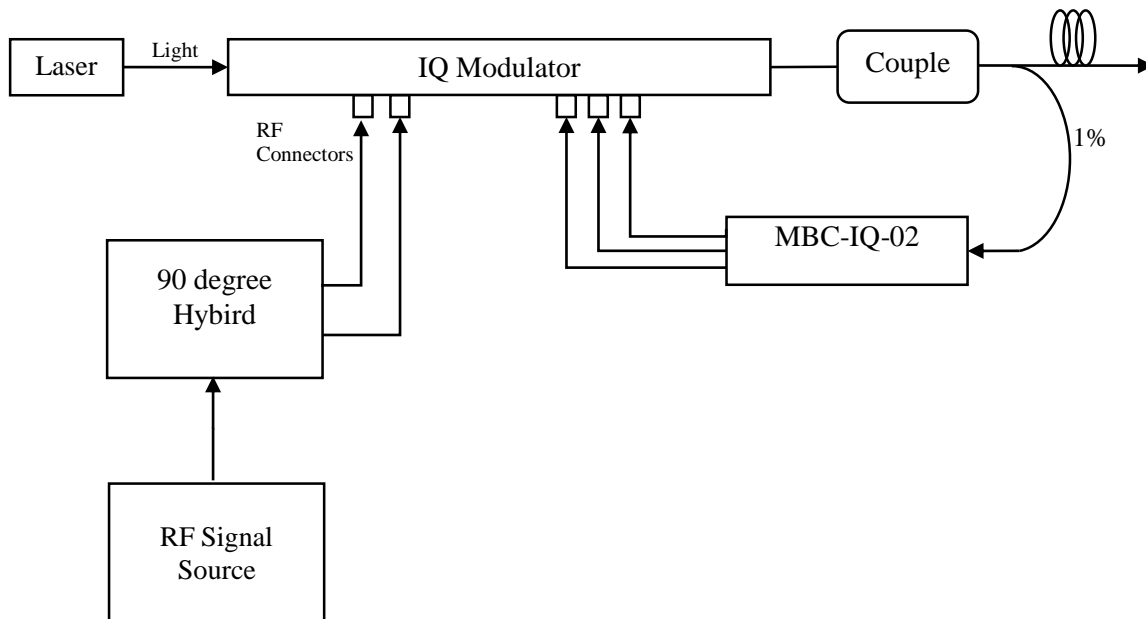


SSB System Introduction with IQ Modulator (DPMZ) And PlugTech MBC-IQ-02



System Setup

Key Components:

*IQ Modulator (Fujitsu, Photline, EOSPACE, JDSU and etc.)

*90 degree Hybrid (Marki and etc.) Hybrid splits input RF power into two channels and shift one of the channels by 90 degree. (Such as this one: <https://www.mwstore.com/static/download/catalog/0/QH-0226.pdf>)

*MBC-IQ-02. PlugTech's IQ Modulator bias controller stabilizes the system right at appropriate points.

Instruments:

*Laser source

*RF signal source. It generate single frequency RF signals with tunable frequency and tunable power.

Performance



SSB Good Result

Very good carrier and side-band suppression. However the result can only show up at special frequencies. It is because of the nature of the hybrid, which has very good performance (phase difference = 90; amplitude matched;) only at certain frequency points.



SSB General Result

General results obtained even the system is not tuned properly.



Conclusions about performance

With introduced SSB system setup, bias voltages can be controlled at accurate and stable levels. The bottleneck of the system suppression performance is the quality of RF signals enter IQ modulator. The two channels of RF signals have to be matched perfectly:

*Phase difference is 90 degree.

*Two channels have same power.