

**United States of America**  
**FEDERAL COMMUNICATIONS COMMISSION**  
**EXPERIMENTAL**  
**RADIO STATION CONSTRUCTION PERMIT**  
**AND LICENSE**

EXPERIMENTAL

(Nature of Service)

XT      FX MO

(Class of Station)

WI2XNS

(Call Sign)

0228-EX-CM-2017

(File Number)

NAME Google LLC

Subject to the provisions of the Communications Act of 1934, subsequent acts, and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions and requirements set forth in this license, the licensee hereof is hereby authorized to use and operate the radio transmitting facilities hereinafter described for radio communications in accordance with the program of experimentation described by the licensee in its application for license.

Operation: In accordance with Sec. 5.3(a & j) of the Commission's Rules

Station Locations

- (1) Phoenix, AZ - NL 33-26-54; WL 112-04-27
- (2) Atwater, CA - NL 37-22-14; WL 120-34-29; MOBILE: Transportable FX, within 30 km
- (3) Los Angeles, CA - NL 33-59-43; WL 118-28-35; MOBILE: Transportable FX, within 10 km
- (4) Menlo Park, CA - NL 37-27-29; WL 122-10-06; MOBILE: Transportable FX, within 22 km, centered around NL 37-27-29; WL 122-10-06
- (5) San Bruno, CA - NL 37-37-42; WL 122-25-36; MOBILE: Transportable FX, within 10 km
- (6) San Francisco, CA - NL 37-45-26; WL 122-26-32; MOBILE: Transportable FX, within 7 km
- (7) San Jose, CA - NL 37-20-14; WL 121-52-58; MOBILE: Transportable FX, within 10 km
- (8) Boulder, CO - NL 40-00-27; WL 105-15-43; MOBILE: Transportable FX, within 30 km
- (9) Tampa, FL - NL 27-56-59; WL 82-27-26; MOBILE: Transportable FX, within 30 km
- (10) Atlanta, GA - NL 33-54-42; WL 84-21-26; MOBILE: Transportable FX, within 30 km
- (11) Chicago, IL - NL 41-52-41; WL 87-37-48; MOBILE: Transportable FX, within 30 km
- (12) Des Moines, IA - NL 41-35-36; WL 93-39-51; MOBILE: Transportable FX, within 30 km
- (13) Kansas City, KS - NL 39-07-34; WL 94-49-34; MOBILE: Transportable FX, within 5 km
- (14) Omaha, NE - NL 41-15-28; WL 95-56-08; MOBILE: Transportable FX, within 30 km
- (15) Las Vegas, NV - NL 36-11-12; WL 115-08-23; MOBILE: Transportable FX, within 30 km
- (16) New York, NY - NL 40-45-00; WL 73-59-37; MOBILE: Transportable FX, within 30 km
- (17) Raleigh, NC - NL 35-47-44; WL 78-30-55; MOBILE: Transportable FX, within 30 km
- (18) Oklahoma City, OK - NL 35-28-08; WL 97-30-53; MOBILE: Transportable FX, within 30 km
- (19) Portland, OR - NL 45-31-26; WL 122-40-10; MOBILE: Transportable FX, within 30 km
- (20) Austin, TX - NL 30-13-00; WL 97-45-04; MOBILE: Transportable FX, within 30 km
- (21) Provo, UT - NL 40-14-29; WL 111-42-44; MOBILE: Transportable FX, within 30 km

This authorization effective October 25, 2017 and  
will expire 3:00 A.M. EST December 01, 2018

**FEDERAL**  
**COMMUNICATIONS**  
**COMMISSION**



Station Locations

(22) Blacksburg, VA - NL 37-13-40; WL 80-25-20; MOBILE: Transportable FX, within 30 km

(23) Reston, VA - NL 38-57-31; WL 77-21-33; MOBILE: Transportable FX, within 40 km

## Frequency Information

Phoenix, AZ - NL 33-26-54; WL 112-04-27

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N                                  | 98 W (ERP)       |                           |

## Frequency Information

Phoenix, AZ - NL 33-26-54; WL 112-04-27

| Frequency     | Station Class | Emission Designator           | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|-------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                       | 31 kW (ERP)      |                           |

Atwater, CA - NL 37-22-14; WL 120-34-29; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W                       | 611 W (ERP)      |                           |

## Frequency Information

Atwater, CA - NL 37-22-14; WL 120-34-29; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0G7D<br>20M0GXW                       | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

Los Angeles, CA - NL 33-59-43; WL 118-28-35; MOBILE: Transportable FX, within 10 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D            | 1833 W (ERP)     |                           |

## Frequency Information

Los Angeles, CA - NL 33-59-43; WL 118-28-35; MOBILE: Transportable FX, within 10 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 60M0GXW                                  | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

## Frequency Information

Menlo Park, CA - NL 37-27-29; WL 122-10-06; MOBILE: Transportable FX, within 22 km, centered around NL 37-27-29; WL 1

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N            | 98 W (ERP)       |                           |

## Frequency Information

Menlo Park, CA - NL 37-27-29; WL 122-10-06; MOBILE: Transportable FX, within 22 km, centered around NL 37-27-29; WL 1

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0Q7N             | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N             | 31 kW (ERP)      |                           |

San Bruno, CA - NL 37-37-42; WL 122-25-36; MOBILE: Transportable FX, within 10 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D            | 611 W (ERP)      |                           |

## Frequency Information

San Bruno, CA - NL 37-37-42; WL 122-25-36; MOBILE: Transportable FX, within 10 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0GXW                                  | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

San Francisco, CA - NL 37-45-26; WL 122-26-32; MOBILE: Transportable FX, within 7 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D            | 1833 W (ERP)     |                           |

## Frequency Information

San Francisco, CA - NL 37-45-26; WL 122-26-32; MOBILE: Transportable FX, within 7 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 60M0GXW                                  | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

## Frequency Information

San Jose, CA - NL 37-20-14; WL 121-52-58; MOBILE: Transportable FX, within 10 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N            | 98 W (ERP)       |                           |

## Frequency Information

San Jose, CA - NL 37-20-14; WL 121-52-58; MOBILE: Transportable FX, within 10 km

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0Q7N             | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N             | 31 kW (ERP)      |                           |

Boulder, CO - NL 40-00-27; WL 105-15-43; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D            | 611 W (ERP)      |                           |

## Frequency Information

Boulder, CO - NL 40-00-27; WL 105-15-43; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0GXW                                  | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

Tampa, FL - NL 27-56-59; WL 82-27-26; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D            | 1833 W (ERP)     |                           |

## Frequency Information

Tampa, FL - NL 27-56-59; WL 82-27-26; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 60M0GXW                                  | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

## Frequency Information

Atlanta, GA - NL 33-54-42; WL 84-21-26; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N            | 98 W (ERP)       |                           |

## Frequency Information

Atlanta, GA - NL 33-54-42; WL 84-21-26; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0Q7N             | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N             | 31 kW (ERP)      |                           |

Chicago, IL - NL 41-52-41; WL 87-37-48; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D            | 611 W (ERP)      |                           |

## Frequency Information

Chicago, IL - NL 41-52-41; WL 87-37-48; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0GXW                                  | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

Des Moines, IA - NL 41-35-36; WL 93-39-51; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D            | 1833 W (ERP)     |                           |

## Frequency Information

Des Moines, IA - NL 41-35-36; WL 93-39-51; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 60M0GXW                                  | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

## Frequency Information

Kansas City, KS - NL 39-07-34; WL 94-49-34; MOBILE: Transportable FX, within 5 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N            | 98 W (ERP)       |                           |

## Frequency Information

Kansas City, KS - NL 39-07-34; WL 94-49-34; MOBILE: Transportable FX, within 5 km

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0Q7N             | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N             | 31 kW (ERP)      |                           |

Omaha, NE - NL 41-15-28; WL 95-56-08; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D            | 611 W (ERP)      |                           |

## Frequency Information

Omaha, NE - NL 41-15-28; WL 95-56-08; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0GXW                                  | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

Las Vegas, NV - NL 36-11-12; WL 115-08-23; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D            | 1833 W (ERP)     |                           |

## Frequency Information

Las Vegas, NV - NL 36-11-12; WL 115-08-23; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 60M0GXW                                  | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

## Frequency Information

New York, NY - NL 40-45-00; WL 73-59-37; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N            | 98 W (ERP)       |                           |

## Frequency Information

New York, NY - NL 40-45-00; WL 73-59-37; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0Q7N             | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N             | 31 kW (ERP)      |                           |

Raleigh, NC - NL 35-47-44; WL 78-30-55; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D            | 611 W (ERP)      |                           |

## Frequency Information

Raleigh, NC - NL 35-47-44; WL 78-30-55; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0GXW                                  | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

Oklahoma City, OK - NL 35-28-08; WL 97-30-53; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D            | 1833 W (ERP)     |                           |

## Frequency Information

Oklahoma City, OK - NL 35-28-08; WL 97-30-53; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 60M0GXW                                  | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

## Frequency Information

Portland, OR - NL 45-31-26; WL 122-40-10; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N            | 98 W (ERP)       |                           |

## Frequency Information

Portland, OR - NL 45-31-26; WL 122-40-10; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0Q7N             | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N             | 31 kW (ERP)      |                           |

Austin, TX - NL 30-13-00; WL 97-45-04; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D            | 611 W (ERP)      |                           |

## Frequency Information

Austin, TX - NL 30-13-00; WL 97-45-04; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0GXW                                  | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

Provo, UT - NL 40-14-29; WL 111-42-44; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D            | 1833 W (ERP)     |                           |

## Frequency Information

Provo, UT - NL 40-14-29; WL 111-42-44; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 60M0GXW                                  | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

## Frequency Information

Blacksburg, VA - NL 37-13-40; WL 80-25-20; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D<br>20M0GXW | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N            | 98 W (ERP)       |                           |

## Frequency Information

Blacksburg, VA - NL 37-13-40; WL 80-25-20; MOBILE: Transportable FX, within 30 km

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0Q7N             | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N             | 31 kW (ERP)      |                           |

Reston, VA - NL 38-57-31; WL 77-21-33; MOBILE: Transportable FX, within 40 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 80M0W7D<br>80M0F9W<br>80M0G7D<br>80M0GXW | 2444 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 60M0W7D<br>60M0F9W<br>60M0G7D<br>60M0GXW | 1833 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 40M0W7D<br>40M0F9W<br>40M0G7D<br>40M0GXW | 1222 W (ERP)     |                           |
| 3400-3800 MHz | FX            | 20M0W7D<br>20M0F9W<br>20M0G7D            | 611 W (ERP)      |                           |

## Frequency Information

Reston, VA - NL 38-57-31; WL 77-21-33; MOBILE: Transportable FX, within 40 km

| Frequency     | Station Class | Emission Designator                      | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|------------------------------------------|------------------|---------------------------|
| 3400-3800 MHz | FX            | 20M0GXW                                  | 611 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 10M0W7D<br>10M0F9W<br>10M0G7D<br>10M0GXW | 305 W (ERP)      |                           |
| 3400-3800 MHz | FX            | 2M00P0N<br>5M00Q7N<br>10M0Q7N<br>20M0Q7N | 98 W (ERP)       |                           |
| 3400-3800 MHz | FX            | 10H0N0N                                  | 31 kW (ERP)      |                           |

## 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) Prior to operation, licensee must coordinate with Part 25 stations authorized to operate in these frequency bands that are located within a within a 40 km radius of the transmitter.
- (4) Licensee shall maintain separation from the grandfathered earth stations as defined in Part 90, subpart Z, or coordinate an agreement with the grandfathered earth station licensees prior to operation in 3650-3700 MHz band.
- (5) Licensee shall ensure that the operations will not cause harmful interference to any existing registered stations in 3650-3700 MHz, and notify the registered users in the proposed areas prior to operation in 3650-3700 MHz band.
- (6) Google needs to notify participating researchers using the devices of circumstances under which interference may occur.

**Special Conditions:**

- (7) All of the experimental devices will be under the control of Google and they will either be retrieved by Google from the participants upon completion of the experiment or otherwise disabled upon completion of the experiment.
- (8) Google will maintain and manage a process or system that tracks the assignment of each device, its purpose of use, and will ensure that devices are recoverable from end users. Within 60 days upon completion of experiment or cancellation of license Google will recover all devices and provide a report to the FCC to this effect.
- (9) Operations are limited to frequencies below 3700 MHz.
- (10) At least 5 business days prior to operating, Google Inc. must notify licensees of earth stations operating in frequencies that overlap with the experimental operations and within 150 kilometers of the locations from which experimental operations will occur. Google Inc. 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](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 also include the testing parameters (location, antenna gain pattern, antenna height, antenna orientation, eirp density) and day and times of each test. Consult the IBFS database to identify licensed earth station in the 3625-3700 MHz band.