AX.25 Sound Card Interface User's Guide
javAPRSSrvr 4.3

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Section 1 - Introduction

AX25SoundIntf is written to provide a universal interface between Java applications and a sound card acting as a TNC modem. The Java sound card adaptation is developed by Sivan Toledo 4X6IZ originally for javAPRSSrvr 3.x and adapted to 4.0 by Pete Loveall AE5PL. The sound card code is available at https://github.com/sivantoledo/javAX25.

AX25SoundIntf extends net.ae5pl.serialintf.SerialIntf allowing a single sound card to be shared by multiple clients.

Section 2 - Program Requirements and Description

AX25SoundIntf is designed to run on any Java VM supported by javAPRSSrvr.

AX25SoundIntf is comprised of a number of classes which Java looks at as objects. The main class is net.ae5pl.ax25soundintf.AX25SoundIntf. This class is called at startup, sets parameters, and begins execution of the different support threads.

AX25SoundIntf extends net.ae5pl.serialintf.SerialIntf to provide full, bidirectional communication with the serial port. All IGate and TNC logic is handled at in other classes which leaves the AX25SoundIntf to concentrate on sending and receiving serial data.

If PTT control is used, RXTX must be present as well. I recommend using NR Java Serial (available in the javAPRSSrvr group) which contains precompiled libraries for most operating systems and does not require modifications to the Java virtual machine.

Section 3 - Configuration Parameters

The configuration properties reside in properties files for each client adjunct, server adjunct, and port. The main properties file is called javaprssrvr.properties by default. You can use any text file for the main properties file if you pass the name into javAPRSSrvr as a command line parameter.

The property names are not case sensitive but the values can be. Defaults are shown below.

NOTE: UNLESS YOU REQUIRE A SETTING OTHER THAN THE DEFAULT, DO NOT INCLUDE ANY PARAMETERS WITH DEFAULT SETTINGS.

List parameters (L) may be defined on the property line or may be defined in a text file with the suffix .lst. If defined on the line, each entry is separated by a semicolon. If defined in a file, each entry is put on a separate line in the .lst file and the file name is the property value. Do not put blank lines in the file. For instance, this could be a definition for ListProperty (example only):

ListProperty=first.aprs.net:1313;second.aprs.net:1313

Or you could have the following 2 lines in a file named hubs.lst:

first.aprs.net:1313
second.aprs.net:1313

with ListProperty=hubs.lst

Properties preceded by a (M) are unchangeable and should not be included in your properties files. They are included in the descriptions below to indicate what common properties are available vs. those that have been forcibly overridden.

javAPRSSrvr Properties

SerialPorts=

(L)This must include the AX25SoundIntf properties file.

AX25SoundIntf General Properties

ClassPath=
(L) Must include the RXTX jar (for PTT) file (recommend nrjavaserial.jar).

Class=
Must be set to net.ae5pl.ax25soundintf.AX25SoundIntf.

LibraryPath=
(L) Must include the path to the RXTX native library(ies) (for PTT) if not using NR Java Serial.

IntfName=
This is the name of the serial interface. This must match the respective client IntfName property.

InitFile=
The contents of this file are sent to the serial interface as-is at start-up.

RFSpeed=1200
This is used to pace output to the serial interface.

(M)SharedTransmit=false
Sets whether clients will see each other's packets.

(M)KISSMode=true
If true, a number of optimizations are implemented at the serial interface to enhance KISS TNC support.

(M)TCPPorts=
(L)Either IP:port or port list. Each defined port opens a listener which provides bidirectional access to the serial interface.

Sound Card Properties

SoundcardName=default
This is the OS name of the sound card.

SoundcardInputName=default
This is the OS name of the sound card used for input.

SoundcardOutputName=default
This is the OS name of the sound card used for output.

SoundcardSampleRate=9600
This is the sampling rate which should be left at 9600 (8 times 1200).

SoundcardLatency=100
Latency in milliseconds.

KISS TNC Properties

KISSTXDelay=200
TX delay (ms).

KISSPersist=255
Persistence.

KISSSlotTime=0
Slottime (ms).

KISSFullDuplex=false
APRS on 1200 bps is half duplex, leave at false.

KISSTXTail=100
After transmission tail (milliseconds).

PTT Serial Port Properties

PTTPort=none
OS port name for serial port to use to control PTT.

PTTSignal=RTS
Pin to use for signaling PTT to the radio.

Section 4 - Recommended Configurations

Set the port to the settings required by your sound card and PTT serial port.

Section 5 - Installation Instructions

AX25SoundIntf is AX25SoundIntf.jar. Set the ClassPath property in your AX25SoundIntf properties file to AX25SoundIntf.jar and the RXTX jar file from the RXTX group. You will need to load the RXTX library file(s) in a directory and point the LibraryPath property in your AX25SoundIntf properties file to that directory.

This version of AX25SoundIntf has been tested with Linux and Windows RXTX 2.2pre2.