

# **IPBPM Electronics status and plan**

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# Contents

- Current status
  - Electronics modification
- Plan
  - Possible option with Funding resource

# The modification of electronics

- LPF: 40MHz to more than 100MHz
  - To reduce the ringing signals, the BW of LPF will be changed to 100MHz or more higher level.

**Candidate parts:**

**SXLP-135+**



CASE STYLE: HF1139  
PRICE: \$11.45 ea. QTY (1-9)

LPF 135MHz  
Mini-Circuits  
SXLP-135+

Which is almost same  
with current LPF model.  
SXLP-40+

- OPAMP: OPA847 to THS3201
  - Total conversion gain with THS3201 was fixed.

Operational  
Amplifier.  
OPA847

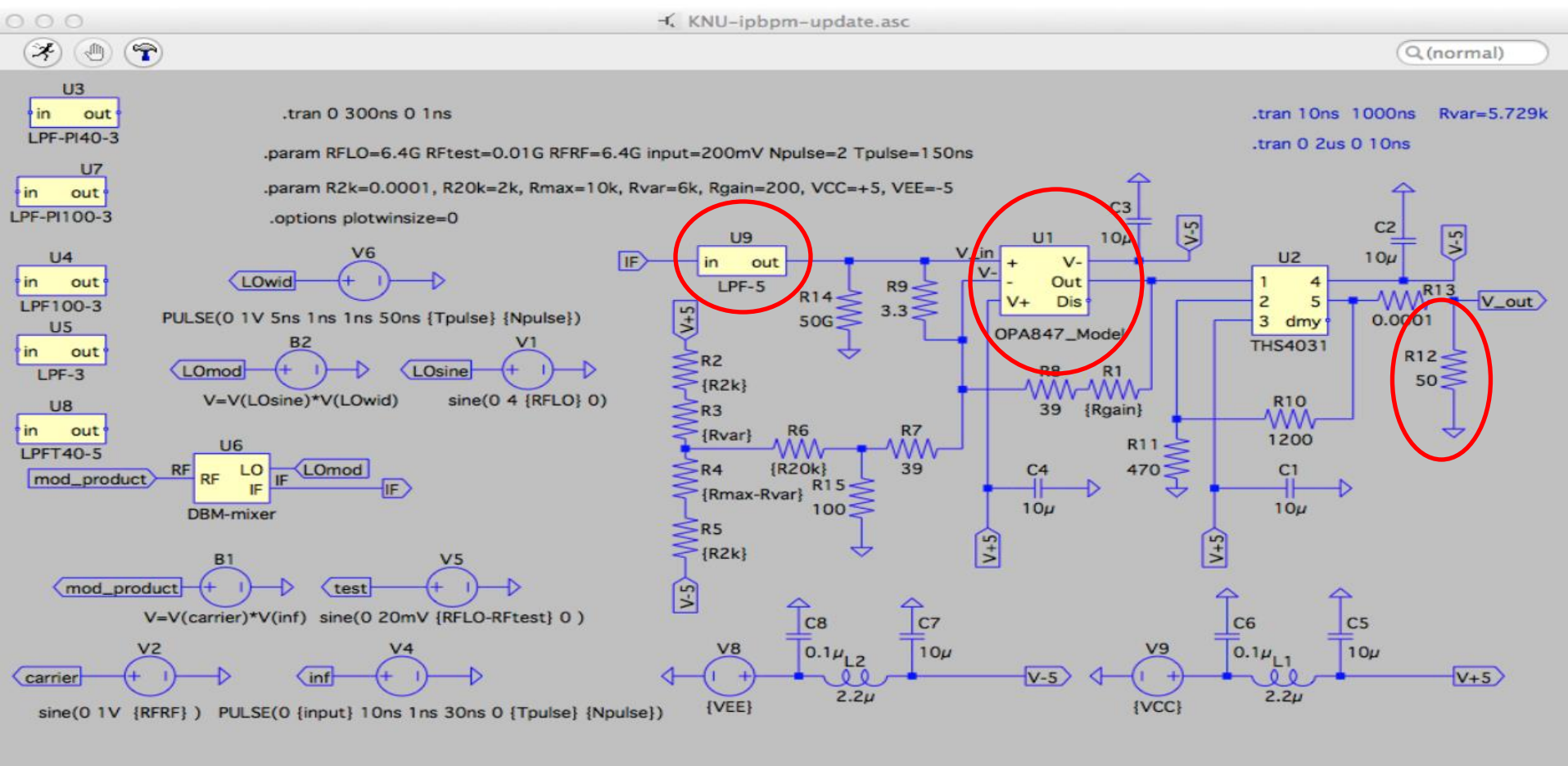


Operational  
Amplifier.  
THS3201

- 50 Ohm termination

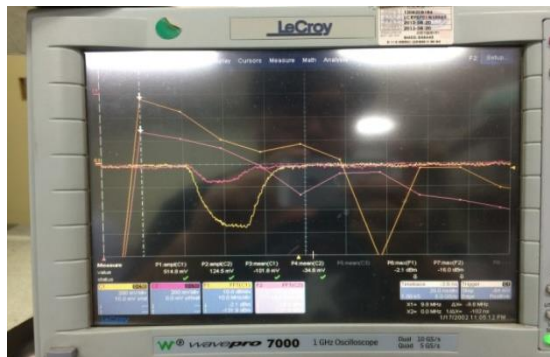
# Electronics modification

## KNU Electronics from the mixer

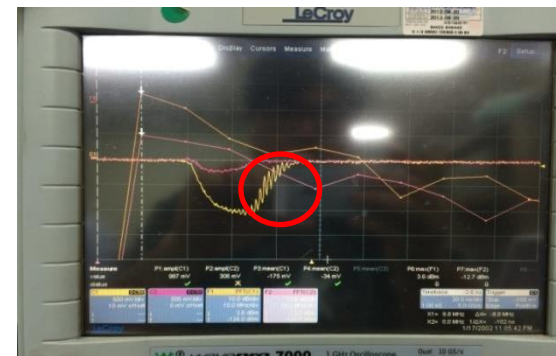


# Electronics modification results

- The partial RF oscillation was occurred from -52dBm to -35dBm level due to modification of THS3201. To confirm the reason of partial RF oscillation, we checked the results of SPICE simulation by Tauchi san. The SPICE simulation shows no problem.
- To solve this problem, we should fabricated new PCB board as like IF board of Honda's electronics. Even though we fabricated new PCB board, still there is a possibility of RF oscillation with THS3201. If then we should fabricated whole new electronics.



LO:10dBm, 6.426GHz  
RF:-50dBm, 6.424GHz



LO:10dBm, 6.426GHz  
RF:-44dBm, 6.424GHz  
**RF oscillation occurred!**

# Electronics possible option

- **KNU electronics didn't solved RF oscillation problem with THS3201.**
- **We are waiting a funding resource for the fabrication of new PCB board as like IF board of Honda san electronics. It will be start from April.**
- **Possible option for KNU electronics**
- **1. New PCB boards will be fabricated with Honda san's IF electronics scheme.**
  - **Most simple and wannabe case**, but we can not guarantee that new PCB board with Honda san's electronics scheme still have a possibility of RF oscillation even though we fabricated new PCB board for THS3201.
- **2. New electronics fabrication**
  - It need a quite long time for a 3 or 4 month. Also, we need more funding to fabricated new electronics sets.

# Back up (IF board of Honda's electronics)

## LTSpice : Honda circuit (DC amp)

