



RF Exposure Report

(Part 0: SAR Char Evaluation)

FCC ID : U4G-SGVNRNA
Equipment : Mobile Computer/Barcode Reader
Brand Name : Datalogic
Model Name : SGVNRNA
Applicant : Datalogic S.r.l.
Via San Vitalino 13, 40012 Lippo di
Calderara di Reno (BO) – Italy
Standard : FCC 47 CFR Part 2 (2.1093)

We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Approved by: Cona Huang / Deputy Manager

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1. Introduction

The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of SAR_design_target, below the predefined time-averaged power limit for each characterized technology and band.

Smart Transmit allows the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit. Below table shows Plimit EFS settings and maximum tune up output power Pmax configured for this EUT for various transmit conditions (Device State Index DSI).

<Terminologies in this report>

Plimit	The time-averaged RF power which corresponds to SAR_design_target.
Pmax	Maximum target power level
SAR_design_target:	The design target for SAR compliance. It should be less than regulatory power density limit to account for all device design related uncertainties.
SAR char	Plimit for all the technologies/bands for all applicable DSI

<SAR design target and uncertainty>

The detail SAR design target relate to each exposure conditions pls refer to operation description

Exposure Condition	Trigger Condition	SAR_design_target (W/kg)	Device Uncertainty (dB)
Head	Receiver	1g SAR 0.953 W/kg	1 dB
Hotspot	Hotspot	1g SAR 0.874 W/kg	1 dB
Body-Worn	NA	1g SAR 0.953 W/kg	1 dB
Product Specific	NA	10g SAR 2.383 W/kg	1 dB

To account for total uncertainty, SAR_design_target should be determined as:

$$SAR_design_target < SAR_{regulatory_limit} \times 10^{\frac{-total\ uncertainty}{10}}$$



<SAR Characterization>

SAR char must be generated to cover all radio configurations and usage scenarios that the wireless device supports for operating at 6 GHz or below. It will then be used as input for Smart Transmit to control and manage RF exposure for $f < 6$ GHz.

<P_{limit} for supported technologies and bands (P_{limit} in EFS file)>

1. *Pmax is used for RF tune up procedure. The maximum allowed output power is equal to Pmax + 1dB uncertainty.
2. **All Plimit power levels entered in the Table correspond to average power levels after accounting for duty cycle in the case TDD modulation schemes (for e.g., GSM & LTE TDD & NR TDD).
3. The max allowed output power is the Plimit + 1dB device uncertainty, and if Plimit is higher than Pmax, the device output power will be Pmax instead.
4. The device support ULMIMO on n48/77/78 ant 6+7, as below table the Pmax and Plimit is single chain output power.

Band	Duty	Antenna	Head (DSI=2)	Body Worn / Extremity (DSI=0)	Hotspot (DSI=1)	Pmax*
GSM850 1 Tx slot**	12.50%	0	37.9	26.0	25.0	24.0
GPRS 1 Tx slot**	12.50%	0	37.9	26.0	25.0	24.0
GPRS 2 Tx slots**	25.00%	0	37.9	26.0	25.0	26.0
GPRS 3 Tx slots**	37.50%	0	37.9	26.0	25.0	27.7
GPRS 4 Tx slots**	50.00%	0	37.9	26.0	25.0	28.5
EDGE 1 Tx slot**	12.50%	0	37.9	26.0	25.0	17.0
EDGE 2 Tx slots**	25.00%	0	37.9	26.0	25.0	19.5
EDGE 3 Tx slots**	37.50%	0	37.9	26.0	25.0	21.2
EDGE 4 Tx slots**	50.00%	0	37.9	26.0	25.0	22.0
GSM1900 1 Tx slot**	12.50%	1	34.8	28.9	26.6	21.0
GPRS 1 Tx slot**	12.50%	1	34.8	28.9	26.6	21.0
GPRS 2 Tx slots**	25.00%	1	34.8	28.9	26.6	23.5
GPRS 3 Tx slots**	37.50%	1	34.8	28.9	26.6	24.7
GPRS 4 Tx slots**	50.00%	1	34.8	28.9	26.6	26.0
EDGE 1 Tx slot**	12.50%	1	34.8	28.9	26.6	17.0
EDGE 2 Tx slots**	25.00%	1	34.8	28.9	26.6	19.5
EDGE 3 Tx slots**	37.50%	1	34.8	28.9	26.6	21.2
EDGE 4 Tx slots**	50.00%	1	34.8	28.9	26.6	22.0
WCDMA II	100.00%	1	33.5	29.9	25.3	24.0
WCDMA IV	100.00%	1	30.5	29.3	26.5	24.0
WCDMA V	100.00%	0	27.8	26.8	24.0	24.0
LTE B2/25	100.00%	1	32.0	28.3	24.9	23.5
LTE B4/66	100.00%	1	28.1	27.8	25.7	23.5
LTE B5/26	100.00%	0	27.7	26.6	24.6	23.5
LTE B7	100.00%	1	39.5	28.8	24.9	23.5
LTE B12/B17	100.00%	0	28.6	26.7	26.2	23.5
LTE B13	100.00%	0	28.1	27.1	25.2	23.5
LTE B14	100.00%	0	28.5	27.2	25.1	23.5
LTE B30	100.00%	1	32.6	31.7	27.8	23.5
LTE B41/38_PC3**	63.30%	1	40.9	27.3	25.4	21.5
LTE B48_PC3**	63.30%	7	28.6	28.6	25.1	20.5
n7	100.00%	1	41.3	30.1	27.8	24.0
n12	100.00%	0	29.2	27.5	27.1	24.0
n13	100.00%	0	28.4	28.1	25.4	24.0
n14	100.00%	0	29.6	28.7	25.7	24.0
n25/n2	100.00%	1	33.0	29.4	24.6	24.0
n26/n5	100.00%	0	29.2	29.4	26.5	24.0
n30	100.00%	1	33.3	32.9	27.5	24.0
n66	100.00%	1	29.4	30.1	26.4	24.0
n38/41_PC3	100.00%	1	39.7	29.7	26.5	24.0



n48_PC3	100.00%	7	29.7	28.4	26.2	22.5
n48_PC3	100.00%	4	29.7	27.9	25.7	22.5
n48_PC3	100.00%	5	28.8	30.9	25.8	22.5
⁽⁴⁾ n48_PC3	100.00%	6+7	27.8	26.0	23.9	19.5
n77/n78_PC3	100.00%	7	28.6	27.2	25.5	23.0
n77/n78_PC2**	50.00%	7	28.8	28.4	25.7	23.0
n77/n78_PC3	100.00%	4	26.8	29.1	26.1	22.9
n77/n78_PC2**	50.00%	4	26.9	29.2	26.2	22.9
n77/n78_PC3	100.00%	5	27.9	28.8	25.9	22.9
n77/n78_PC2**	50.00%	5	28.1	28.9	26.0	22.9
⁽⁴⁾ n77/n78_PC3	100.00%	6+7	32.0	28.3	26.1	20.0
⁽⁴⁾ n77/n78_PC2**	50.00%	6+7	35.5	30.4	26.9	20.0