TRF1500

QUESTION: The user would like a definition for the term "Power Conversion Gain Reduction" used in the high-band LNA table at the top of page 7 of the datasheet. What exactly does the 43.5 dB represent?

ANSWER: When the TRF1500 is receiving in a high signal environment, the high-band and/or low-band LNA's can be turned OFF. This is done by using control code 011010 for the low-band and control code 111010 for the high-band. Under these conditions, only the respective LO buffers and Mixers are ON, the LNA's are OFF. In a high signal environment, if the LNA's are ON, the additional gain provided by the LNA's could cause an increase in intermodulation products thus causing undesired noise and distortion in the receiver. The TRF1500 allows the user to selectively turn off the LNA's to reduce the over-all gain of the receiver sections. In particular, for the low-band receiver, the cascaded power conversion gain of 26 dB (typical) is reduced by 19 dB (typical), to a value of 7 dB (typical), when the low-band LNA is turned off. For the high-band receiver, the cascaded power conversion gain of 26.3 dB (typical) is reduced by 43.5 dB (typical), to a value of -17.2 dB (equivalent to a conversion loss of 17.2 dB typical), when the high-band LNA is turned off.