

VHF UHF Propagation 50 - 450 MHz

Tropospheric Propagation: Most communications on VHF - UHF. Radio waves scatter, refract, reflect, and bend similar to mirage effect in sun light.

Most 40 watt FM stations are useful for 40 to 50+ miles on simplex. For dx a 50 watt station with 11 db gain yagi beam can go 90 to 200 miles on SSB and more on CW or WSJT* modes. We have found DSTAR simplex is near SSB in performance.

Auroral scatter: Not common in Utah.

Trans equatorial propagation: Not common in Utah.

Sporadic E: (Es) E layer develops small clouds of ionized particles which reflect radio waves.

50 Mhz up to 144 MHz, often on 28 and 21 MHz, May thru July and December.

Typical FM stations can enjoy skip on 52 Mhz at 40 watts to omni antenna. Dx with 100 watts

on SSB to a 3 element yagi will get you through well. 10 watts on FT8 will work.

Earth Moon Earth: (EME) Tremendous loss in path to moon and back even at perigee.

On 144 MHz it can be accomplished at correct timing for best prediction. Minimum station should be 100 watts or more to long yagi, short coax. preamp, using JT65, pointing at Moon rise - set for best gain, other station would need to be more powerful.

Meteor scatter: (Ms) Small meteors ionize trails in E layer and reflect signals. Short duration,

requires SSB, or MSK144 mode. Tx and Rx sequence 15 seconds. 100 watts to a small yagi can be very effective. Lots of fun and adventure during showers. UHF ?

F2 propagation: With High MUF, high sunspot activity, 50 Mhz can provide DX. Same Dx station as Es will do the job.

Contests: ARRL June, September, January. Exchange is calls and grid square. extra points for

UHF. Mountain top portable and grid rover mobile is popular.

Mountain topping: Portable operation using high elevation to enhance distance is popular. All

modes can be fun even FM handy talky.

Frequencies: calling and local beacons

6 meter: 50.125 SSB, CW.

6 meter beacon: 50.070 CW WA7X

6 meter: 50.313 FT8

6 meter: 52.525 FM

2 meter: 144.200 SSB, CW

2 meter beacon: 144.299 CW WA7X

2 meter: 144.175 FT8

2 meter: 146.520 FM

70 cm: 432.100 SSB, CW

70 cm beacon: 432.399 CW WA7X

70 cm: 446.000 FM

* WSJT X digital program, computer and interface to SSB transceiver needed