted Power	37.4dBm; 5495.41mW	41.3dBm; 13489.62mW
Max System ERP	38.45 dBm; 6998.42mW	41.35dBm; 13645.83mW
Max System EIRP	40.6dBm; 11481.54mW	43.5dBm; 22387.21mW

* Overall antenna assembly gain based on specified cable loss provided by manufacturer.

MPE Calculation

The Power Density (mW/cm²) is calculated as follows:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = power density (in appropriate units, e.g. mW/cm²)

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)

Table 1: MPE Calculation (Including Collocated Devices)

Transmit Frequency (MHz)	Radio Power (dBm)	Power Density Limit (mW/Cm ²)	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain (mW eq.)	Distance (cm)	Power Density (mW/cm ²)	Radio
930.5	37.4	0.62	5495.41	3.2	2.089	66	0.210	A
952.8375	41.3	0.64	13489.63	2.2	1.660	66	0.409	B

Summation of MPE ratios – Simultaneous Transmissions

This device contains multiple transmitters which can operate simultaneously; therefore the maximum RF exposure is determined by the summation of MPE ratios. The limit is such that the summation of MPE ratios is ≤ 1.0.

Table 3: Summation of MPE Ratios

	Scenario 1
Radio A (VGBM4700)	X
Radio B (VXU3600)	X
Radio A MPE Ratio	0.338124894
Radio B MPE Ratio	0.64383515
MPE Ratio Summation:	0.981960044