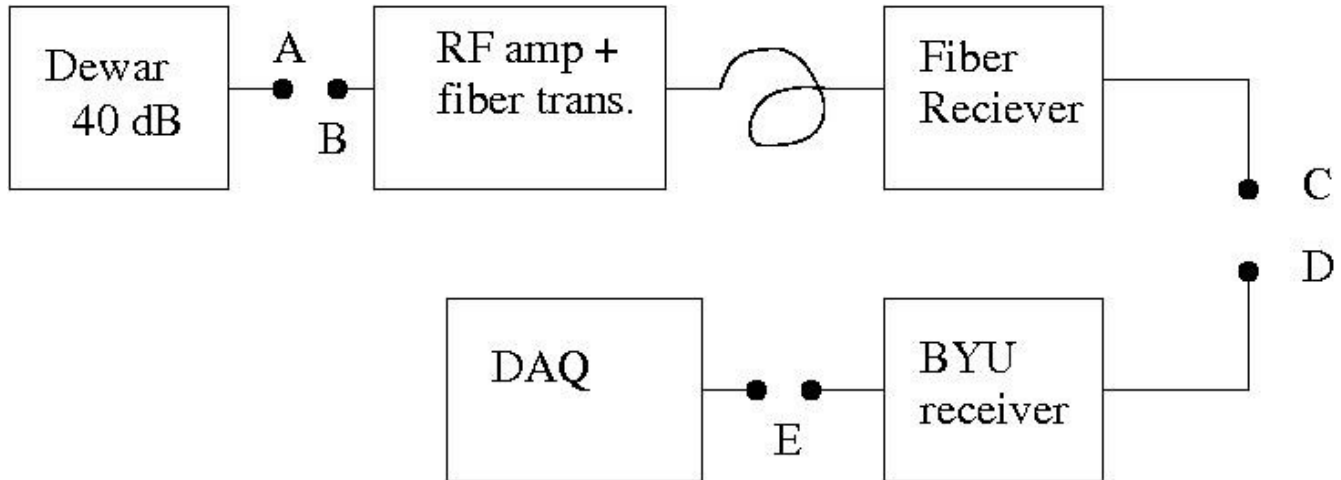


A summary of the measurements made on the PAF receiver system on April 3, 2013

A block diagram of the receiver system is given below.



The power levels are measured with a spectrum analyzer with two different resolution bandwidths (30 and 300 KHz) and in average mode. Measurements listed below were done on the signal path of dipole X1, X12 and Y11. The local oscillators were set to observe a center frequency of 1550 MHz for these measurements. Typical power levels from these measurements are given below.

Measurements with 50 Ohms termination put at B

Spectral density at C = -79 dBm/300 KHz = -133.7 dBm/Hz

Spectral density at E (C connected to D) = -23 dBm/30 KHz = -67.7 dBm/Hz

Measurement with hotload (A connected to B)

Spectral density at C = -50 dBm/300 KHz = -104.8 dBm/Hz

Spectral density at E (C connected to D) = -2 dBm/30 KHz = -46.8 dBm/Hz

Spectral density at E (C --> 10 dB --> D) = -5 dBm/30 KHz = -49.8 dBm/Hz

Gain of BYU receiver

With 10 dB pad between C and D the power level at the output came down only by 3 dB, indicating BYU system is saturating. The estimated gain of BYU system is about 65 dB from the measurement with 10 dB pad. This is consistent with the measurement with B terminated, which gives 66 dB.

Noise floor of BYU receiver

Measurement made with D open.

Spectral density at E = -43 dBm/30 KHz = -87.7 dBm/Hz

Measurement made with a 10dB pad at D

Spectral density at E = -41 dBm/30 KHz = -85.7 dBm/Hz

Noise floor of BYU reference at D = $-85.7 - 65 = -150.7$ dBm/Hz