

Two New Ham Bands

by Wayne Estes W9AE

We already have *many* ham bands
over a *wide* range of frequencies.

Frequency Ranges

	<u>MHz</u>	<u>Ham Bands</u>
SHF	3000-30,000	3.3, 5, 10, and 24 GHz
UHF	300-3000	70cm, 33cm, 23cm, 13cm
VHF	30-300	6m, 2m, 1.25m
HF	3-30	80,60,40,30,20,17,15,12,10m
MF	0.3-3	160m

Frequency Ranges

	<u>MHz</u>	<u>Ham Bands</u>
SHF	3000-30,000	3.3, 5, 10, and 24 GHz
UHF	300-3000	70cm, 33cm, 23cm, 13cm
VHF	30-300	6m, 2m, 1.25m
HF	3-30	80,60,40,30,20,17,15,12,10m
MF	0.3-3	160m, 630m
LF	30-300 kHz	2200m

630m Band

2200m Band

472 – 479 kHz

135.7 – 137.8 kHz

5 Watts EIRP

1 Watt EIRP

Return to Ham Radio's Roots

The earliest ham radio operation (1900-1920) was mostly below 1 Mhz.

Hams migrated “up” to HF in the 1920's.

21st Century hams now have a chance to rediscover MF and LF radio operation.

Modern History

ARRL petitioned in the 1970's for a ham allocation "below" the AM broadcast band.

ITU proposed the new bands in 2012.

630m band became available after maritime traffic vacated the 500 kHz band.

FCC opened the new bands on Oct. 13, 2017.

First new ham band since 60m in 2003.

One Big Problem

The MF frequency range is used by electric utilities for *unlicensed* communication called BPL (broadband over power lines).
Also called PLC (power line communications).

For the first time in its history the FCC ordered a licensed radio service to not interfere with an unlicensed radio service.

To operate on the new bands, hams must obtain *permission* from the Utilities Technology Council (UTC).

<https://utc.org/plc-database-amateur-notification-process/>

PLC Database Amateur Notification Process

First Name *

Last Name *

Date *

Latitude

Degrees (Latitude) *

Minutes (Latitude) *

Seconds (Latitude) *

Direction (Latitude) *

- N
- S

Longitude

Degrees (Longitude) *

Minutes (Longitude) *

Seconds (Longitude) *

Direction (Longitude) *

- E
- W

"IF YOUR COORDINATES ARE IN DECIMAL/GPS FORMAT PLEASE [CLICK HERE](#) TO CONVERT THEM INTO DEGREES, MINUTES AND SECONDS. THANK YOU."

Call sign (if existing) *

Email Address *

Phone Number *

Frequency and/or frequency range *

- 135.7-137.8 kHz
- 472-479 kHz

The Utilities Technology Council rejects applicants who are located less than 1 km (0.62 mile) from a power line that uses BPL.

You're good to go if you don't get a reply from UTC within 30 days.

630m and 2200m Rules

General class or higher license

Secondary allocation-must not cause interference

Approval from UTC required

Mobile operation prohibited

CW, SSB, data, and image modes allowed

Automatic station control allowed (WSPR, beacon)

Max. antenna height 197 feet (60 meters)

About the Power Limit

Antenna efficiency on the 630m band is about 5% so you need a 100W transmitter to get 5W EIRP.

Antenna efficiency on the 2200m band is about 1%, so you need a 100W transmitter to get 1W EIRP.

630 Meter Band

472-479 kHz

Offers reliable ionospheric propagation at night.

Contacts over 1000+ miles are possible, similar to what you can hear on the AM broadcast band.

The high noise level and low power limit favors the newest weak signal digital modes.

2200 Meter Band

135.7-137.8 kHz

A true experimenter band.

Propagation characteristics are not well known.

Antennas are an extreme challenge.

1W EIRP power limit is a constraint. Temporary?

Getting Started

Many ham transceivers offer good reception of 630m.

A separate transmitter must be built or purchased.
Surplus maritime transmitters are available.

140 foot inverted L antenna is usable for transmit.

Smaller antennas are usable for receiving.