

Environmental evaluation and exposure limit according to FCC CFR 47part 1, §1.1307, §1.1310

The transceiver SSRM 3.65GHz is classified as fixed (pole mounted) and limited for use in “Cisco 1000 series” products, i.e. more specifically in the outdoor platform “Cisco 1240”.
 The “Cisco 1240” engineering analysis as per FCC section 2.1093 was included in Application for certification under FCC ID:LDKALMT 0556 (Supplementary Appendix to Report EDCS#1104807). Three modules

FCC ID:LDKALMT 0556
 FCC ID:N7NMC8705
 FCC ID:SK9ITR9002

were evaluated for Maximum Permissible Exposure compliance.

The calculation with additional transmitter “SSRM 3.65GHz” for end-use multi-radio is provided below. The simultaneous transmission of 4 above mentioned transmitters is evaluated.

Limit for power density for general population/uncontrolled exposure is 1 mW/cm² for 1500 -100000 MHz frequency range.

The power density $P \text{ (mW/cm}^2\text{)} = P_T / 4\pi r^2$, where

P_T is the transmitted power, which is equal to the peak transmitter output power plus maximum antenna gain.

19.6 dBm is the SSRM peak output power,
 0.38 – duty cycle
 19.5 dBi – antenna gain.

Table of estimated safe distance calculation

Tx	Frequency, MHz	Peak Tx power		Antenna gain, dBi	Duty cycle	Power density, mW/cm ²	Limit, mW/cm ²	% of Std
		dBm	mW					
Tx1*	824-849	32.8	1905.5	2.4	0.5	0.33	0.56	0.58
Tx2	3650-3700	19.6	91.2	19.5	0.38	0.62	1.0	0.62
Tx3*	902-928	28.0	628.1	2.9	1.0	0.24	0.601	0.40
Tx4*	2412-2462	11.3	13.48	4.0	1.0	0.01	1.0	0.01
Total								1.61

Note: Recommended MPE distance is 20 cm when all antennas are within 20 cm of each other.

*- data used from Supplementary Appendix to Report EDCS#1104807, FCC ID:LDKALMT0556.

Total % of standard: Tx1 + Tx2 + Tx3 + Tx4 = 1.61

Distance (estimated) = 20 x $\sqrt{1.61}$ = 25.4 cm.

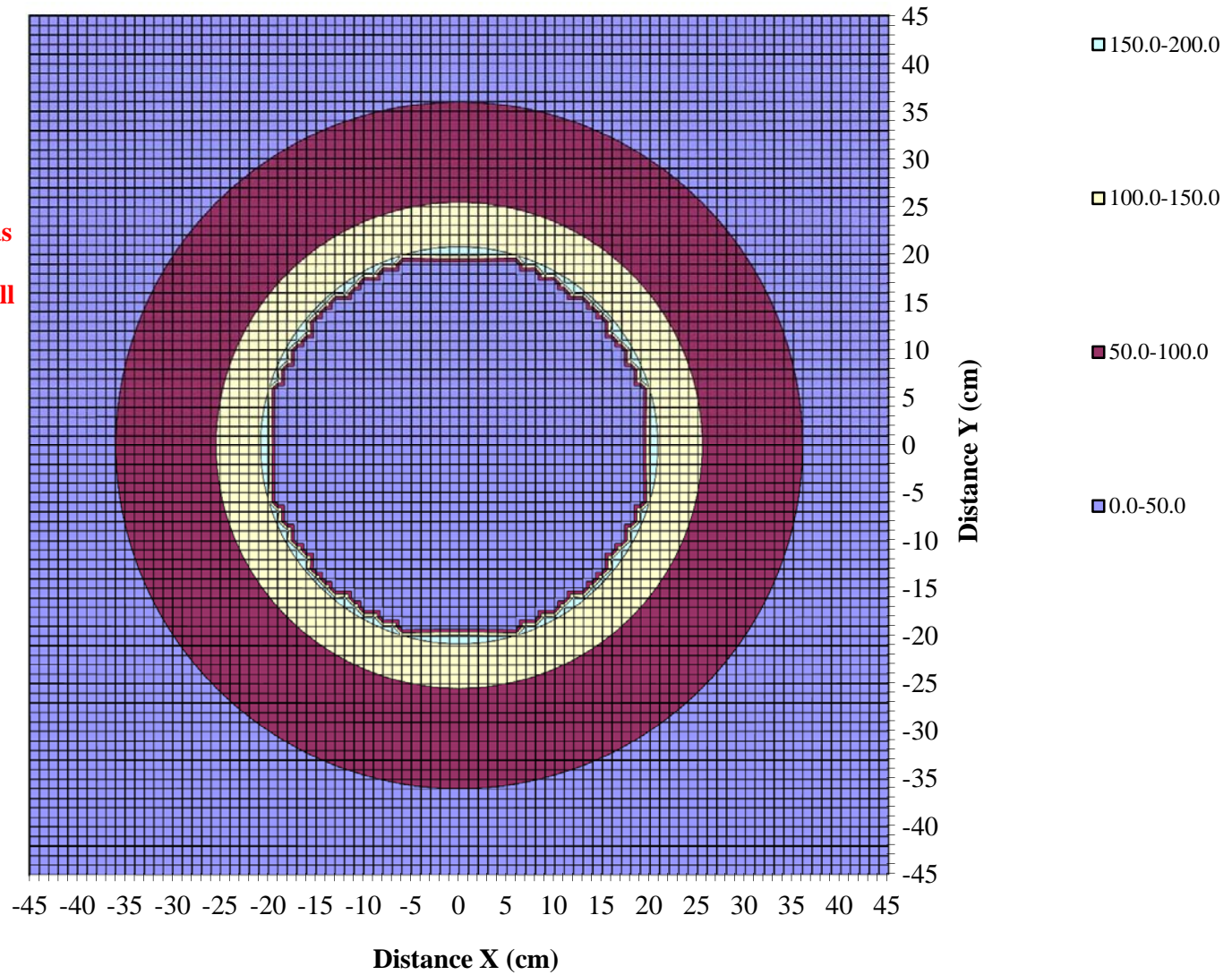
The user manual contains warning about safe distance.

Below is % MPE contour map and Table prepared in accordance with FCC recommendations worksheet

<http://transition.fcc.gov/oet/ea/presentations/files/oct05/MPE-mobile.xls>

% MPE Contour

Note: The 0% contour surrounding the antennas identifies a 20 cm perimeter surrounding all active antennas



Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099																																																																																																																																																																																																																																																																																	
Population	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500