Randall Nealy, 432 Durham Hall, Blacksburg, VA 24061,

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

| EXPERIMENTAL | WF2XRP |
|---|---|
| (Nature of Service) | (Call Sign) |
| XT FX MO | 0095-EX-RR-2013 |
| (Class of Station) | (File Number) |

NAME Virginia Tech Electrical and Computer Engineering

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) Blacksburg (MONTGOMERY), VA - NL 37-13-53; WL 80-25-21; MOBILE: Virginia Tech, Blacksburg, VA, within 0.1 km, centered around NL 37-13-53; WL 80-25-21

Frequency Information

Blacksburg (MONTGOMERY), VA - NL 37-13-53; WL 80-25-21; MOBILE: Virginia Tech, Blacksburg, VA, within 0.1 km, cente

| Frequency | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---|---|---|---|---|
| 138-144 MHz | FX | | 0.4 W (ERP) | |
| | | 25K0F3E | | |
| | | 25K0D1D | | |
| 138-144 MHz | MO | | 0.4 W (ERP) | |
| | | 25K0F3E | | |
| | | 25K0D1D | | |
| 150.5-156 MHz | FX | | 0.4 W (ERP) | |
| | | 25K0F3E | | |
| | | 25K0D1D | | |

This authorization effective April 01, 2013 and
will expire 3:00 A.M. EST April 01, 2015

**FEDERAL COMMUNICATIONS COMMISSION**

## Frequency Information

Blacksburg (MONTGOMERY), VA - NL 37-13-53; WL 80-25-21; MOBILE: Virginia Tech, Blacksburg, VA, within 0.1 km, cente

| Frequency | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---|---|---|---|---|
| 150.5-156 MHz | MO | 25K0F3E<br>25K0D1D | 0.4 W (ERP) | |
| 157.45-161.575 MHz | FX | 25K0F3E<br>25K0D1D | 0.4 W (ERP) | |
| 157.45-161.575 MHz | MO | 25K0F3E<br>25K0D1D | 0.4 W (ERP) | |
| 162.0375-174 MHz | FX | 25K0F3E<br>25K0D1D | 0.4 W (ERP) | |
| 162.0375-174 MHz | MO | 25K0F3E<br>25K0D1D | 0.4 W (ERP) | |
| 220-222 MHz | FX | 25K0F3E<br>25K0D1D | 0.4 W (ERP) | |
| 220-222 MHz | MO | 25K0F3E<br>25K0D1D | 0.4 W (ERP) | |
| 410-420 MHz | FX | 25K0F3E<br>25K0F1D<br>25K0D1D | 0.4 W (ERP) | |

## Frequency Information

Blacksburg (MONTGOMERY), VA - NL 37-13-53; WL 80-25-21; MOBILE: Virginia Tech, Blacksburg, VA, within 0.1 km, cente

| Frequency | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---|---|---|---|---|
| 410-420 MHz | MO | | 0.4 W (ERP) | |
| | | 25K0F3E | | |
| | | 25K0F1D | | |
| | | 25K0D1D | | |
| 450-470 MHz | FX | | 0.4 W (ERP) | |
| | | 25K0F3E | | |
| | | 25K0F1D | | |
| | | 25K0D1D | | |
| 450-470 MHz | MO | | 0.4 W (ERP) | |
| | | 25K0F3E | | |
| | | 25K0F1D | | |
| | | 25K0D1D | | |
| 470-512 MHz | FX | | 0.4 W (ERP) | |
| | | 25K0F3E | | |
| | | 25K0F1D | | |
| | | 25K0D1D | | |
| 470-512 MHz | MO | | 0.4 W (ERP) | |
| | | 25K0F3E | | |
| | | 25K0F1D | | |
| | | 25K0D1D | | |
| 764-862 MHz | FX | | 0.4 W (ERP) | |
| | | 25K0F3E | | |
| | | 25K0D1D | | |
| 764-862 MHz | MO | | 0.4 W (ERP) | |
| | | 25K0F3E | | |
| | | 25K0D1D | | |

## Frequency Information

Blacksburg (MONTGOMERY), VA - NL 37-13-53; WL 80-25-21; MOBILE: Virginia Tech, Blacksburg, VA, within 0.1 km, cente

| Frequency | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|---|---|---|---|---|
| 776-787 MHz | FX | 2M00DXD | 0.4 W (ERP) | |
| 776-787 MHz | MO | 2M00DXD | 0.4 W (ERP) | |
| 788-793 MHz | FX | 2M00DXD | 0.4 W (ERP) | |
| 788-793 MHz | MO | 2M00DXD | 0.4 W (ERP) | |
| 824-849 MHz | MO | 200KF1D | 0.4 W (ERP) | |
| 869-894 MHz | FX | 200KF1D | 0.4 W (ERP) | |
| 1850-1910 MHz | MO | 250KF1D | 0.4 W (ERP) | |
| 1930-1990 MHz | FX | 250KF1D | 0.4 W (ERP) | |
| 3400-3600 MHz | FX | 20M0DXD | 0.4 W (ERP) | |
| 3400-3600 MHz | MO | 20M0DXD | 0.4 W (ERP) | |

Special Conditions:

(1) Operation is subject to prior coordination with the Society of Broadcast Engineers, Inc. (SBE); ATTN: Executive Director; 9102 North Meridian Street, Suite 305; Indianapolis, IN 46260; telephone, (866) 632-4222; FAX, (317) 846-9120; e-mail, executivedir @ sbe.org; information, www.sbe.org.

(2) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.

(3) 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.

(4) Operation is subject to prior coordination with Fixed Services licensees in the immediate area of the experiment.

(5) Operation is NOTCH OUT of M162.025, Automatic Identification System (AIS-2), Band 162.0125-162.0375 MHz, 25KHz Channel.

(6) The designated point-of-contact to terminate transmissions if interference occurs is Randall Nealy at (540) 231-7280 or (540) 231-2958.

(7) The test must be done inside the VA Tech labs and on a non-interference basis.