

## **CHAPTER 10**

### **A10.0 - SPURIOUS EMISSIONS TEST**

## 10.1 TEST SPECIFICATIONS AND PROGRAMME

Following Section A9.0 of RTCM Recommended Standards for 406 MHz Satellite EPIRBs (Version 2.0 Feb 5,1997) :

- Perform the spurious and harmonic emissions measurements for the 406 MHz and 121.5 MHz signals at the minimum, maximum, and ambient temperatures .
- Control, respectively, that measurements not exceed the limits given in Figure 2-1(406 MHz Spectrum Mask) and Figure 2-5 (121.5 MHz Spectrum Mask)

**Note** : These tests are performed during the COSPAS-SARSAT Type Approval tests (chapter 12)

## 10.2 EQUIPMENT UNDER TEST

Beacon Unit : 2/2  
 Name : JOTRON  
 Type : TRON 40GPS  
 Number : 7001

## 10.3 TEST SITE

Toulouse Space Center (CST) - INTESPACE Laboratory.

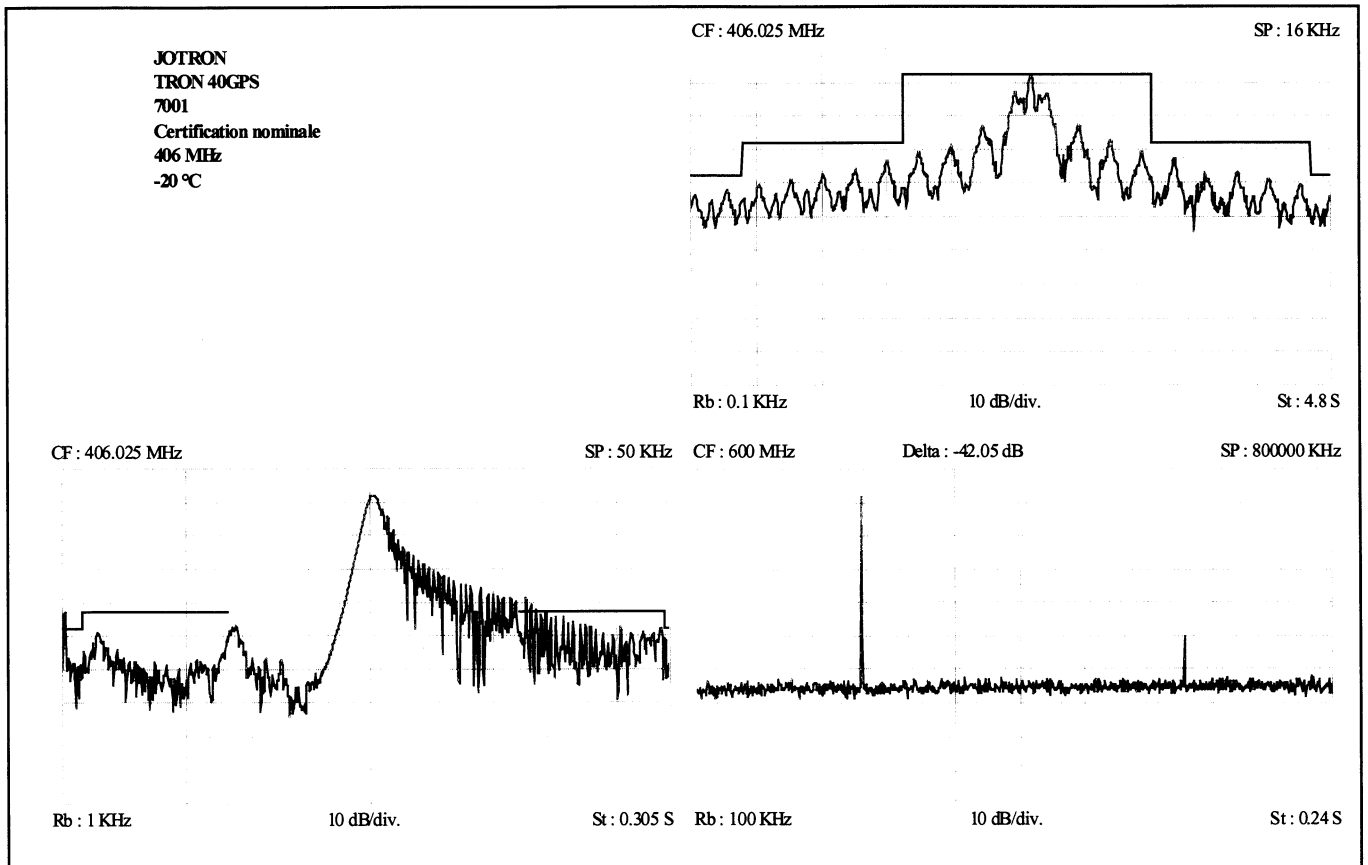
## 10.4 TEST EQUIPMENT

- Climatic chamber : CLIMATS F.C.H. – Type: Austral 137H60/1,5E - S/N: S4880.
- Argos - Cospas/Sarsat Test Bench

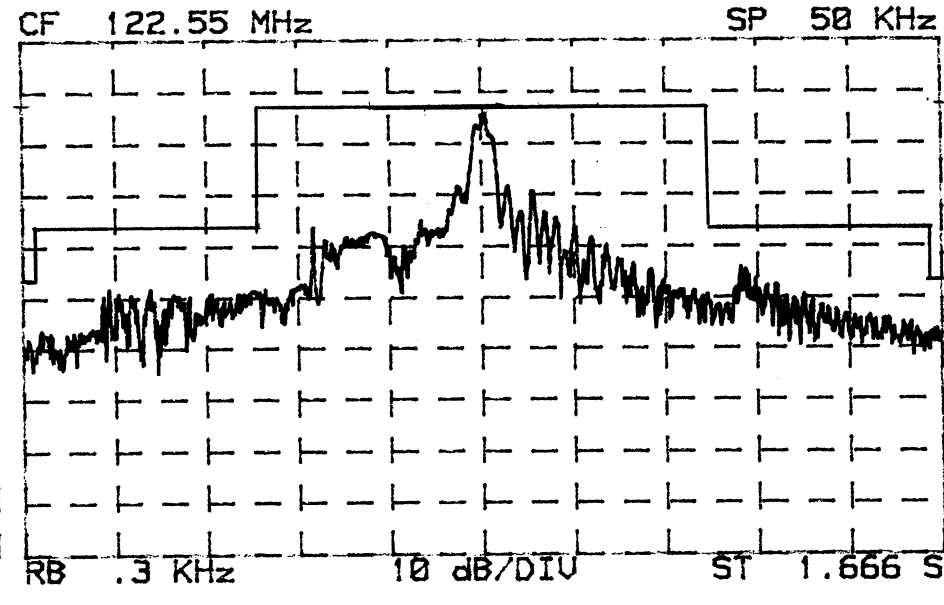
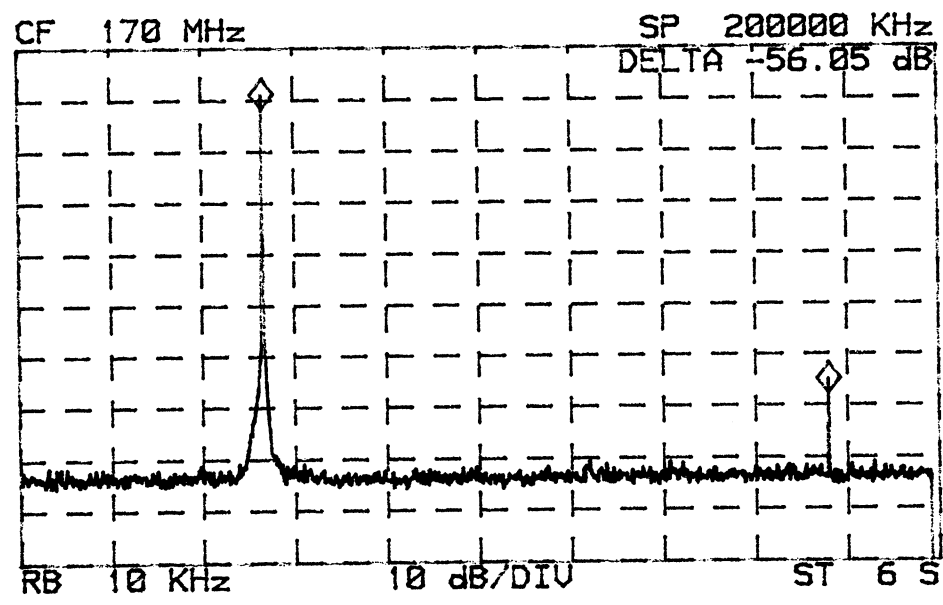
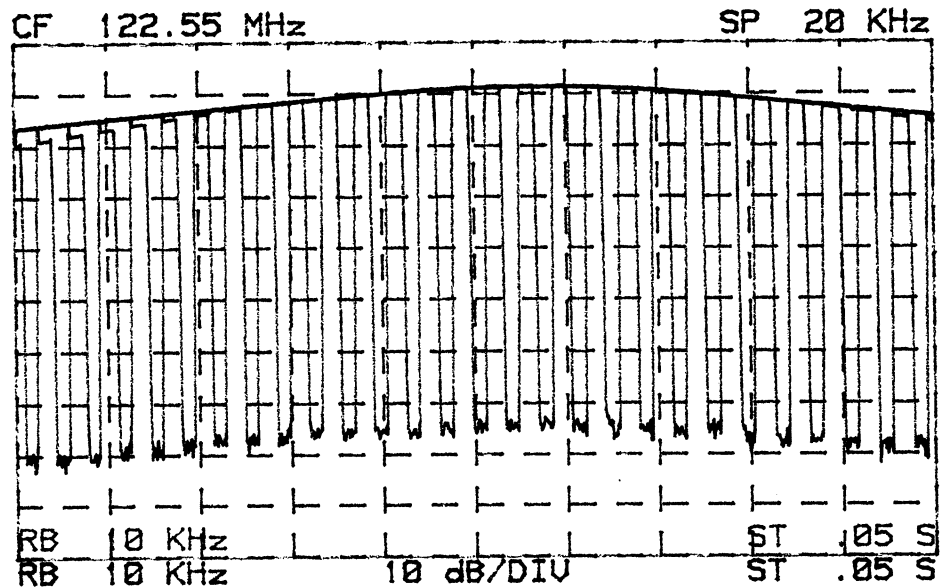
## 10.5. RESULTS

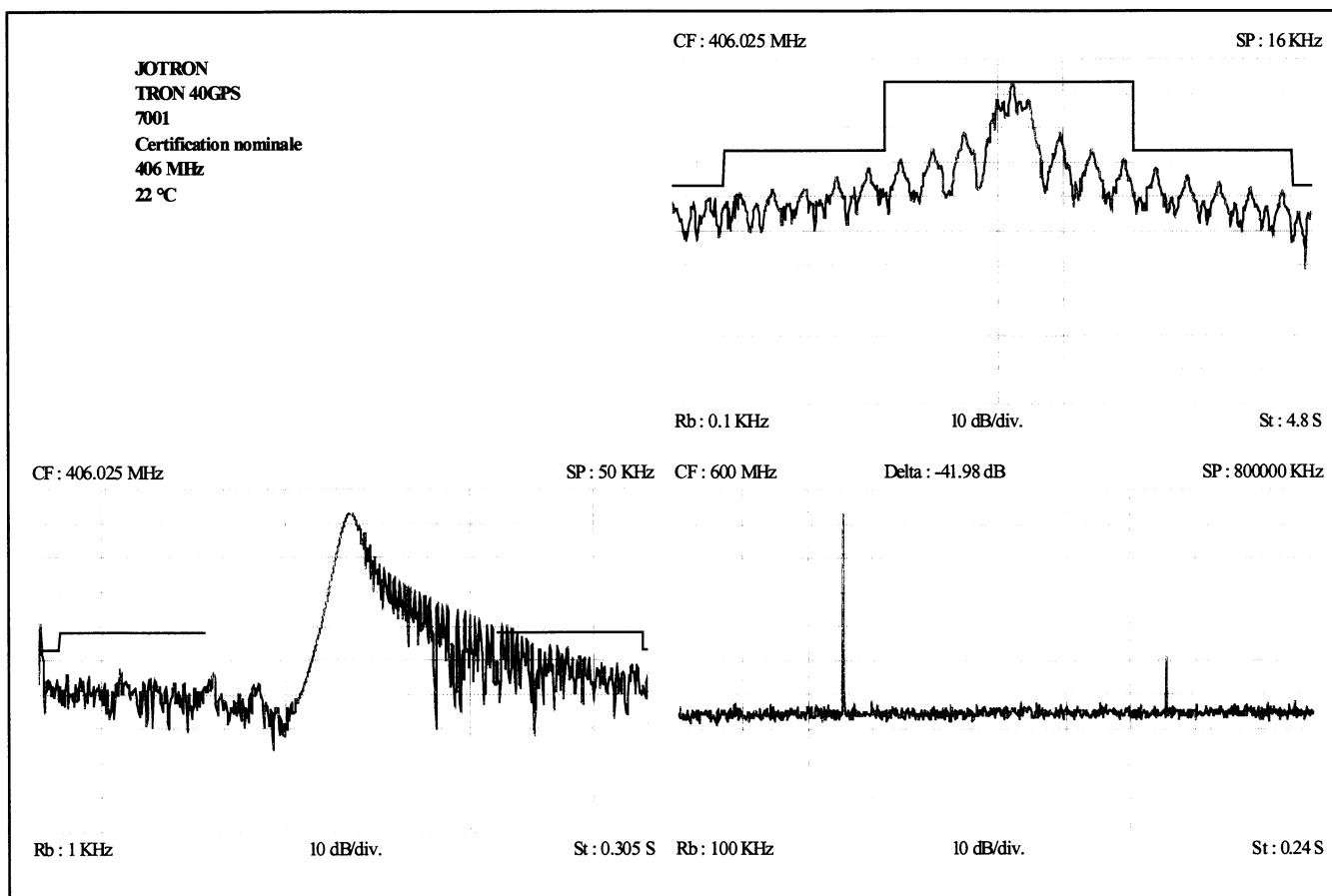
The graphs of spurious and harmonic measurements for the 406 MHz and 121.5 MHz signals are reported next pages :

| Temperature ( °C ) | Result                                                                                                             | Page         |
|--------------------|--------------------------------------------------------------------------------------------------------------------|--------------|
| - 20 °C            | <b>OK</b> after manufacturer's modification on rise/fall time of the 406 MHz modulation (see pages 10.9 and 10.10) | 10.3 to 10.4 |
| + 22 °C            | <b>OK</b> after manufacturer's modification on rise/fall time of the 406 MHz modulation (see pages 10.9 and 10.10) | 10.5 to 10.6 |
| + 55 °C            | <b>OK</b> after manufacturer's modification on rise/fall time of the 406 MHz modulation (see pages 10.9 and 10.10) | 10.7 to 10.8 |

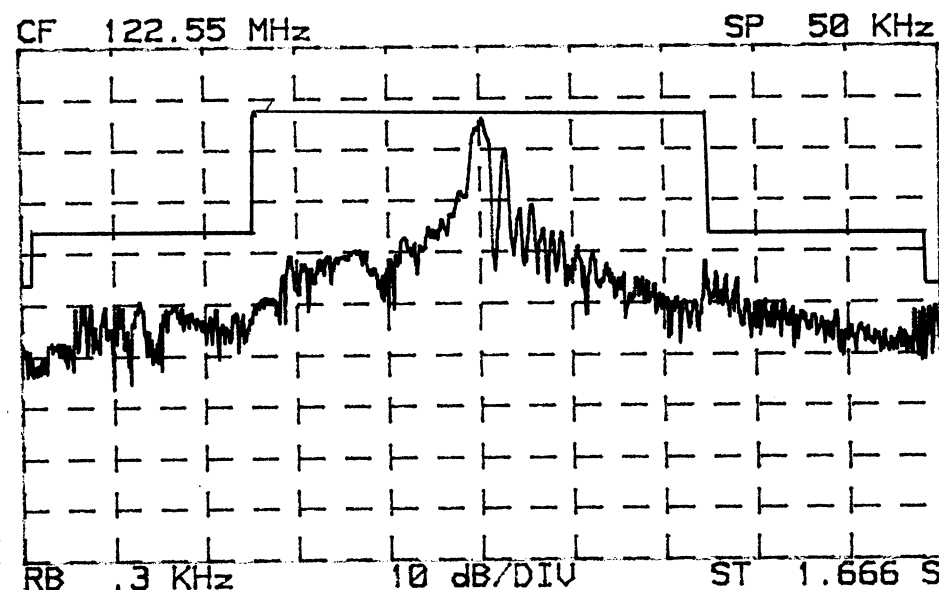
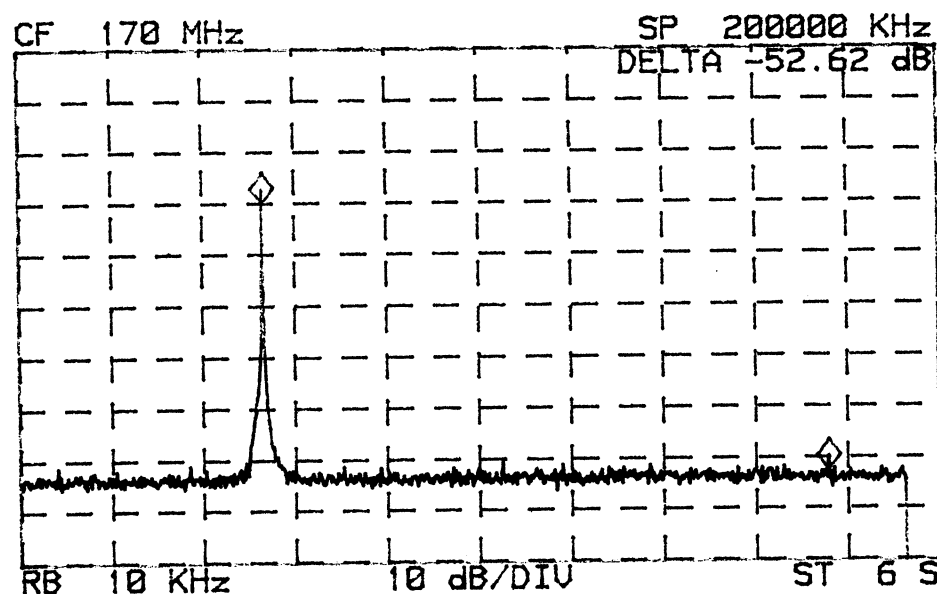
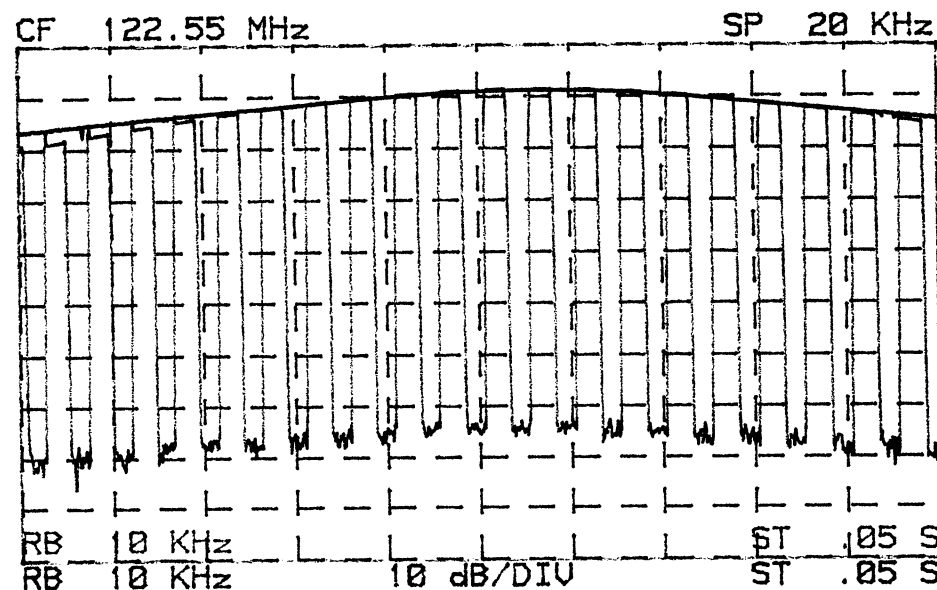


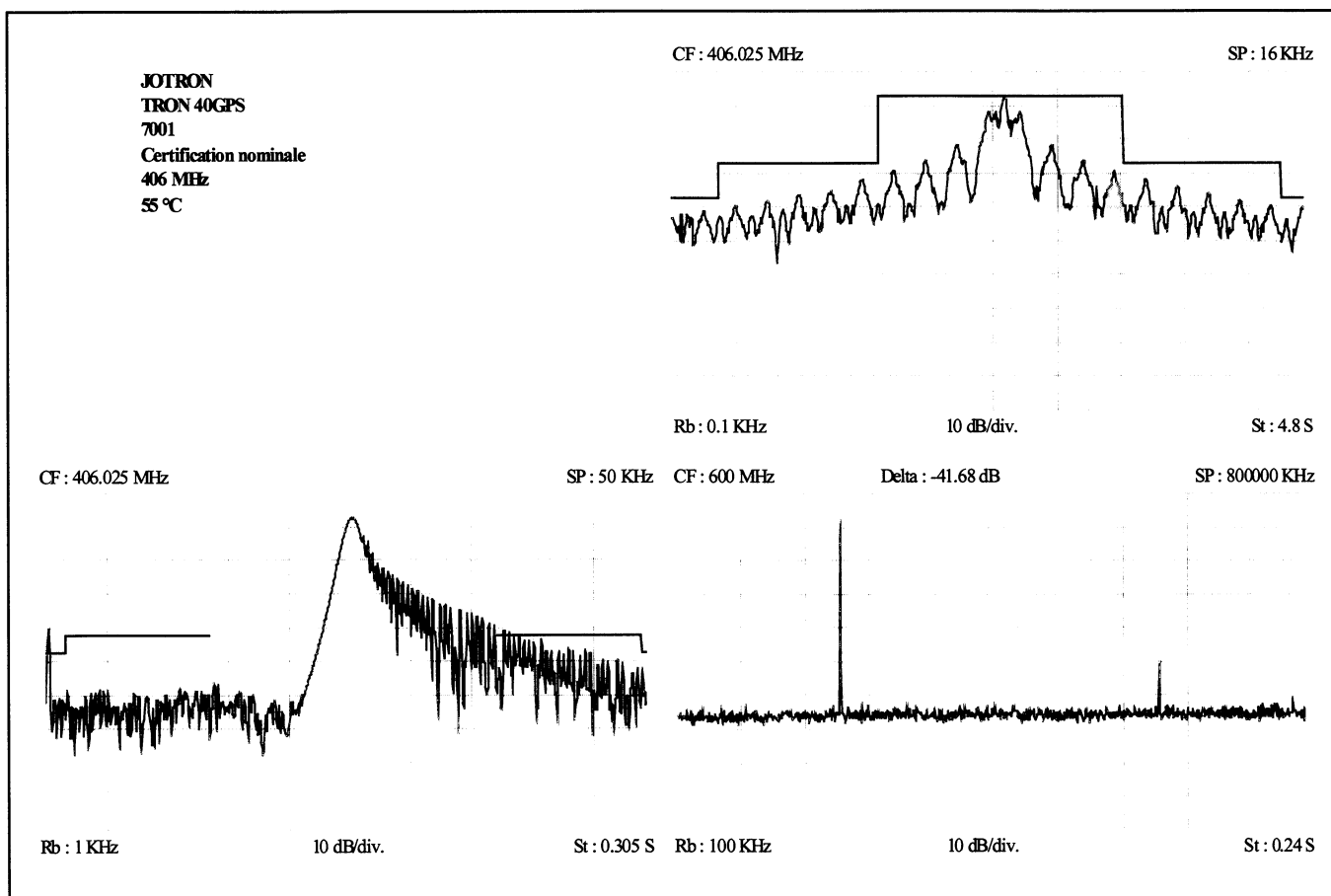
JOT  
TRON40GPS  
7001  
24 May 2000  
TEMP : -20 deg C



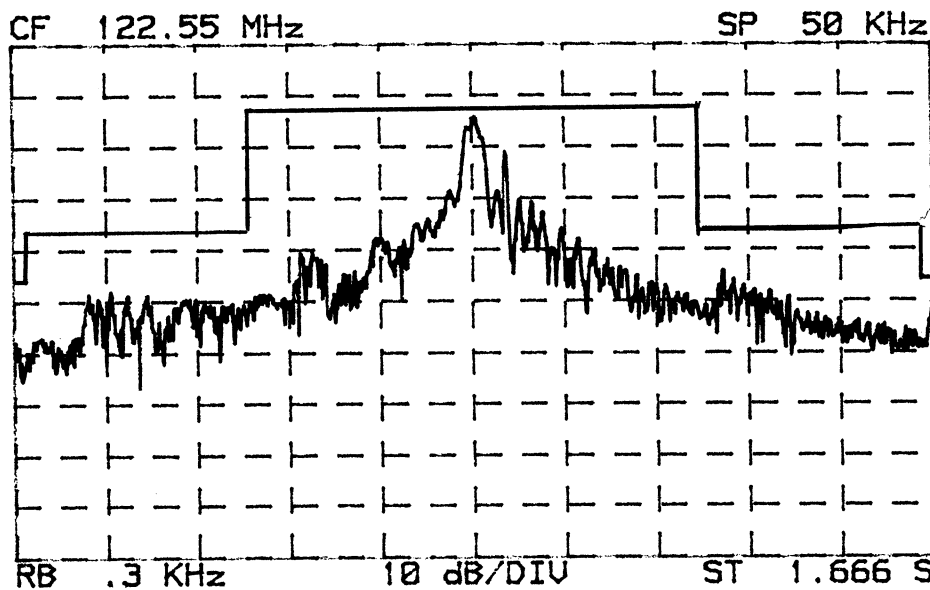
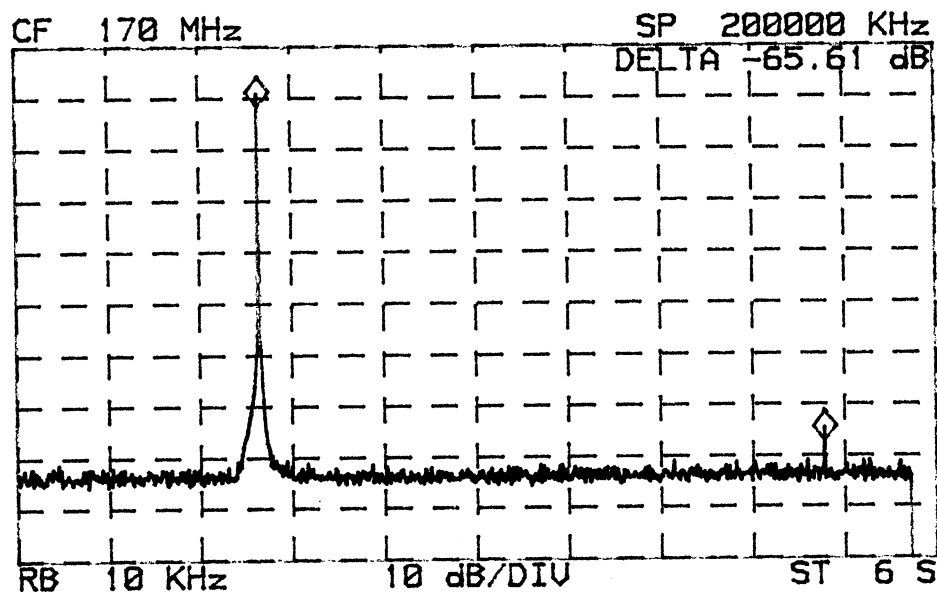
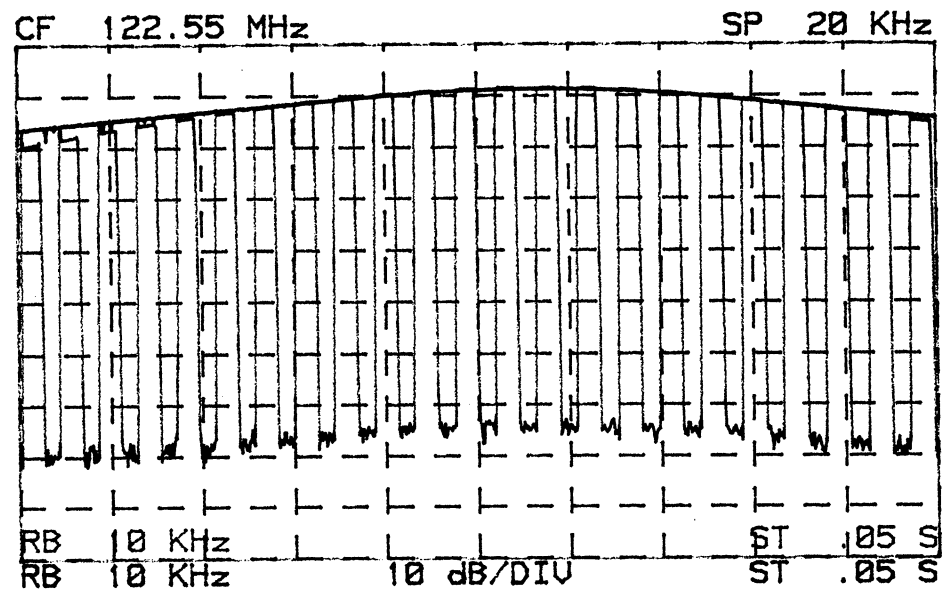


JOTRON  
TRON 40GPS  
7001  
18 May 2000  
TEMP : 22 deg C





JOTRON  
 TRON40GPS  
 7001  
 12 May 2000  
 TEMP : 55 deg C





INTESPACE  
Gérard Peyrou

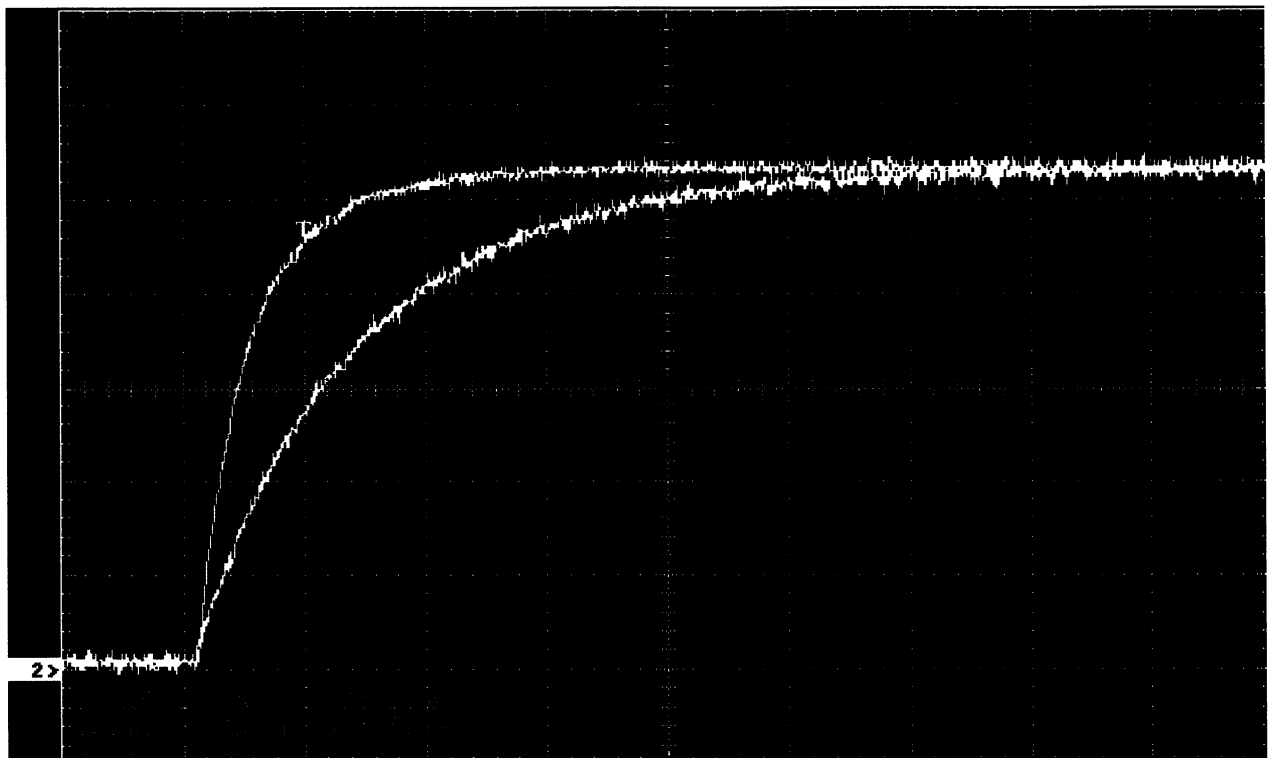
Deres ref.  
Your ref.  
e-mail 19.10.2000/G.Peyrou

Vår ref.  
Our ref.  
Fred I Tallaksen

Dato  
Date  
20.10.2000

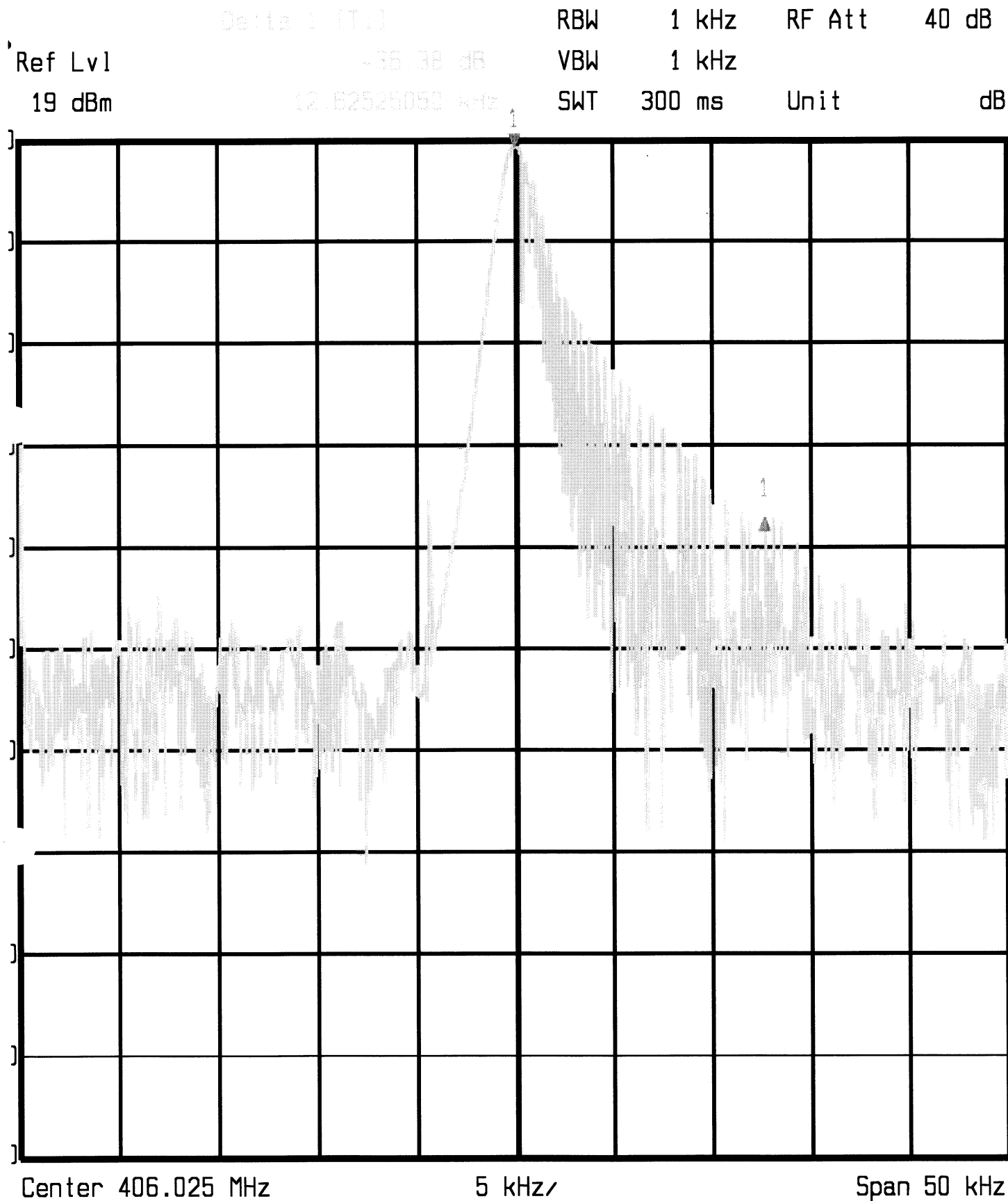
### Change of rise/fall time of the 406 MHz modulation

We have done a modification that we will introduce on all new beacon of type Tron40GPS regarding the rise/fall time of the modulation to suppress spurious effects. This is done by changing the capacitor C209 from 15nF to 47nF. This will be a stronger low pass filter consisting of R212 (10 k) and C209 (47 nF). Below is a printout from our oscilloscope of type TDS210 (registration number: JOT259, calibrated:16.8.2000). REFA is with 15nF capacitor, REFB is with 47 nF:



As seen on the curves, the rise time is increased from approx. 50 to 150 uS.  
JOTRON, Tjodalyng 20.10.2000

Fred Ivar Tallaksen



6.DEC.00 11:57:30