

RF Exposure for simultaneous transmission statement

FCC Report No. : **15096569S-A**
 Applicant : **OM Digital Solutions Corporation**
 Type of Equipment : **Wireless LAN/Bluetooth Module**
 Model No. : **S0123WIFI-PCA**
 FCC ID : **YSKW123**

OM Digital Solutions Corporation declares that Model: S0123WIFI-PCA complies with FCC radiation exposure requirement specified in the FCC Rule 2.1093 (for portable use).

S0123WIFI-PCA installed Digital Camera: IM036 can be used together with a Low power 2.4GHz band accessories and transmitted simultaneously.

Low power 2.4 GHz band accessories complied with separation distance requirement between the user and/or bystander and the antenna and/or radiating element of the device that is less than or equal to 5 mm based on exclusion thresholds calculation of KDB 447498 D04, section E1 of Appendix E: SAR Estimations for Simultaneous Transmission Test Exemptions).

Note: E.1 Estimated SAR - When an antenna qualifies for test exemption in single transmitter/antenna mode, its actual SAR value may not be available, because it was not required to be measured. In this case, the SAR contribution of that antenna to simultaneous transmission must be estimated relative to the SAR or MPE based exemption criteria for the applicable terms in the equation of § 1.1307(b)(3)(ii)(B) (see also Appendix C), by multiplying the corresponding ratio by the SAR limit of 0.4 W/kg for 1-g SAR. This is referred to as estimated SAR.

For instance, a given antenna may qualify for a SAR-based exemption according to Section B.4, with $P_{\text{ant}} < P_{\text{th}}$, where P_{ant} is maximum time-averaged power or effective radiated power (ERP), whichever is greater, and P_{th} is defined in Formula (B.2). Then, per the preceding paragraph, the estimated SAR is computed as $\text{SAR}_{\text{est}} = 0.4 \times P_{\text{ant}} / P_{\text{th}} \text{ [W/kg]}$. (*. The original multiplier of 1.6 W/kg was corrected to 0.4 W/kg due to error.)

When SAR is estimated, the peak SAR location is assumed to be at the feed-point or geometric center of the antenna, whichever provides a smaller antenna separation distance, and this location must be clearly identified in test reports. The estimated SAR is used only to determine simultaneous transmission SAR test exemption; it shall not be reported as the standalone SAR.

The estimate SAR1g for accessory was calculated as below.

Accessory description	Model number	RF FCC ID	Tx Mode	Frequency [MHz]	Max Power conducted		Antenna gain [dB]	ERP		D [mm]	Estimate SAR1g [W/kg] /judge of SAR test exempt
					[dBm]	[mW]		[dBm]	[mW]		
Wireless Remote Controller	IM028 (RM-WR1)	HSW2832	BT LE	2402-2480	3.35	2 (2.16)	-2.5	-1.30	1 (0.74)	<5	0.27 (0.4*2/3) / SAR test Exempt
Electronic Flash	IM011 (FL-700WR)	V24271	ZigBee	2405-2480	2.24	2 (1.67)	0	0.09	1 (1.02)	<5	0.27 (0.4*2/3) / SAR test Exempt
Wireless Radiowave Commander	IM012	V24271	ZigBee	2405-2480	2.24	2 (1.67)	0	0.09	1 (1.02)	<5	0.27 (0.4*2/3) / SAR test Exempt

* D: Antenna separation distance. It is the distance from an antenna to the outer surface of the device which human may touch.

Table: Example Power Thresholds [mW] for SAR1g (Bold & Shaded: listed in Table B.2 of KDB 447498 D04 (v01))

Frequency [MHz]	Distance [mm]																																													
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
1900	3	5	6	8	10	12	14	17	20	23	26	29	32	36	40	44	48	52	56	61	66	71	76	81	86	92	98	104	110	116	122	129	136	142	149	157	164	171	179	187	195	203	211	219	228	236
2402	3	4	5	7	9	10	12	15	17	20	22	25	28	32	35	39	42	46	50	55	59	64	68	73	78	84	89	94	100	106	112	118	124	131	138	144	151	158	165	173	180	188	196	204	212	220
2450	3	4	5	7	8	10	12	15	17	19	22	25	28	31	35	38	42	46	50	54	59	63	68	73	78	83	88	94	99	105	111	117	124	130	137	143	150	157	164	172	179	187	195	203	211	219
2462	3	4	5	7	8	10	12	15	17	19	22	25	28	31	35	38	42	46	50	54	58	63	68	73	78	83	88	94	99	105	111	117	123	130	136	143	150	157	164	171	179	187	194	202	210	219
2480	3	4	5	7	8	10	12	14	17	19	22	25	28	31	35	38	42	46	50	54	58	63	67	72	77	82	88	93	99	105	111	117	123	129	136	143	150	157	164	171	179	186	194	202	210	218
3600	2	3	4	5	6	8	10	11	13	16	18	20	23	26	29	32	35	38	42	45	49	53	57	62	66	71	75	80	85	91	96	102	107	113	119	125	132	138	145	151	158	165	173	180	187	195

The simultaneous transmission SAR value was calculated as below.

No.	Scenario	SAR1g [W/kg]				Total SAR1g	Limit	Judge
		IM036 (*1)	WRC (*2)	Flash	IM012			
1	IM036+Wireless Remote Controller(WRC)	0.49 W/kg	0.27 W/kg	N/A	N/A	0.76 W/kg	1.6 W/kg	Pass
2	IM036+Electronic Flash (Flash)+WRC	0.49 W/kg	0.27 W/kg	0.27 W/kg	- (*3)	1.03 W/kg	1.6 W/kg	Pass
3	IM036+IM012+Flash+WRC	0.49 W/kg	0.27 W/kg	- (*4)	0.27 W/kg	1.03 W/kg	1.6 W/kg	Pass

*1. Worst reported SAR1g of IM036 digital camera which was determined the SAR test report (15096569S-A).

*2. The remote control (IM028) is not attached to the camera, but may be used near the camera, thus the SAR1g in simultaneous transmission with the camera was verified.

*3. Only one of either flash (IM011) or IM012 can be attached to the camera. When a flash (IM011) is attached, verification of SAR1g for simultaneous transmission with the camera and flash (IM011) is required.

*4. Only one of either flash (IM011) or IM012 can be attached to the camera. When the IM012 is attached, multiple separately placed flashes can be controlled, but since the camera and flashes are more than 20 cm apart, only SAR1g verification for simultaneous transmission with camera and IM012 is required.

Result: Simultaneous transmission condition with accessories also meets the limit as < 1.6 W/kg.

Date simultaneous transmission evaluation: July 16, 2024

Evaluated by:


Hiroshi Naka (Engineer)