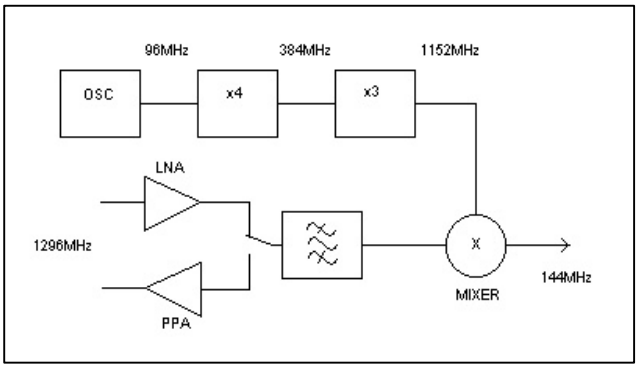
Transverter 23cms DB6NT
build by F5LGJ

Architecture of the DB6NT transverter



The local oscillator work with three stages:

- Frequency of oscillator is 96MHz.

- First multiplicator gives 384MHz frequency

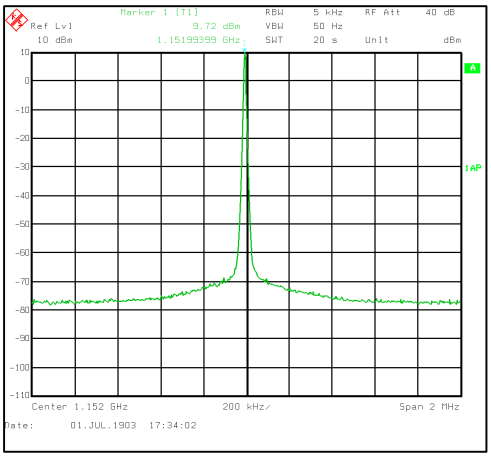
- Second multiplicator gives 1152MHz LO frequency.

In the following measurement, I present the results of my version of transverter.
- power, phase noise and spectrum of LO.
- LNA sensivity and gain.
- output power of the PPA.
- conversion gain.

The goal is to compare my construction with DF9IC results or with other transverter.

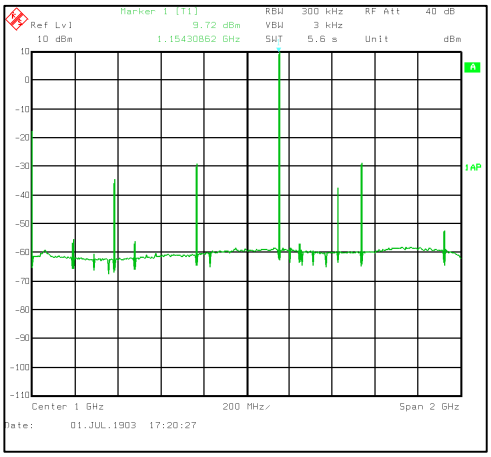
LO measurement

Spectrum of LO with R&S analyzer.



Close to the carrier: good result.

large view

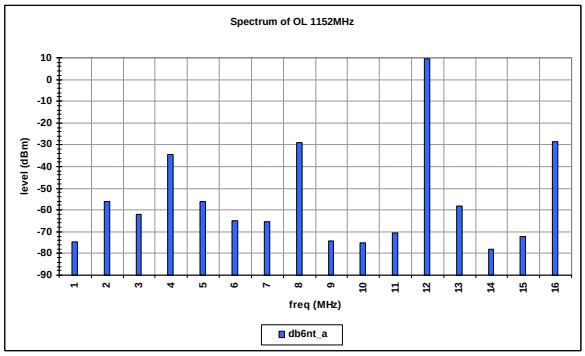


We can see a lot of spurious.
Origin from the multiplier and the frequencies used.

Fine level measurement of spectrum components

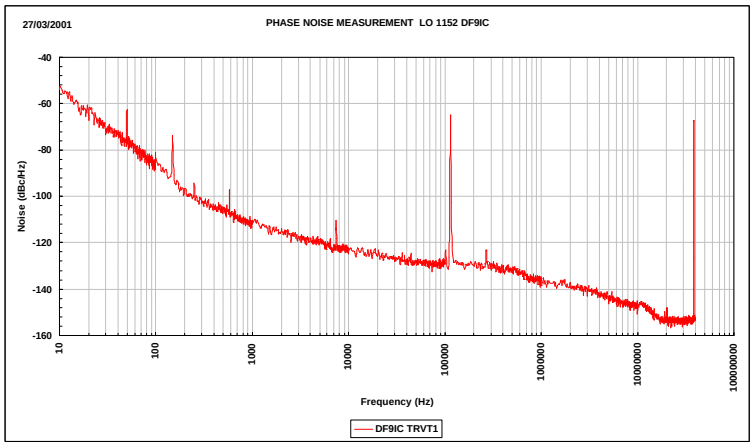
spurious –37dBc @ 384MHz

Freq (MHz)	level dBm
96	-74.826
192	-56.083
288	-62.196
384	-34.427
480	-56.3
576	-64.811
672	-65.43
768	-29.133
864	-74.287
960	-74.988
1056	-70.662
1152	9.603
1248	-58.218
1344	-78.098
1440	-72.385
1536	-28.767



Phase noise of LO signal

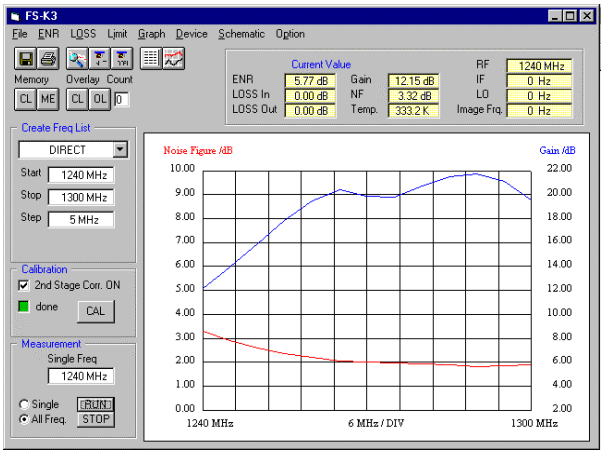
-110dBc @ 1000Hz



F5LGJ 01/07/2003

LNA measurement

NF and gain measurement



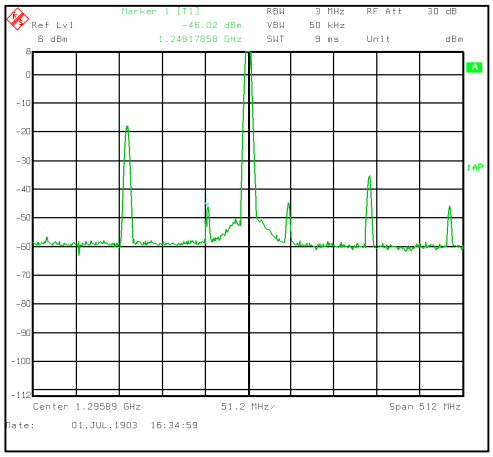
1.9dB @ 1290MHz with Gain=21dB

I must work on the first stage to improve the NF result. The goal is better than 1.5dB.

Output TX signal measurement

spectrum with output signal

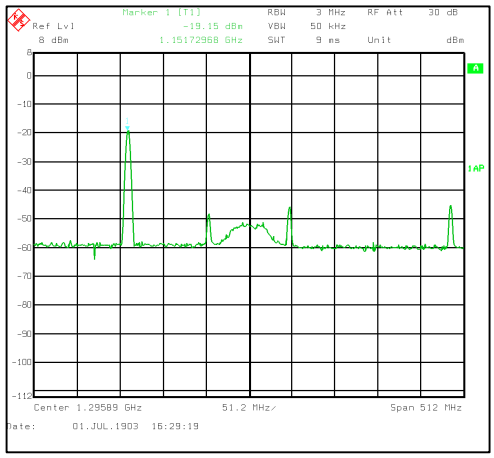
Measurement made after the PA Mitsubishi, but with low 144MHz signal



RF out = +15dBm

1152MHz spurious

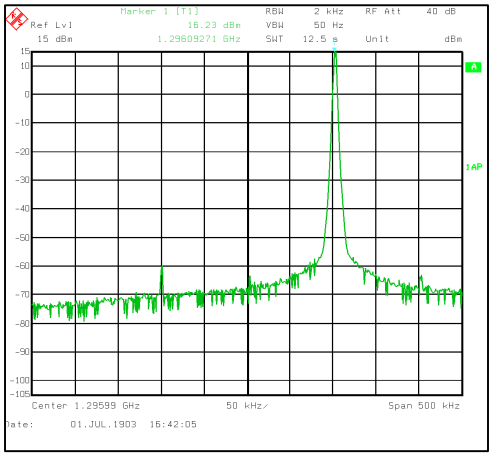
Spectrum without output signal

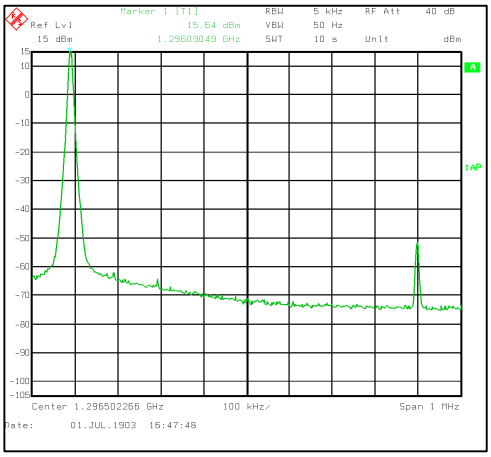


We can see the noise of RF TX chain.

F5LGJ 01/07/2003

spectrum span=2MHz





We can see spurious in the output spectrum.
The level is lower than specifications (< -60dBc).

F5LGJ 01/07/2003