

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

EXPERIMENTAL

(Nature of Service)

XD      FX MO

(Class of Station)

WE2XNR

(Call Sign)

0021-EX-CM-2018

(File Number)

NAME Nokia Solutions and Networks US 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(i) of the Commission's Rules

Station Locations

- (1) Irving, TX - NL 32-53-36; WL 96-58-02; MOBILE: Nokia Building Facility, Irving, TX, within 1 km
- (2) Sunnyvale (SANTA CLARA), CA - NL 37-22-36; WL 122-02-07; MOBILE: , within 1 km
- (3) Mountain View (SANTA CLARA), CA - NL 37-23-20; WL 122-03-07; MOBILE: , within 2 km
- (4) Naperville (DU PAGE), IL - NL 41-48-44; WL 88-07-11; MOBILE: Nokia Facility, within 2 km, centered around NL 41-48-44; WL 88-07-11

Frequency Information

Irving, TX - NL 32-53-36; WL 96-58-02; MOBILE: Nokia Building Facility, Irving, TX, within 1 km

| Frequency   | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|-------------|---------------|---------------------|------------------|---------------------------|
| 699-716 MHz | MO            | 18M0W9W             | 251 mW (ERP)     |                           |
| 717-728 MHz | FX            | 10M0F9W<br>5M00D7W  | 251 mW (ERP)     |                           |
| 729-756 MHz | FX            | 18M0W9W             | 251 mW (ERP)     |                           |

This authorization effective February 05, 2018 and  
will expire 3:00 A.M. EST August 01, 2018

**FEDERAL  
COMMUNICATIONS  
COMMISSION**



## Frequency Information

Irving, TX - NL 32-53-36; WL 96-58-02; MOBILE: Nokia Building Facility, Irving, TX, within 1 km

| Frequency   | Station Class | Emission Designator           | Authorized Power | Frequency Tolerance (+/-) |
|-------------|---------------|-------------------------------|------------------|---------------------------|
| 729-756 MHz | FX            | 20M0F9W<br>10M0W7W<br>5M00D7W | 251 mW (ERP)     |                           |
| 758-768 MHz | FX            | 10M0W7W<br>10M0F9W<br>5M00D7W | 251 mW (ERP)     |                           |
| 777-787 MHz | MO            | 10M0W9W                       | 251 mW (ERP)     |                           |
| 788-798 MHz | MO            | 10M0W9W                       | 251 mW (ERP)     |                           |
| 791-821 MHz | MO            | 30M0W9W                       | 251 mW (ERP)     |                           |
| 824-849 MHz | MO            | 25M0W9W                       | 251 mW (ERP)     |                           |
| 832-862 MHz | FX            | 30M0W9W                       | 251 mW (ERP)     |                           |
| 859-894 MHz | FX            | 25M0W9W<br>20M0F9W<br>5M00D7W | 251 mW (ERP)     |                           |
| 896-902 MHz |               | 40M0W9W                       | 251 mW (ERP)     |                           |

## Frequency Information

Irving, TX - NL 32-53-36; WL 96-58-02; MOBILE: Nokia Building Facility, Irving, TX, within 1 km

| Frequency         | Station Class | Emission Designator           | Authorized Power | Frequency Tolerance (+/-) |
|-------------------|---------------|-------------------------------|------------------|---------------------------|
| 1525-1559 MHz     | FX            | 30M0W9W                       | 251 mW (ERP)     |                           |
| 1626.5-1660.5 MHz | MO            | 30M0W9W                       | 251 mW (ERP)     |                           |
| 1710-1755 MHz     | MO            | 40M0W9W                       | 60 W (ERP)       |                           |
| 1805-1880 MHz     | FX            | 20M0F9W                       | 251 mW (ERP)     |                           |
| 1850-1910 MHz     | MO            | 40M0W9W                       | 251 mW (ERP)     |                           |
| 1910-1930 MHz     | FX            | 20M0W9W                       | 251 mW (ERP)     |                           |
| 1910-1930 MHz     | MO            | 20M0W9W                       | 251 mW (ERP)     |                           |
| 1920-1980 MHz     | MO            | 40M0W9W                       | 251 mW (ERP)     |                           |
| 1930-1995 MHz     | FX            | 40M0W9W<br>20M0F9W<br>5M00D7W | 251 mW (ERP)     |                           |
| 2000-2020 MHz     | MO            | 20M0W9W                       | 251 mW (ERP)     |                           |

## Frequency Information

Irving, TX - NL 32-53-36; WL 96-58-02; MOBILE: Nokia Building Facility, Irving, TX, within 1 km

| Frequency     | Station Class | Emission Designator           | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|-------------------------------|------------------|---------------------------|
| 2110-2170 MHz | FX            | 40M0W9W<br>20M0F9W<br>5M00D7W | 251 mW (ERP)     |                           |
| 2110-2155 MHz | FX            | 40M0W9W                       | 60 W (ERP)       |                           |
| 2180-2200 MHz | FX            | 20M0W9W                       | 251 mW (ERP)     |                           |
| 2350-2360 MHz | FX            | 10M0F9W<br>5M00D7W            | 251 mW (ERP)     |                           |
| 2500-2690 MHz | FX            | 40M0W9W<br>20M0F9W<br>5M00D7W | 251 mW (ERP)     |                           |
| 2500-2690 MHz | MO            | 40M0W9W<br>5M00D7W<br>20M0F9W | 251 mW (ERP)     |                           |
| 2500-2570 MHz | MO            | 40M0W9W                       | 251 mW (ERP)     |                           |
| 3400-3600 MHz | FX            | 40M0W9W                       | 7.5 mW (ERP)     |                           |

## Frequency Information

Irving, TX - NL 32-53-36; WL 96-58-02; MOBILE: Nokia Building Facility, Irving, TX, within 1 km

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 3400-3600 MHz | MO            | 40M0W9W             | 7.5 mW (ERP)     |                           |
| 3600-3800 MHz | FX            | 40M0W9W             | 251 mW (ERP)     |                           |

Sunnyvale (SANTA CLARA), CA - NL 37-22-36; WL 122-02-07; MOBILE: , within 1 km

| Frequency   | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|-------------|---------------|---------------------|------------------|---------------------------|
| 698-716 MHz | FX            | 10M0F9W             | 251 mW (ERP)     |                           |
| 728-746 MHz |               | 10M0F9W             | 251 mW (ERP)     |                           |
| 746-756 MHz | FX            | 10M0F8W             | 251 mW (ERP)     |                           |
| 758-768 MHz | FX            | 5M00F9W             | 251 mW (ERP)     |                           |
| 777-787 MHz | FX            | 10M0F9W             | 251 mW (ERP)     |                           |
| 788-798 MHz | FX            | 10M0F9W             | 251 mW (ERP)     |                           |
| 869-894 MHz | FX            | 248KG7W<br>5M00F9W  | 160 mW (ERP)     |                           |

## Frequency Information

Sunnyvale (SANTA CLARA), CA - NL 37-22-36; WL 122-02-07; MOBILE: , within 1 km

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 1710-1755 MHz | MO            | 5M00F9W             | 251 mW (ERP)     |                           |
| 1850-1910 MHz | MO            | 333KG7W<br>4M00F9W  | 251 mW (ERP)     |                           |
| 1920-1980 MHz | MO            | 5M00F9W             | 251 mW (ERP)     |                           |
| 1930-1990 MHz | FX            | 333KG7W<br>4M00F9W  | 160 mW (ERP)     |                           |
| 2110-2170 MHz | FX            | 5M00F9W             | 160 mW (ERP)     |                           |

Mountain View (SANTA CLARA), CA - NL 37-23-20; WL 122-03-07; MOBILE: , within 2 km

| Frequency   | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|-------------|---------------|---------------------|------------------|---------------------------|
| 699-716 MHz | MO            | 18M0W9W             | 251 mW (ERP)     |                           |
| 729-746 MHz | FX            | 18M0W9W             | 251 mW (ERP)     |                           |
| 746-756 MHz | FX            | 10M0W7W             | 251 mW (ERP)     |                           |

## Frequency Information

Mountain View (SANTA CLARA), CA - NL 37-23-20; WL 122-03-07; MOBILE: , within 2 km

| Frequency         | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|-------------------|---------------|---------------------|------------------|---------------------------|
| 758-768 MHz       | FX            | 10M0W7W             | 251 mW (ERP)     |                           |
| 777-787 MHz       | MO            | 10M0W9W             | 251 mW (ERP)     |                           |
| 788-798 MHz       | MO            | 10M0W9W             | 251 mW (ERP)     |                           |
| 791-821 MHz       | MO            | 30M0W9W             | 251 mW (ERP)     |                           |
| 824-849 MHz       | MO            | 25M0W9W             | 251 mW (ERP)     |                           |
| 832-862 MHz       | FX            | 30M0W9W             | 251 mW (ERP)     |                           |
| 869-894 MHz       | FX            | 25M0W9W             | 251 mW (ERP)     |                           |
| 1525-1559 MHz     | FX            | 30M0W9W             | 251 mW (ERP)     |                           |
| 1626.5-1660.5 MHz | MO            | 30M0W9W             | 251 mW (ERP)     |                           |
| 1710-1755 MHz     | MO            | 40M0W9W             | 251 mW (ERP)     |                           |

## Frequency Information

Mountain View (SANTA CLARA), CA - NL 37-23-20; WL 122-03-07; MOBILE: , within 2 km

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 1850-1910 MHz | MO            | 40M0W9W             | 251 mW (ERP)     |                           |
| 1910-1930 MHz | FX            | 20M0W9W             | 251 mW (ERP)     |                           |
| 1910-1930 MHz | MO            | 20M0W9W             | 251 mW (ERP)     |                           |
| 1920-1980 MHz | MO            | 40M0W9W             | 251 mW (ERP)     |                           |
| 1930-1990 MHz | FX            | 40M0W9W             | 251 mW (ERP)     |                           |
| 2000-2020 MHz | MO            | 20M0W9W             | 251 mW (ERP)     |                           |
| 2110-2170 MHz | FX            | 40M0W9W             | 251 mW (ERP)     |                           |
| 2110-2155 MHz | FX            | 40M0W9W             | 251 mW (ERP)     |                           |
| 2180-2200 MHz | FX            | 20M0W9W             | 251 mW (ERP)     |                           |
| 2500-2570 MHz | MO            | 40M0W9W             | 251 mW (ERP)     |                           |

## Frequency Information

Mountain View (SANTA CLARA), CA - NL 37-23-20; WL 122-03-07; MOBILE: , within 2 km

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 2570-2620 MHz | FX            | 40M0W9W             | 251 mW (ERP)     |                           |
| 2570-2620 MHz | MO            | 40M0W9W             | 251 mW (ERP)     |                           |
| 2620-2690 MHz | FX            | 40M0W9W             | 251 mW (ERP)     |                           |
| 3400-3600 MHz | FX            | 40M0W9W             | 7.5 mW (ERP)     |                           |
| 3400-3600 MHz | MO            | 40M0W9W             | 7.5 mW (ERP)     |                           |
| 3600-3800 MHz | FX            | 40M0W9W             | 251 mW (ERP)     |                           |

Naperville (DU PAGE), IL - NL 41-48-44; WL 88-07-11; MOBILE: Nokia Facility, within 2 km, centered around NL 41-48-44; W

| Frequency   | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|-------------|---------------|---------------------|------------------|---------------------------|
| 698-716 MHz | FX            | 10M0F9W             | 251 mW (ERP)     |                           |
| 728-746 MHz | FX            | 10M0F9W             | 251 mW (ERP)     |                           |
| 746-756 MHz | FX            | 10M0F9W             | 251 mW (ERP)     |                           |

## Frequency Information

Naperville (DU PAGE), IL - NL 41-48-44; WL 88-07-11; MOBILE: Nokia Facility, within 2 km, centered around NL 41-48-44; W

| Frequency     | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---------------|---------------|---------------------|------------------|---------------------------|
| 758-768 MHz   | FX            | 5M00F9W             | 251 mW (ERP)     |                           |
| 777-787 MHz   | MO            | 10M0F9W             | 251 mW (ERP)     |                           |
| 788-798 MHz   | FX            | 10M0F9W             | 251 mW (ERP)     |                           |
| 869-894 MHz   | FX            | 5M00F9W<br>248KG7W  | 160 mW (ERP)     |                           |
| 896-902 MHz   | FX            | 40M0W9W             | 252 mW (ERP)     |                           |
| 1710-1755 MHz | MO            | 5M00F9W             | 251 mW (ERP)     |                           |
| 1850-1910 MHz | MO            | 5M00F9W<br>333KG7W  | 160 mW (ERP)     |                           |
| 1920-1980 MHz | MO            | 5M00F9W             | 251 mW (ERP)     |                           |
| 2110-2170 MHz | FX            | 5M00F9W             | 251 mW (ERP)     |                           |

## Special Conditions:

- (1) Operation requires consent of affected Educational Broadband Service/Broadband Radio Service (EBS/BRS) licensees.

**Special Conditions:**

- (2) Operation is subject to prior coordination with the Associated Public Safety Communications Officers, Inc. (APCO); ATTN: Director of Frequency Coordination; 351 North Williamson Blvd.; Daytona Beach, FL 32114-1112; Telephone: (386) 322-2500.
- (3) Operation in the 1850-1910 or 1930-1990 MHz band requires prior frequency coordination with 2 GHz microwave users and consent of PCS licensees to avoid interference.
- (4) The station identification requirements of Section 5.115 of the Commission's Rules are waived.
- (5) Operation in the 1695-1780 MHz, 1915-1920 MHz, 1995-2020 MHz or 2110-2200 MHz band requires consent of local Advanced Wireless Service (AWS) licensee(s) to avoid interference.
- (6) Operation is subject to prior coordination with the local Society of Broadcast Engineers, Inc. (SBE) frequency coordinator. Consult the list at [http://freq.sbe.org/pdf\\_files/coordinators.pdf](http://freq.sbe.org/pdf_files/coordinators.pdf) to find the appropriate coordinator.
- (7) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (8) Operation in the 824-849 or 869-894 MHz band requires consent of local cellular licensee(s) to avoid interference.
- (9) 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.
- (10) Operation is subject to prior coordination with affected existing and future licensees in the 700 MHz bands.