

**United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
SPECIAL TEMPORARY AUTHORIZATION**

EXPERIMENTAL

(Nature of Service)

WK9XVW

(Call Sign)

XT FX MO

(Class of Station)

1192-EX-ST-2017

(File Number)

NAME 5D Robotics, Inc.

This Special Temporary Authorization is granted upon the express condition that it may be terminated by the Commission at any time without advance notice or hearing if in its discretion the need for such action arises. Nothing contained herein shall be construed as a finding by the Commission that the authority herein granted is or will be in the public interest beyond the express terms hereof.

This Special Temporary Authorization shall not vest in the grantee any right to operate the station nor any right in the use of the frequencies designated in the authorization beyond the term hereof, nor in any other manner than authorized herein. Neither the authorization nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934. This authorization is subject to the right of use of control the Government of the United States conferred by Section 706 of the Communications Act of 1934.

Special Temporary Authority is hereby granted to operate the apparatus described below:

Purpose Of Operation:

The purpose of the operation is development and testing of UWB radio equipment on our campus and on the neighboring street.

Station Locations

- (1) Carlsbad (SAN DIEGO), CA - NL 33-07-57; WL 117-16-43
- (2) Carlsbad, CA - NL 33-07-56; WL 117-16-42
- (3) Carlsbad, CA - NL 33-07-56; WL 117-16-44
- (4) Carlsbad, CA - NL 33-07-57; WL 117-16-41
- (5) Carlsbad, CA - NL 33-07-57; WL 117-16-42
- (6) Carlsbad, CA - NL 33-07-57; WL 117-16-44
- (7) Carlsbad, CA - NL 33-07-57; WL 117-16-45
- (8) Carlsbad, CA - NL 33-07-56; WL 117-16-46
- (9) Carlsbad, CA - NL 33-07-58; WL 117-16-41
- (10) Carlsbad, CA - NL 33-07-58; WL 117-16-42
- (11) Carlsbad, CA - NL 33-07-58; WL 117-16-41
- (12) Carlsbad, CA - NL 33-07-58; WL 117-16-44
- (13) Carlsbad, CA - NL 33-07-57; WL 117-16-46
- (14) Carlsbad, CA - NL 33-07-58; WL 117-16-41
- (15) Carlsbad, CA - NL 33-07-58; WL 117-16-44
- (16) Carlsbad, CA - NL 33-07-58; WL 117-16-43
- (17) Carlsbad, CA - NL 33-07-58; WL 117-16-47
- (18) Carlsbad (SAN DIEGO), CA - NL 33-07-53; WL 117-16-52
- (19) Carlsbad (SAN DIEGO), CA - NL 33-07-54; WL 117-16-57
- (20) Carlsbad (SAN DIEGO), CA - NL 33-08-00; WL 117-17-04

This authorization effective September 02, 2017 and
will expire 3:00 A.M. EST March 02, 2018

**FEDERAL
COMMUNICATIONS
COMMISSION**



Station Locations

- (21) Carlsbad (SAN DIEGO), CA - NL 33-08-03; WL 117-16-55
- (22) Carlsbad (SAN DIEGO), CA - NL 33-08-03; WL 117-16-51
- (23) Carlsbad (SAN DIEGO), CA - NL 33-08-02; WL 117-16-46
- (24) Carlsbad (SAN DIEGO), CA - NL 33-08-03; WL 117-16-41
- (25) Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-16-37
- (26) Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-16-33
- (27) Carlsbad (SAN DIEGO), CA - NL 33-08-02; WL 117-16-29
- (28) Carlsbad (SAN DIEGO), CA - NL 33-08-00; WL 117-16-26
- (29) Carlsbad (SAN DIEGO), CA - NL 33-07-56; WL 117-16-29
- (30) Carlsbad, CA - NL 33-07-55; WL 117-16-35
- (31) Carlsbad (SAN DIEGO), CA - NL 33-07-55; WL 117-16-42
- (32) Carlsbad (SAN DIEGO), CA - NL 33-07-54; WL 117-16-47
- (33) Carlsbad (SAN DIEGO), CA - NL 33-07-54; WL 117-17-00
- (34) Carlsbad (SAN DIEGO), CA - NL 33-07-53; WL 117-16-55
- (35) Carlsbad (SAN DIEGO), CA - NL 33-07-53; WL 117-16-49
- (36) Carlsbad (SAN DIEGO), CA - NL 33-07-54; WL 117-16-44
- (37) Carlsbad (SAN DIEGO), CA - NL 33-07-55; WL 117-16-38
- (38) Carlsbad (SAN DIEGO), CA - NL 33-07-55; WL 117-16-31
- (39) Carlsbad (SAN DIEGO), CA - NL 33-07-57; WL 117-16-27
- (40) Carlsbad (SAN DIEGO), CA - NL 33-08-01; WL 117-16-26
- (41) Carlsbad (SAN DIEGO), CA - NL 33-07-59; WL 117-16-24
- (42) Carlsbad (SAN DIEGO), CA - NL 33-07-59; WL 117-16-20
- (43) Carlsbad (SAN DIEGO), CA - NL 33-08-00; WL 117-16-21
- (44) Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-16-31
- (45) Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-16-31
- (46) Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-16-39
- (47) Carlsbad (SAN DIEGO), CA - NL 33-08-03; WL 117-16-44
- (48) Carlsbad (SAN DIEGO), CA - NL 33-08-57; WL 117-16-48
- (49) Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-16-53
- (50) Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-16-58
- (51) Carlsbad (SAN DIEGO), CA - NL 33-08-08; WL 117-17-17
- (52) Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-17-19
- (53) Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-17-19
- (54) Carlsbad (SAN DIEGO), CA - NL 33-08-08; WL 117-17-10
- (55) Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-17-06
- (56) Carlsbad (SAN DIEGO), CA - NL 33-08-03; WL 117-17-04
- (57) Carlsbad (SAN DIEGO), CA - NL 33-07-58; WL 117-17-04
- (58) Carlsbad (SAN DIEGO), CA - NL 33-08-06; WL 117-17-14
- (59) Carlsbad, CA - NL 33-08-08; WL 117-17-10
- (60) Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-17-12
- (61) Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-17-14
- (62) Carlsbad (SAN DIEGO), CA - NL 33-08-07; WL 117-17-14
- (63) MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43
- (64) MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43

Station Locations

- (65) MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43
- (66) MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43
- (67) MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43
- (68) MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43
- (69) MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43
- (70) MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43
- (71) MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43
- (72) MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-07-57; WL 117-16-43

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-56; WL 117-16-42

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-56; WL 117-16-44

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad, CA - NL 33-07-57; WL 117-16-41

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-57; WL 117-16-42

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-57; WL 117-16-44

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-57; WL 117-16-45

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad, CA - NL 33-07-56; WL 117-16-46

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-58; WL 117-16-41

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-58; WL 117-16-42

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-58; WL 117-16-41

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad, CA - NL 33-07-58; WL 117-16-44

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-57; WL 117-16-46

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-58; WL 117-16-41

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-58; WL 117-16-44

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad, CA - NL 33-07-58; WL 117-16-43

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-58; WL 117-16-47

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-53; WL 117-16-52

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-54; WL 117-16-57

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-08-00; WL 117-17-04

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-03; WL 117-16-55

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 uW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-03; WL 117-16-51

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-02; WL 117-16-46

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-08-03; WL 117-16-41

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-16-37

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-16-33

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-02; WL 117-16-29

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-08-00; WL 117-16-26

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-56; WL 117-16-29

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-07-55; WL 117-16-35

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-55; WL 117-16-42

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-07-54; WL 117-16-47

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-54; WL 117-17-00

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-53; WL 117-16-55

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-53; WL 117-16-49

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-07-54; WL 117-16-44

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 uW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-55; WL 117-16-38

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-55; WL 117-16-31

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-57; WL 117-16-27

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-08-01; WL 117-16-26

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-59; WL 117-16-24

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-59; WL 117-16-20

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 uW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-00; WL 117-16-21

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-16-31

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-16-31

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-16-39

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-03; WL 117-16-44

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-08-57; WL 117-16-48

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-16-53

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-16-58

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-08; WL 117-17-17

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-17-19

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-17-19

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-08; WL 117-17-10

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-04; WL 117-17-06

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-08-03; WL 117-17-04

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-07-58; WL 117-17-04

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-06; WL 117-17-14

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad, CA - NL 33-08-08; WL 117-17-10

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-17-12

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-05; WL 117-17-14

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

Carlsbad (SAN DIEGO), CA - NL 33-08-07; WL 117-17-14

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	FX	2G00M1D	1 mW (ERP)	0.5 %

MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	MO	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	MO	2G00M1D	1 mW (ERP)	0.5 %

MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	MO	2G00M1D	1 mW (ERP)	0.5 %

MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	MO	2G00M1D	1 mW (ERP)	0.5 %

MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	MO	2G00M1D	1 mW (ERP)	0.5 %

Frequency Information

MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	MO	2G00M1D	1 mW (ERP)	0.5 %

MOBILE: On Rutherford Road and around campus, Carlsbad, CA, within 1 km, centered around NL 33-07-57; WL 117-16-43

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3.1-5.3 GHz	MO	2G00M1D	1 mW (ERP)	0.5 %

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Frequency Information

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3.1-5.3 GHz	MO	2G00M1D	1 mW (ERP)	0.5 %

Special Conditions:

- (1) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (2) Licensee should be aware that other stations may be licensed on these frequencies and if any interference occurs, the licensee of this authorization will be subject to immediate shut down.
- (3) Maintain operation separation from the grandfathered earth stations as defined in Part 90, Subpart Z, or coordinate an agreement with the grandfathered earth station licensees.
- (4) Ensure that the operation will not cause harmful interference to any existing registered stations in the 3650-3700 MHz band, and notify the registered users in the proposed geographic area.
- (5) The applicant must coordinate with the affected Fixed Microwave Service licensees.
- (6) Operations overlapping the 3700-4200 MHz, the emission bandwidth must be 2 GHz wide or the experimental stations power flux-density (pfd) at FSS earth stations must not exceed -154.5 dB (W/ (m² · 4 kHz)).
- (7) Operations are on a non-interference basis (NIB) and shall not cause harmful interference to, and shall not claim protection from, interference caused to it by any other lawfully operating station and it shall cease transmission(s) immediately upon notice of such interference and notify the FCC in writing.
- (8) Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending or future experimental satellite earth station applications.
- (9) Stop buzzer contacts are Treggon Owens at cell phone (760) 473-8289, email: towens@5drobotics.com; Brian Aker, at cell phone (858) 784-1034, email: baker@5drobotics.com
- (10) No automatic renewal for operations in the 3700-4200 MHz band of this authorization.
- (11) 5D Robotics must ensure the power output is below the levels for UWB operation per FCC Part 15 rules.
- (12) 5D Robotics must not utilize the band 4990 to 5000 MHz. This band is allocated for Radio Telescope and Passive Space Sensor operations. Protection is covered under US246.

Special Conditions:

- (13) All customers participating in the experiment shall be informed that this operation is for experimental purposes only and can be cancelled at any time.
- (14) Prior to operation, experimental licensee, must notify licensees of FSS earth stations operating the 3700-4200 MHz within 10-kilometer radius of the locations from which experimental operations will occur. Experimental licensee, must also provide such notification to the National Spectrum Managers Association frequency coordinators by email. (see http://wireless.fcc.gov/services/index.htm?job=licensing_1&id=microwave). The notice must include the name and contact information of the stop buzzer personnel that will be available to cease operations in the event of reported interference. The notification should include the testing parameters (specific location(s), antenna gain(s), antenna pattern, antenna height(s), antenna orientation, eirp density) and day and times of each test. Consult the IBFS database to identify licensed earth station in the band 3700-4200 MHz band.
- (15) Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending or future experimental satellite earth station applications.
- (16) Stop buzzer contact is Rachel Reinhardt at (442) 325--0002, email: Rachel.reinhardt@5drobotics.com
- (17) 5D Robotics, Inc. should have no expectations of automatic approval in this band in future submissions.
- (18) 5D Robotics, Inc. must notch out 3550 - 3650 MHz. This location falls within the Exclusion Zone defined in Fast Track Report (NTIA Technical Report TR-15-517: 3.5 GHz Exclusion Zone Analyses and Methodology).