

m00nwalk 



Medium Forensics picoCTF 2019

AUTHOR: JOON

Hints 

Description

1 2

Decode this [message](#) from the moon.

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Attached File: `message.wav`

# 1. Lab Setup

Tested on an SIFT Ubuntu 22.04 VM running PipeWire (PulseAudio compatibility layer). Substitute equivalent commands on other distros.

## 1.1 Grab the tools

```
sudo apt update
sudo apt install qsstv pavucontrol
```

- `qsstv` – GUI SSTV receiver/encoder.
- `pavucontrol` – lets us reroute audio sources and sinks (needed for a virtual cable).

## 1.2 Create a virtual audio cable

QSSTV expects real-time audio; we'll feed the WAV straight into it via a null sink:

```
# a) remove any existing null sink (optional reset)
pactl unload-module module-null-sink || true
```

```
# b) create a fresh one
pactl load-module module-null-sink sink_name=virtual-cable sink_properties=device.description=virtual-cable
```

Verify:

```
pactl list short sinks | grep virtual-cable # should list the sink
pactl list short sources | grep virtual-cable # should list virtual-cable.monitor
```

# 2. Configure QSSTV

1. **Launch QSSTV.**
2. *Options* → *Configuration* → *Sound*
  - Interface: **PulseAudio**
  - Input device: **pulse – PulseAudio Sound Server**
  - Input clock: **48000 Hz** (matches the file's sample rate)
  - Save & OK.
3. Return to the main window; set **mode** to **Auto** via the toolbar dropdown.

# 3. Wire the Audio Path

1. Start `pavucontrol`.
2. Go to **Recording**
3. Change its source to **Monitor of virtual-cable Audio/Sink sink**.
4. In a terminal, play the sample **into** the virtual cable:

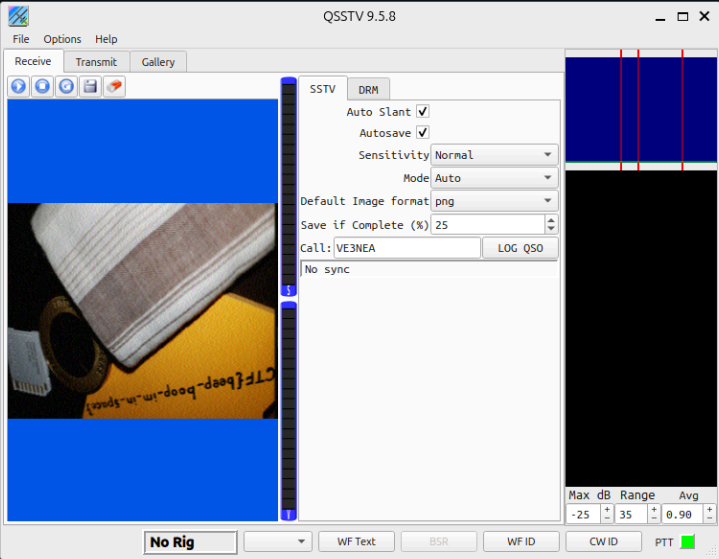
```
paplay -d virtual-cable message.wav
```

The QSSTV waterfall should immediately light up with the distinct SSTV stripe pattern.

## 4. Extract

Let the entire Scottie 1 frame (~110 s) paint. When the last line renders the final image shows:

```
abdul@siftworkstation: ~/Documents/Forensics CTFs/moonwalk
$ ls
message.wav
abdul@siftworkstation: ~/Documents/Forensics CTFs/moonwalk
$ pactl load-module module-null-sink sink_name=virtual-cable sink_properties=device.description=virtual-cable
536870913
abdul@siftworkstation: ~/Documents/Forensics CTFs/moonwalk
$ pactl list short sinks | grep virtual-cable
727      virtual-cable    PipeWire          float32le 2ch 48000Hz  IDLE
abdul@siftworkstation: ~/Documents/Forensics CTFs/moonwalk
$ pactl list short sources | grep virtual-cable
727      virtual-cable.monitor PipeWire          float32le 2ch 48000Hz  IDLE
abdul@siftworkstation: ~/Documents/Forensics CTFs/moonwalk
$ paplay -d virtual-cable message.wav
abdul@siftworkstation: ~/Documents/Forensics CTFs/moonwalk
$
```



picoCTF{beep\_boop\_im\_in\_space}

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