



DIPARTIMENTO DI INGEGNERIA DELL'INFORMAZIONE
ELETTRONICA E TELECOMUNICAZIONI



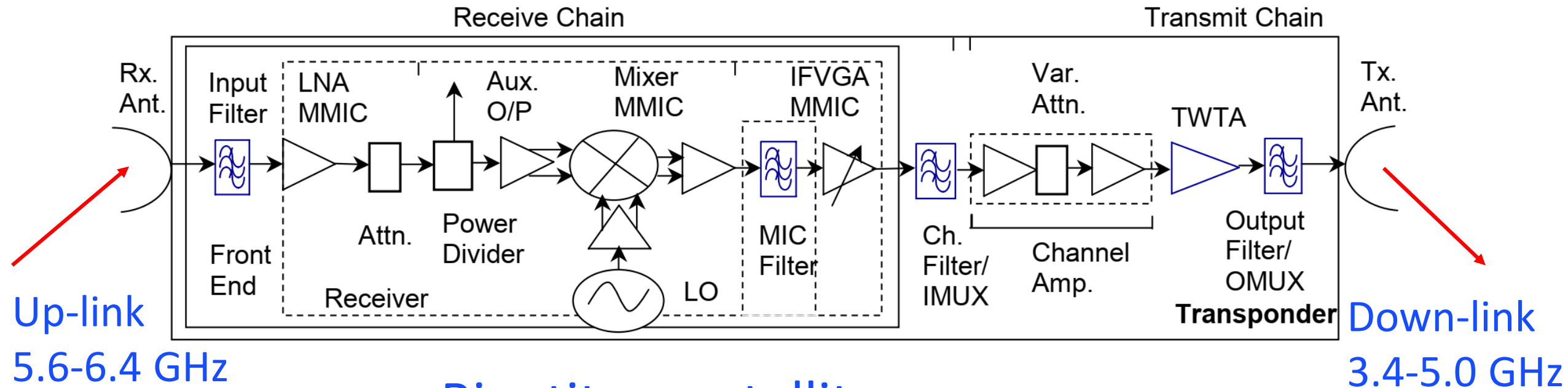
OPEN DIET 2021

Building Block per l'elaborazione RF

Dott. Pasquale Tommasino



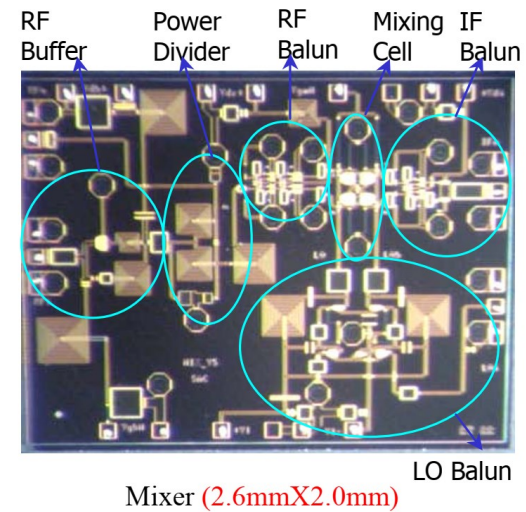
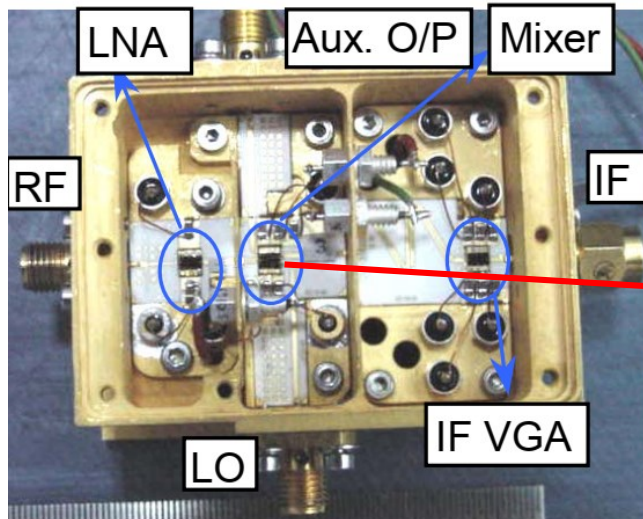
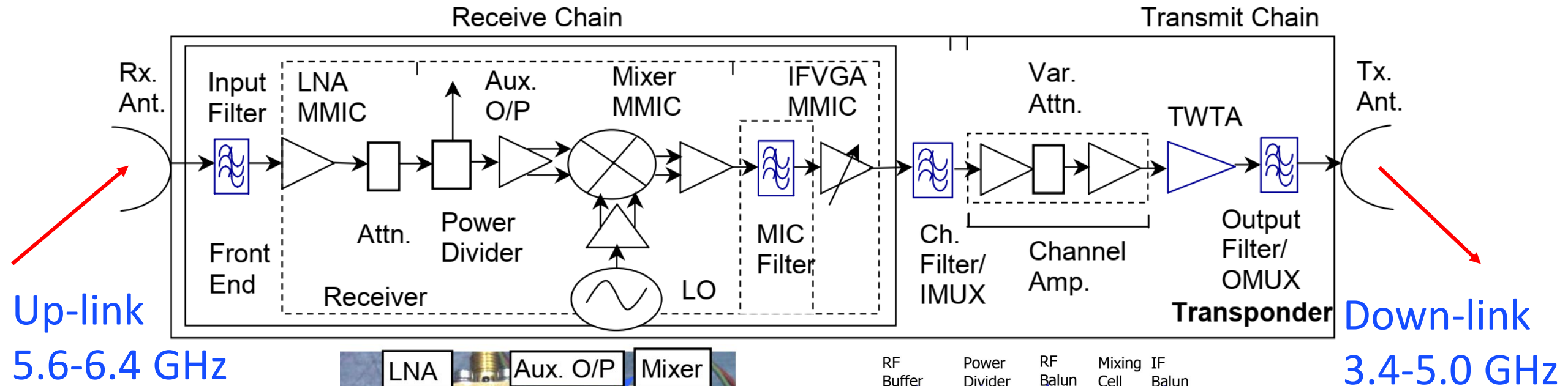
Sistema di ricetrasmissione RF



- Ripetitore satellitare
- Sistema rice-trasmittente terrestre
- Radar
- ...

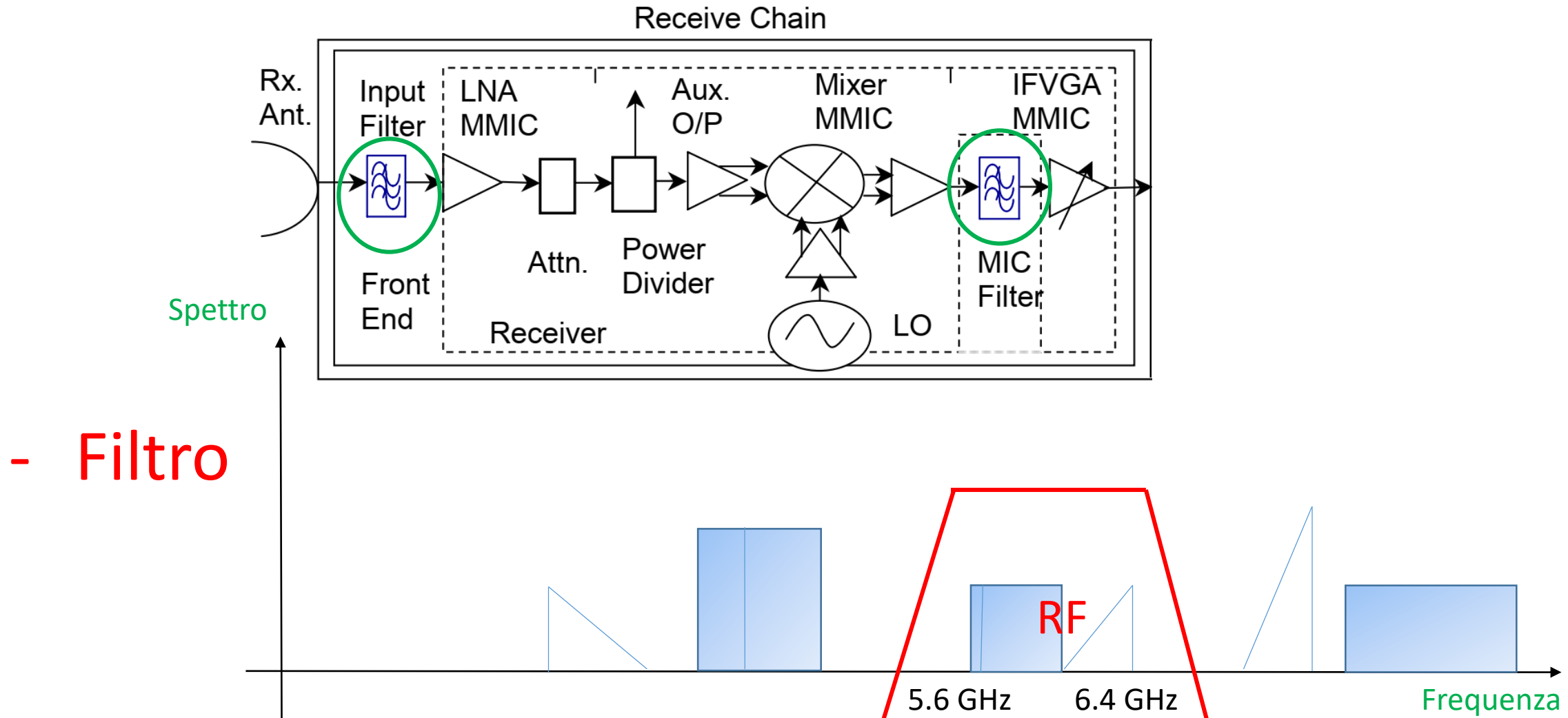


Sistema di ricetrasmissione RF





Building blocks di un ricevitore RF



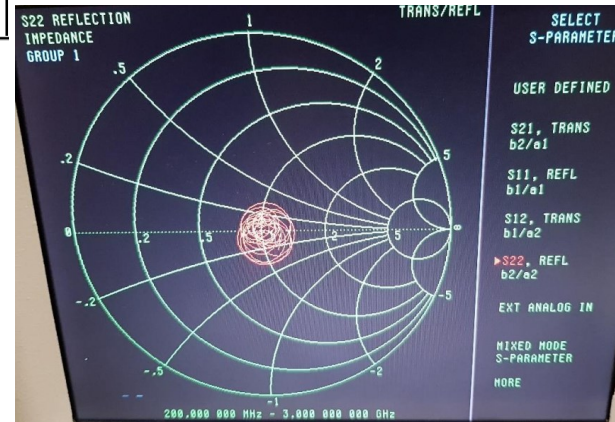
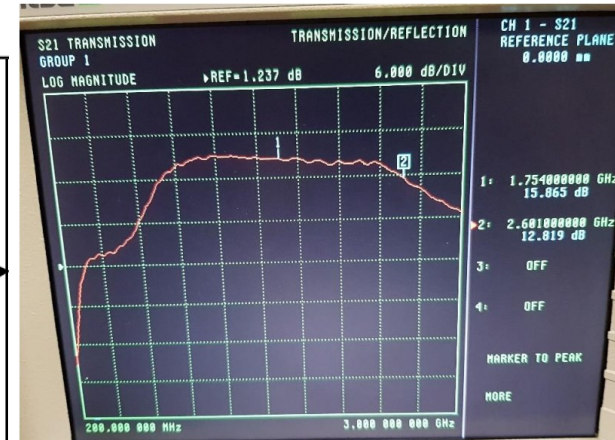
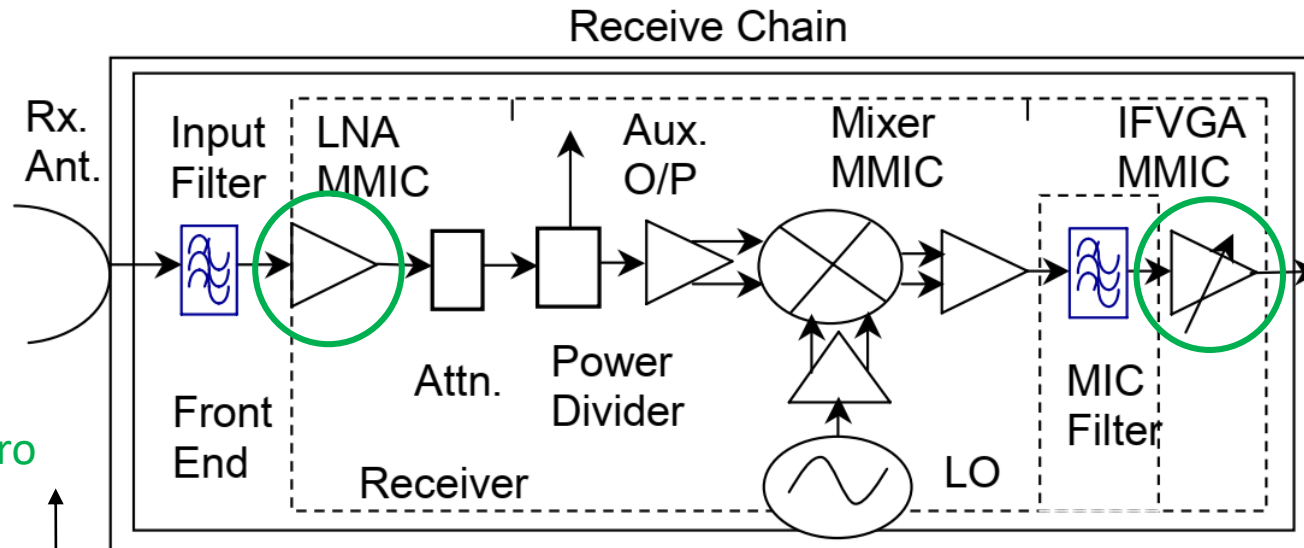


Building blocks di un ricevitore RF



Spettro

- Filtro
- Amplificatore

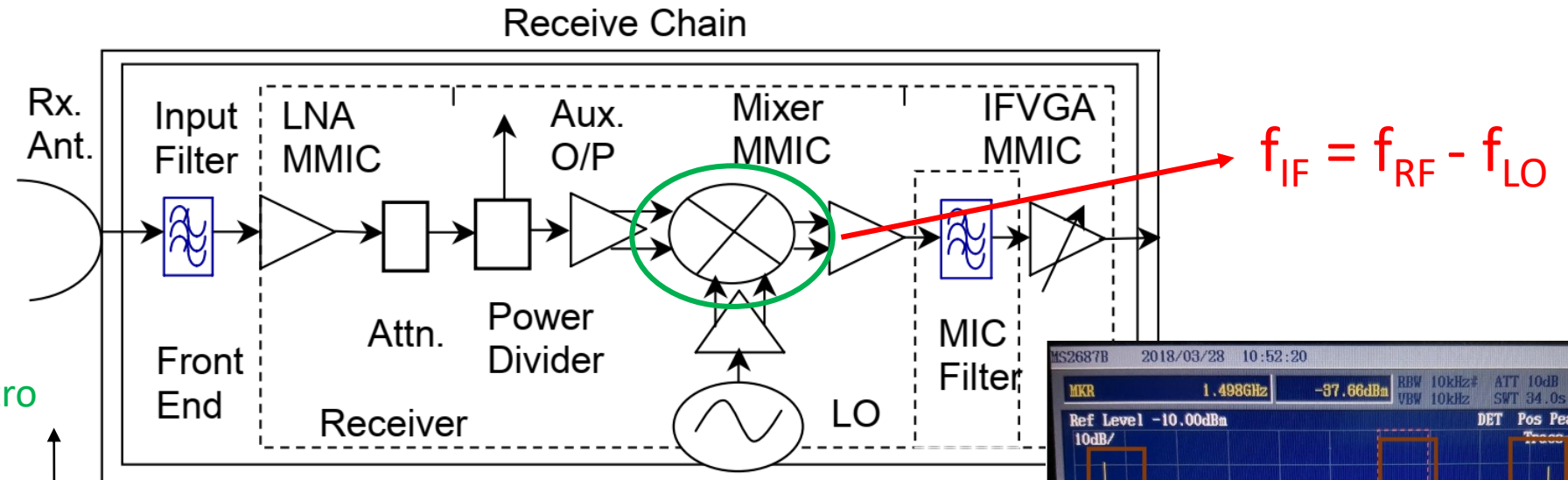


5.6 GHz 6.4 GHz

Frequenza

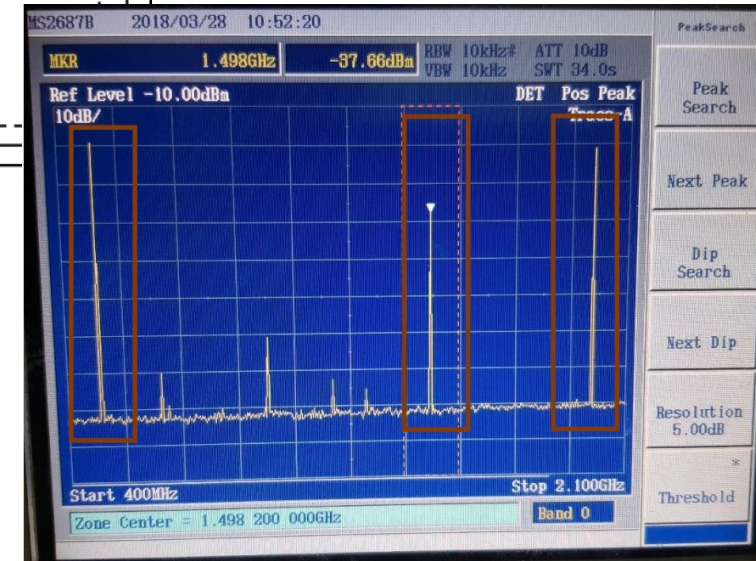
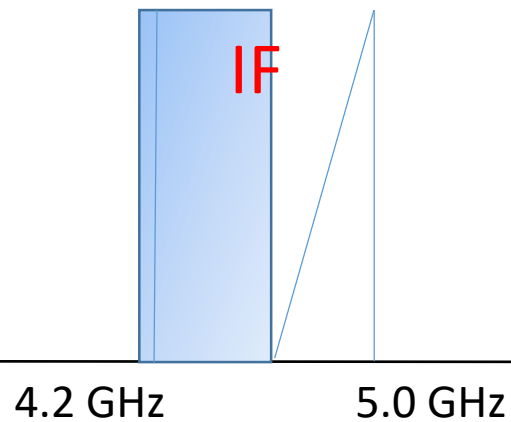


Building blocks di un ricevitore RF



Spettro

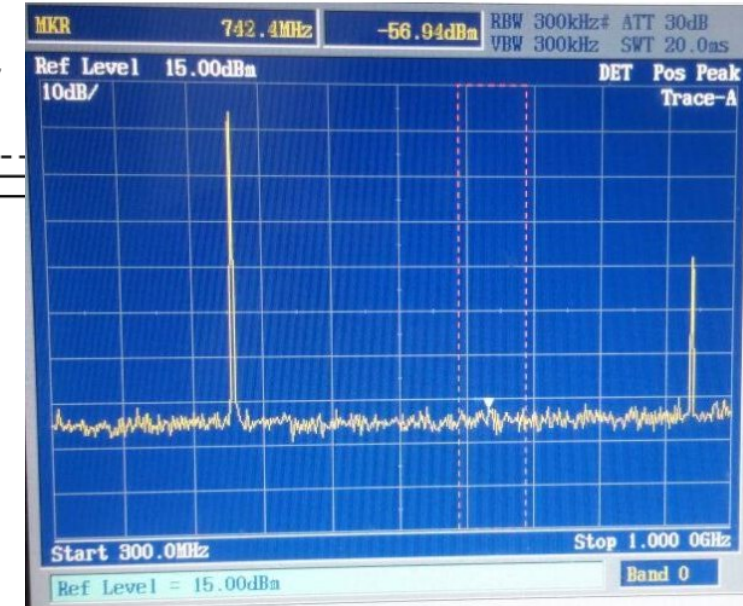
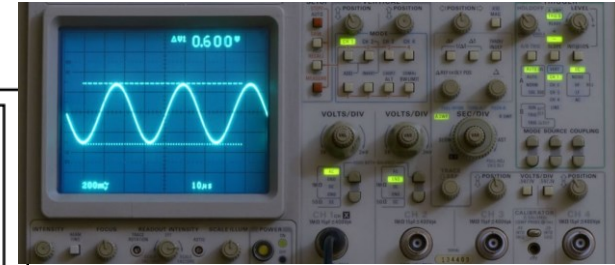
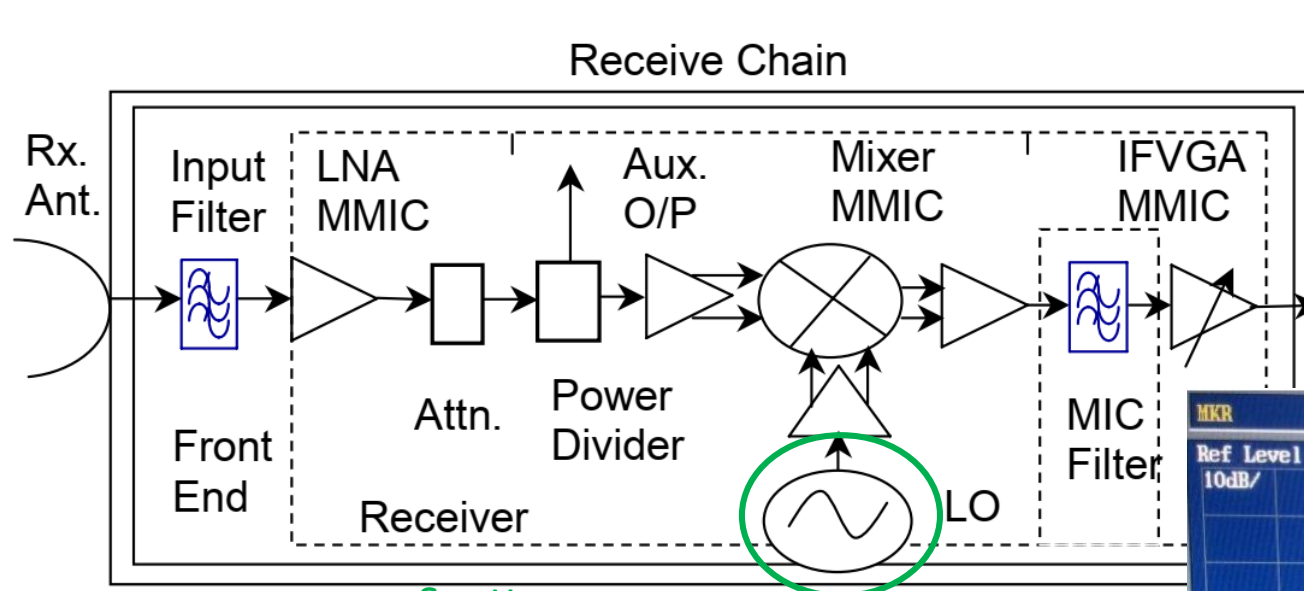
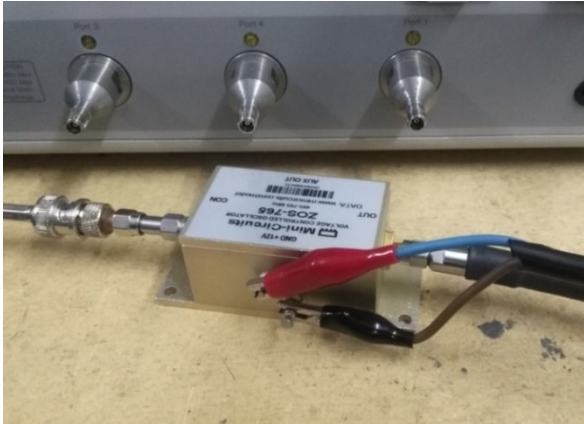
- Filtro
- Amplificatore
- Mixer



Frequenza



Building blocks di un ricevitore RF



- Filtro
- Amplificatore
- Mixer
- **Oscillatore locale**

$$f_{LO} = f_{RF} - f_{IF}$$

1.4 GHz

Frequenza



I singoli blocchi: Mixer

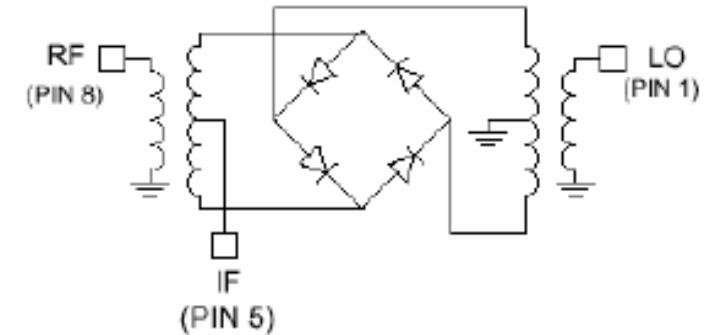
Figure di merito

- Guadagno di conversione: $G_c = P_{outIF} / P_{inRF}$
- Efficienza: $\eta = P_{outIF} / P_{ALIM}$
- Figura di Rumore: $F = SNR_{in} / SNR_{out}$
- ...

Misure



Realizzazioni circuitali



Progetto IC

