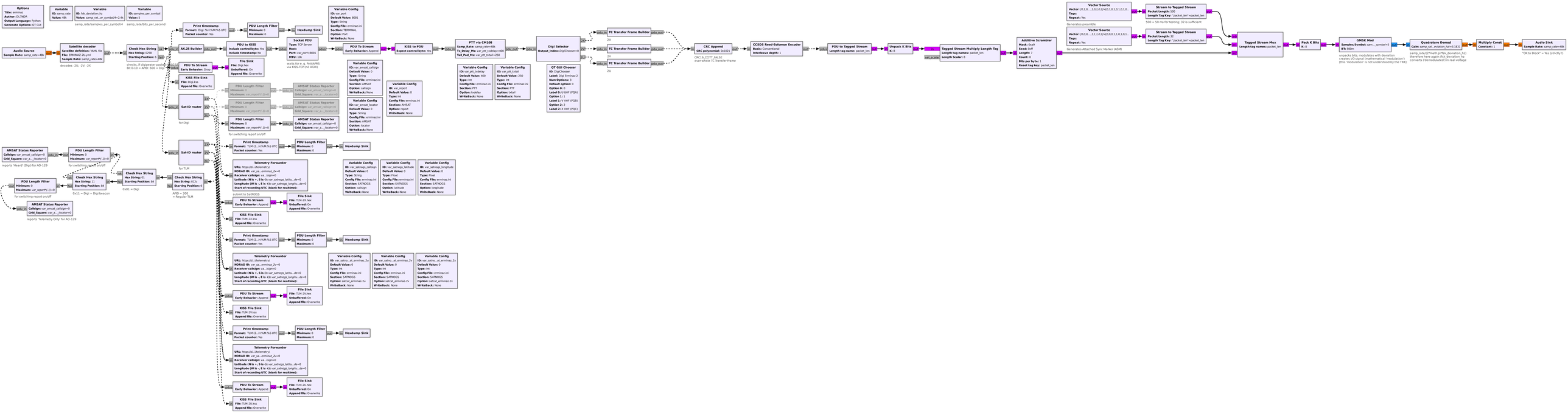

Options
Title: ammsat
Author: DL7NDR
Output Language: Python
Generate Options: QT GUI
Variable
ID: samp_rate
Value: 48k
Variable
ID: fsk_deviation_hz
Value: samp_rat...er_symbol/4+2.4k
Variable
ID: samples_per_symbol
Value: 5
samp_rate/samples_per_symbol/4
samp_rate/samples_per_second
Audio Source
Sample Rate: samp_rate=48k
Satellite decoder
Satellite definition: XML file
File: EMANAZ-2U.syst
Sample Rate: samp_rate=48k
decodes - 2U, - 2V, - 2X
Check Hex String
Hex String: 0258
Starting Position: 6
checks, if dippeater packet
Bit 0-10 = APID: 600 = Digi
Print timestamp
Format: Digi: %H:%M:%S UTC
Packet counter: Yes
AX.25 Builder
PDU To KISS
Include control byte: No
Include timestamp: No
PDU Length Filter
Minimum: 0
Maximum: 0
Hexdump Sink
Socket PDU
Type: TCP Server
Host:
Port: var_port+8001
MTU: 10k
waits for e. g. PySTARS
via KISS-TCP (no AGW)
Variable Config
ID: var_port
Default Value: 8001
Type: String
Config File: ammsat.ini
Section: TERMINAL
Option: Port
WriteBack: None
PDU To Stream
Early Behavior: Append
KISS to PDU
Expect control byte: Yes
PTT via CM108
Samp_Rate: samp_rate=48k
Tx_Delay_Ms: var_ptt_holdoy=400
Tail_Pad_Ms: var_ptt_tail=250
Variable Config
ID: var_ptt_holdoy
Default Value: 400
Type: int
Config File: ammsat.ini
Section: PTT
Option: holdoy
WriteBack: None
Variable Config
ID: var_ptt_tail
Default Value: 250
Type: int
Config File: ammsat.ini
Section: PTT
Option: tail
WriteBack: None
Digi Selector
Output_Index: DigiChooser+0
QT GUI Chooser
ID: DigiChooser
Label: Digi Emmaz-2
Num Options: 3
Default option: 0
Option 0: 0
Label 0: U (AFF (PQA)
Option 1: 1
Label 1: V (AF (PQB)
Option 2: 2
Label 2: X (AFF (PQC)
TC Transfer Frame Builder
2X
TC Transfer Frame Builder
2V
TC Transfer Frame Builder
2U
CRC Append
CRC polynomial: 0x1021
CRC16_CCITT_FALSE
over whole TC Transfer Frame
CCSDS Reed-Solomon Encoder
Basis: Conventional
Interleave depth: 1
PDU to Tagged Stream
Length tag name: packet_len
Unpack K Bits
K: 8
Tagged Stream Multiply Length Tag
Length tag names: packet_len
Length Scaler: 8
set_scaler
Additive Scrambler
Mask: 0x49
Seed: 0xff
Length: 7
Count: 0
Bits per byte: 1
Reset tag key: packet_len
Vector Source
Vector: (0,1,0,...,1,0,1,0,1)+(0,1,0,1,0,1,0,1,0,...
Tags:
Repeat: Yes
Generates preamble
Stream to Tagged Stream
Packet Length: 500
Length Tag Key: "packet_len"+packet_len
500 = 50 ms for testing. 32 is sufficient
Vector Source
Vector: (0,0,0,...,1,1,1,0,1)+(0,0,0,1,1,0,1,0,1,0,1...
Tags:
Repeat: Yes
Generates Attached Sync Marker (ASM)
Stream to Tagged Stream
Packet Length: 32
Length Tag Key: "packet_len"+packet_len
Tagged Stream Mux
Length tag names: packet_len
Pack K Bits
K: 8
GMSK Mod
Samples/Symbol: samples_per_symbol+5
BT: 500m
unpacks bits; modulates with deviation
creates I/Q signal (mathematical 'modulation')
[this 'modulation' is not understood by the TRX]
Quadrature Demod
Gain: samp_rat...eviation_hz)=3.1831
samp_rate/(2*math.pi*fsk_deviation_hz)
therefore here again fsk_deviation_hz
converts ('demodulated') in real voltage
Multiply Const
Constant: 1
Audio Sink
Sample Rate: samp_rate=48k
"OK to Block" = Yes (sts(stz) !)
AMSAT Status Reporter
Callsign: var_amsat_callsign=0
Grid_Square: var_a...location=0
reports 'Heard' (Digi) for AO-129
PDU Length Filter
Minimum: 0
Maximum: var_report*(-1)+0
for switching report on/off
Check Hex String
Hex String: 01
Starting Position: 84
0x01 = Digi
Check Hex String
Hex String: 02c
Starting Position: 6
APID = 300
= Regular TLM
Check Hex String
Hex String: 01
Starting Position: 84
0x11 = Digi + Digi-beacon
AMSAT Status Reporter
Callsign: var_amsat_callsign=0
Grid_Square: var_a...location=0
reports 'Telemetry Only' for AO-129
PDU Length Filter
Minimum: 0
Maximum: var_report*(-1)+0
for switching report on/off
Print timestamp
Format: TLM (2...H:%M:%S UTC
Packet counter: Yes
PDU Length Filter
Minimum: 0
Maximum: 0
Hexdump Sink
PDU To Stream
Early Behavior: Append
File Sink
File: TLM-2X.hex
UnbufferedI: On
Append file: Overwrite
KISS File Sink
File: TLM-2X.kss
Append file: Overwrite
Sat-ID router
for Digi
for TLM
PDU Length Filter
Minimum: 0
Maximum: var_report*(-1)+0
for switching report on/off
AMSAT Status Reporter
Callsign: var_amsat_callsign=0
Grid_Square: var_a...location=0
Telemetry Forwarder
URL: https://dl...ctelemetry/
NORAD ID: var_sa...erminal_2u=0
Receiver callsign: oe...login=0
Latitude (N is +, S is -): var_satnogs_lattitu...de=0
Longitude (W is -, E is +): var_satnogs_longitu...de=0
Start of recording UTC (blank for realtime):
submit to SatNOGS
Variable Config
ID: var_satnogs_callsign
Default Value: 0
Type: String
Config File: ammsat.ini
Section: SATNOGS
Option: callsign
WriteBack: None
Variable Config
ID: var_satnogs_latitude
Default Value: 0
Type: Float
Config File: ammsat.ini
Section: SATNOGS
Option: latitude
WriteBack: None
Variable Config
ID: var_satnogs_longitude
Default Value: 0
Type: Float
Config File: ammsat.ini
Section: SATNOGS
Option: longitude
WriteBack: None
Variable Config
ID: var_satno...at_ammsat_2u
Default Value: 0
Type: int
Config File: ammsat.ini
Section: SATNOGS
Option: satcat_ammsat-2u
WriteBack: None
Variable Config
ID: var_satno...at_ammsat_2v
Default Value: 0
Type: int
Config File: ammsat.ini
Section: SATNOGS
Option: satcat_ammsat-2v
WriteBack: None
Variable Config
ID: var_satno...at_ammsat_2x
Default Value: 0
Type: int
Config File: ammsat.ini
Section: SATNOGS
Option: satcat_ammsat-2x
WriteBack: None
AMSAT Status Reporter
Callsign: var_amsat_callsign=0
Grid_Square: var_a...location=0
Variable Config
ID: var_report
Default Value: 0
Type: int
Config File: ammsat.ini
Section: AMSAT
Option: report
WriteBack: None
Variable Config
ID: var_amsat_locator
Default Value: 0
Type: String
Config File: ammsat.ini
Section: AMSAT
Option: locator
WriteBack: None