Rx Specification Sheet

Total Bandwidth (Hz) - Specified as **maximum** and **minimum** frequencies in Hz, the total receiver bandwidth is typically defined by the 3dB bandwidth of the **preselector** filter. If **multiple** preselectors are implemented, then the bandwidth of each RF band should likewise be specified.

LO Bandwidth (Hz) - Specified as **maximum** and **minimum** frequencies in Hz, the LO bandwidth is defined as the **tuning bandwidth** of the receiver Local Oscillator. If **multiple** oscillators are implemented, then the bandwidth each oscillator should likewise be specified.

Intermediate Frequency (Hz) - This is the frequency of the desired signal as it **exits the receiver** (i.e., enters the demodulator). Typically this is the center frequency of the IF filter.

Instantaneous Bandwidth (Hz) - This the bandwidth of the receiver component with the **narrowest** bandwidth of **all** the receiver components. Typically, this is the **bandwidth of the IF filter**, and thus **likewise** is approximately equal to the bandwidth of the desired RF signal.

Additionally, this value is used in determining the **noise power** at the output of the receiver.

Intermediate Frequency Error (+/-Hz) - This value specifies the **accuracy** of signal frequency as it leaves the receiver. Ideally this frequency is **precisely** the Intermediate Frequency. However, the Local Oscillator exhibits **tuning error** (i.e., stability in parts per million). This error **translates** to an uncertainty in the signal frequency

as it exits the receiver, an **uncertainty** specified as +/- Hz (e.g., the Intermediate Frequency error is +/- 10 kHz).

Remember, this error should be **much less than 10%** of the IF bandwidth!

Minimum Discernable Signal (dBm) – This value specifies the **sensitivity** of the receiver.

Minimum Output SNR (dB) – The output SNR **when** the desired RF signal power is **equal** to MDS.

1dB Compression Point (dBm) – The **input** signal power where at least one receiver component begins to **saturate**.

Total Dynamic Range (dB) - The **difference** (in dB) between the 1dB Compression Point and the Minimum Discernable Signal.

Image Rejection (dB) - The **attenuation** (provided by the preselector filter) of an RF signal at the **image frequency** (of a given tuning solution)—a signal that would otherwise create a spurious response **precisely** at the receiver Intermediate Frequency

3rd-order Signal Rejection (dB) – The **attenuation** (provided by the preselector filter) of an RF signal at any and all frequencies that would—for a given tuning solution—create a spurious **3rd-order** response **precisely** at the receiver Intermediate Frequency.

Selectivity (dB) – The **attenuation** (provided by the IF filter) of the RF signals in the **channels immediately adjacent** to the desired RF signal.

Instantaneous Dynamic Range (dB) - The dynamic range of the **demodulator**.

Maximum Receiver Gain (dB) – The total receiver gain (input to output) when the **smallest AGC attenuation** is selected.

Minimum Receiver Gain (dB) – The total receiver gain (input to output)when the **largest AGC attenuation** is selected.

Noise Figure (dB) – A value determined when the smallest AGC attenuation is selected.

Output Noise Power (dBm) – Assume T_A = 290 degrees K.

D. C. Power Requirement (Watts) - The **total D.C. power** requirement, determined by **totaling** the D.C. power requirements for **each** component in the receiver design.