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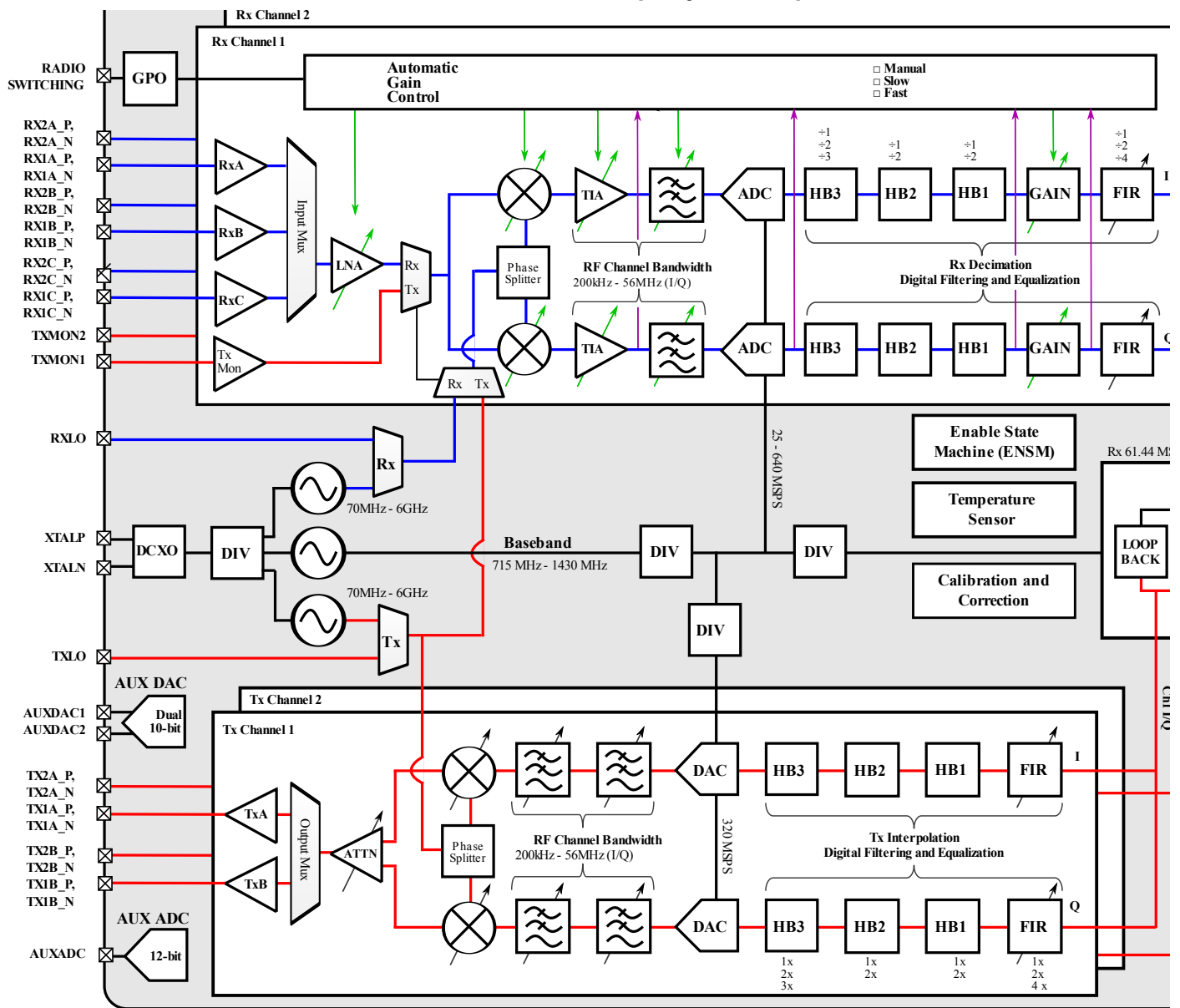
# Analog Devices Wiki

This version (15 May 2017 18:53) was **approved** by larsc.  
The Previously approved version (09 Mar 2017 00:33) is available.  
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## ADALM-PLUTO Transmit

### Transmit Architecture

The AD9363 transmit chain is based on [Direct Conversion](http://en.wikipedia.org/wiki/Direct-conversion_receiver) [http://en.wikipedia.org/wiki/Direct-conversion\_receiver] techniques.



Some things to think about:

- The Tx LO is always the same amplitude, to get the best Signal to LO ratio, run the DACs as close to full scale as you can, and then turn up/down the output attenuation to vary the output signal strength. (Don't just decrease the input to the DAC).

## Transmit Performance

Details on the performance can be found in the [performance section](#).

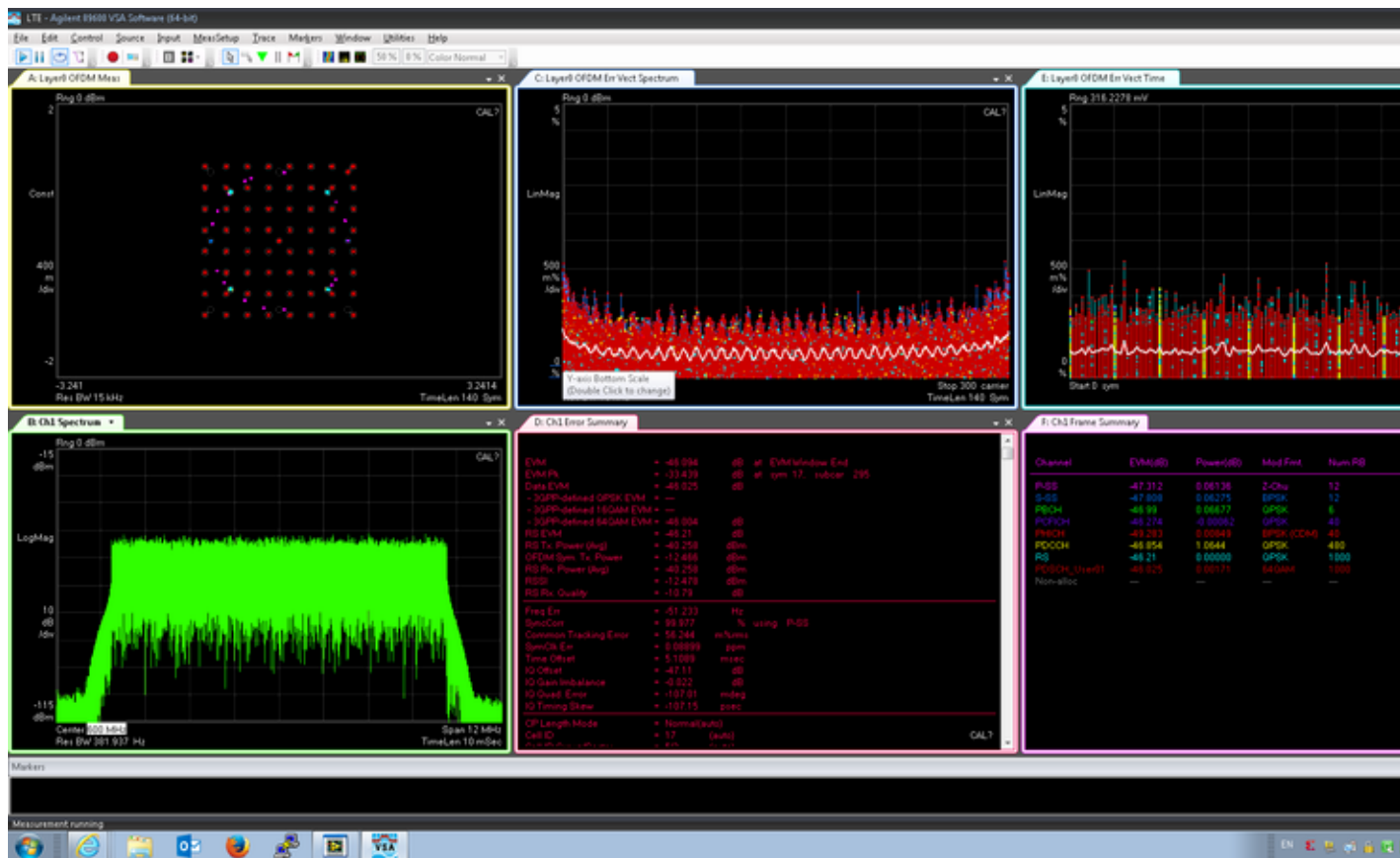
While there are many aspects of transmit performance, the two most common are:

- Output Power (how far can I transmit)
- Output fidelity (how accurate is the transmission)

For the ADALM-PLUTO, the both the output power and output accuracy are both frequency dependent. For plots vs frequency, check out the detailed [performance section](#).

This is a the output of the Keysight 89600 VSA software [<http://www.keysight.com/find/89600B>], which is used to measure signal demodulation and complete vector signal analysis. In this case, we generate an LTE 10 (10MHz wide channel), and transmit it out the Tx port of the ADALM-PLUTO, and capture it on the PXA N9030A Signal Analyzer [<http://www.keysight.com/find/N9030A>]. We can measure the RF offset (frequency error = 50Hz), and how accurate the 64-QAM constellation is created (an EVM of -46dB, or less than 0.5% RMS error) - which is pretty good. We can also see the output power (average peak output for the 10MHz channel is 15dBm/Hz).

good. we can also see the output power (average peak output for the 10MHz channel is -45dBm/Hz).



By changing the LO frequency, output power, output attenuation, these results will change.

university/tools/pluto/users/transmit.txt · Last modified: 15 May 2017 18:53 by larsc

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