



Up Coming ARISS Event

Amateur Radio on the International Space Station (ARISS) inspires students, worldwide, to pursue interests and careers in science, technology, engineering and math through amateur radio communications opportunities with the International Space Station (ISS) on-orbit crew.

The next big event will be the ARISS SSTV event that starts Thursday, April 11 about 18:00 UTC (11:00 PDT) and will be operational until about 18:00 UTC (11:00 PDT) on Sunday, April 14. Since this event will run continuously for 72 hours, those in the higher latitudes should have a pretty good chance to receive all 12 of the images. When this event becomes active, SSTV images will be transmitted from the ISS at the frequency of **145.80 MHz** using wide band FM and the **SSTV mode of PD120** and can be received using ham radio equipment as simple as a 2 meter handheld radio or a common shortwave or scanner receiver that covers the 2 meter ham band. After connecting the audio output of the radio receiver to the audio input of a computer running free software such as MMSSTV, the SSTV images can be displayed

All you need to do to receive SSTV pictures direct from the space station is to connect the audio output of a scanner or amateur radio transceiver via a simple interface to the microphone input of the soundcard on a Windows, Linux, or Apple iOS device with the correct software, and tune in to 145.800 MHz FM. You can even receive pictures by holding an iPhone next to the radio loudspeaker.

On Windows PC's the free application MMSSTV can be used to decode the signal, on Apple iOS devices you can use the SSTV Pad app. For Linux systems try QSSTV.

The ISS puts out a strong signal on 145.800 MHz FM and a 2m handheld with an outdoor quarter wave antenna will be enough to receive it. Many FM rigs can be switched between wide and narrow deviation FM filters. For best results you should select the filter for wider deviation FM. Most handhelds seem to have a single wide filter fitted as standard.

During most of a pass the ISS may be more than 15 degrees above the horizon so an antenna with a high radiation angle will give better results. Simple antennas such as an outdoor quarter wave ground plane or dipole should give good results. Large 2m co-linear antennas don't work quite as well because their radiation pattern is concentrated at the horizon.

Amateur Radio on the International Space Station (ARISS) is a cooperative venture of international amateur radio societies and the space agencies that support the International Space Station (ISS). In the United States, sponsors are the Radio Amateur Satellite Corporation (AMSAT), the American Radio Relay League (ARRL), the Center for the Advancement of Science in space (CASIS) and National Aeronautics and Space Administration (NASA). The primary goal of ARISS is to promote exploration of science, technology, engineering, and mathematics (STEM) topics by organizing scheduled contacts via amateur radio between crew members aboard the ISS and students in classrooms or public forms. Before and during these radio contacts, students, educators, parents, and communities learn about space, space technologies, and amateur radio. For more information, see www.ariss.org.

Getting Started With MMSSTV (Windows Only)

- From <https://hamsoft.ca/pages/mmsstv.php>, download MMSSTV113A.exe
- Run MMSSTV113.exe to install, this will require administrative privileges as it wants to place it a directory off the root of the default drive.
- Configuring the program for
 - On initial execution of MMSSTV it will prompt you to enter your call sign.
 - Under the Options Menu select Setup MMSSTV
 - ◆ RX Tab
 - Except for the following leave the defaults as selected
 - Check **Auto stop**
 - Check **Auto slant**
 - ◆ Only on UHF/VHF frequencies
 - Check **Decode FSKID**
 - ◆ TX Tab (optional)
 - Requires a sound card radio modem interface
 - Except for the following leave the defaults as selected
 - Check **Encode FSKID**
 - Within the CWID group, check **CW**
 - If sound card interface doesn't use VOX for PTT, set the Port to the serial port associated to the sound card's PTT under the PTT grouping
 - ◆ Misc Tab
 - Within Sound Card grouping
 - In
 - ◆ Select your soundcard microphone
 - Out
 - ◆ Select soundcard Speaker
 - Some devices have a built-in soundcard that have a combined speaker/microphone jack. These cannot be used and will require an external USB soundcard. The mono microphone jack on inexpensive USB soundcards is fine for SSTV.
 - ◆ Select **OK**
- Operation
 - For receiving transmitted picture
 - ◆ Select **RX** on main display
 - Right clicking on a non-selected RX Mode will display all modes, selecting a mode from the list will replace the displayed mode. For ARISS SSTV add PD120 to the displayed modes.
 - ◆ As tones are heard, pictures should start being built line by line.

- Radio Connection
 - Those with an existing Sound Card interface can use this for their radio connection.
 - ◆ With the PTT interface on a sound card interface can use this to send SSTV pictures.
 - Using the internal soundcard or an external USB sound card limits the functionality to receive only, as there is no Push To Talk feature.
 - ◆ Connect the radio's headphone/auxiliary output to the microphone input on the sound card.
 - For most radios this will require the standard 3.5mm male to 3.5mm male auxiliary audio cable.
 - Some handhelds like the Baofeng will require the use a 2.5mm male to 3.5 mm male auxiliary audio cable.
- Alternatives
 - With an USB SDR receiver and software like SDRUNO, HDSDR, or SDR Console, coupled with a software based virtual audio cable, you can only need a PC and an antenna connected to the SDR receiver. MMSSTV's audio input setting would be the Microphone port of the virtual audio cable.

