

RX1 Modulated Input

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Introduction

It has been quite some number of years since I dealt with Modulators and Receivers, so I did struggle a little with this recently, these are some notes of the values I used, just to get a Mod/Demod setup going.

Hardware Connections

See below for the connection method between the AVP and the RX1.



The Monitor F-Type output of the AVP is connected directly to the RF input of the RX1 (RX4 is on the left). There is no up-converter or attenuator in use.

AVP Output Parameters

Below is the output settings I used on the AVP Modulator.

Satellite Modulator

Output Parameters

Modulation Parameters

Input Parameters

Carrier ID

RF Carrier ID State

On

Output Select

IF

L-Band

Output State

On (Nominal Power)

On (Reduced Power)

Off

Output Power-up State

On (Reduced Power)

Off

Last State

L-Band Output

Frequency Input Mode

L-Band Frequency

Uplink Frequency

L-Band Frequency

1070

MHz [950 - 2150]

Reduced L-Band Line-up Power

-5

dBm [-40 - 5]

Nominal L-Band Power

-10

dBm [-40 - 5]

L-Band Spectrum Sense

Normal

Inverted

L-Band Tilt

0

dB/MHz [-0.04 - 0.04]

L-Band Up-converter Frequency

2500

MHz [2500 - 100000]

Upconverter Power

Off

15V

24V

Upconverter Reference

Off

Output Parameters

RF Carrier ID State	On (don't confuse this with Modulation on)
Output Select	L-Band
Output State	On Reduced Power (we don't want to overload the RX1 input)
Output Power-up State	(Last State)

L-Band Output

Frequency Input Mode	L-Band Frequency
L-Band Frequency	1070 MHz
Reduced L-Band Line-up Power	-5
Nominal L-Band Power	-10
L-Band Spectrum Sense	Inverted
L-Band Tilt	0
L-Band Up-converter Frequency	2500 MHz
Upconverter Power	Off
Upconverter Reference	Off

The settings on this page determine what frequency you are transmitting on.

AVP Modulation Parameters

Below is the Modulation settings I used on the AVP Modulator.

Satellite Modulator

Output ParametersModulation ParametersInput ParametersCarrier ID

Modulation Standard

DVB-S2

Modulation State

On

Modulation

8PSK

FEC Rate

3/4

Frame Size

Normal

Short

Pilots

Off

NCR Stamping PID

8191

[0 - 8191]

Symbol Mapping Mode

Peak Power

Mean Power

PL Scrambling Sequence Number

0

[0 - 262141]

Symbol Rate

31.25

Msymbol/s [0.132 - 66]

Roll-off Factor

20

percent

Bandwidth

37.5

MHz

Modulation Standard	DVB-S2
Modulation State	On
Modulation	8PSK
FEC Rate	3/4
Frame Size	Normal
Pilots	Off
NCR Stamping PID	8191
Symbol Mapping Mode	Mean Power
PL Scrambling Sequence Number	0
Symbol Rate	31.25
Roll-off Factor	20%
Bandwidth	37.5 Mhz (Auto Calculated from the above modulation settings)

The settings on this page determine the amount of bandwidth that is available, in this case it is 37.5 Mhz.

RX1 Input Settings

See Below for the RX1 Demodulation settings.

Parameters

Input

Decrypt

Decoding

Output

Redundancy mode

Active active (switch on failure)

Input loss timeout

100

ms

Primary

Secondary

Input type

Satellite

Status

Service has exclusive use of source

Source

RF 4

LNB

LNB frequency

5150

MHz

LNB voltage

voltage off

22kHz

Tuner

Frequency

4080

MHz

Symbol rate

31.25

MSym/s

Search range

10000

kHz

C/N margin alarm

2.0

dB

MIS enable

MIS stream ID

1

Gold code

0

Input Type	Satellite
Source	RF4 (in this example)
LNB	
LNB Frequency	5150
LNB Voltage	(voltage off) this is because we don't actually have an LNB in our system.
22kHz	not selected, same reason as above.
Tuner	
Frequency	4080 (5150-4080=1070. 1070 is the L-Band Freq we set in the AVP)
Symbol Rate	31.25
Search Range	10000

C/N margin alarm 2.0

Everything else off.

RX1 Input Status

On the same page as you entered the RX1 demodulation settings, once you have started the receiver service, you should see the following input status.

Status

Input status

Current input

Primary

Input status (Primary) Current

Input type

Satellite

Source status

Receiving
(1 Service)

CC errors

0

Bit rate

69.6 Mbps

Signal strength

-37.58 dBm

Bit error ratio

<1e-7

FEC errors

0

FEC rate

3/4

Delivery system

DVB-S2

Roll off

20%

Pilot

off

Inversion

auto

Modulation

8PSK

C/N Margin

012345678910

28.09 dB

Input status (Secondary)

Input type

IP

Source status

Receiving

Bit rate

6.5 Mbps

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