



RF Configuration Parameters

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RF Frequency Settings

For the Low frequency setting, enter the center frequency of an active channel at or near the low end of the forward band. For the High frequency setting, enter the center frequency of an active channel at or near the high end of the forward band. For example, if you have an 870 MHz plant, you can enter 105 MHz for the low frequency and 867 MHz for the high frequency.

RF Levels

For the Low and High level setting, enter the desired output level (in dBmV) for the active channel specified above. For example, you might enter 37 dBmV for the low frequency level and 51 dBmV for the high frequency level.

Tilt

The tilt displayed here is calculated based on the levels specified above, but is not necessarily the same as the overall launch amplifier tilt. Using the level values from the example above (37 and 51 dBmV), the displayed tilt is 14 dB based on this equation:

$$\text{Tilt} = \text{High level} - \text{Low level} = 51 - 37 = 14 \text{ dB}$$

But to verify that these settings are also within the operating range of the node, use the following formula:

$$\text{Tilt} = (\text{High level} - \text{Low level}) \times (\text{Max freq} - \text{Min freq}) / (\text{High freq} - \text{Low freq}) = (51 - 37) \times (1215 - 54) / (867 - 105) = 21.3 \text{ dB}$$

The calculated tilt is less than 22 dB, so these values are within the operating range of the node.

Then check whether the output level is valid, use this formula:

$$\text{Level} = \text{High level} + \text{Tilt} \times (\text{Max freq} - \text{High Freq}) / (\text{Max freq} - \text{Min freq}) = 51 + 21.3 \times (1215 - 867) / (1215 - 54) = 57.4 \text{ dBmV}$$

The calculated level at the high end is 57.4 dBmV, which is less than the 58 dBmV specification, so these levels are valid.

If either the tilt or high end level are out of range, auto setup will fail and AGC will not reliably lock.