
	<p>Equipment in test</p> <p>PLB : Kannad XS3-GPS</p>	<p>INTESPACE Reference</p> <p>E7555-RTCM</p>
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## CHAPTER 6

### DROP TEST

	<p align="center"><b>Equipment in test</b></p> <p align="center"><b>PLB : Kannad XS3-GPS</b></p>	<p align="center"><b>INTESPACE Reference</b></p> <p align="center"><b>E7555-RTCM</b></p>
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### 6.1. DEFINITION OF TEST

Following section A6.0 of RTCM Recommended Standards for 406 MHz Satellite PLBs  
(Version 1.1 Feb 4, 2003) :

The EUT is soaked at minimum stowage temperature (-40°C) for 2 hours .

- Before five minutes after removal from a temperature the EUT is dropped 6 times above the test surface :

- height : 1 meter (  $\pm$  10 mm )
- orientation : following 6 faces
- hard surface : piece of oak ( 600 x 500 x 200 mm / weight : 50 Kg ).

- Upon completion of drop tests, an exterior and interior mechanical inspection and aliveness test are performed .

### 6.2. EQUIPMENT UNDER TEST


Beacon Unit	:	1/2 (with 50 ohm output)	2/2 (normal fitted PLB)
Name	:	MARTEC / KANNAD	MARTEC / KANNAD
Type	:	XS3 GPS	XS3 GPS
Number	:	UT1	UT2

### 6.3. TEST SITE

Toulouse Space Center (C.S.T.) - INTESPACE Metrological Laboratory.

### 6.4. TEST EQUIPMENT

- Oven,
- Drop bench ( see photos § 6.5 ),
- Argos-Cospas/Sarsat Certification test bench

	<p>Equipment in test</p> <p>PLB : Kannad XS3-GPS</p>	<p>INTESPACE Reference</p> <p>E7555-RTCM</p>
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## 6.5. PHOTOGRAPHS

### 6.5.1 During Drop Test




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	<p><b>Equipment in test</b></p> <p><b>PLB : Kannad XS3-GPS</b></p>	<p><b>INTESPACE Reference</b></p> <p><b>E7555-RTCM</b></p>
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#### 6.5.1 After Drop Test : Mechanical Inspection



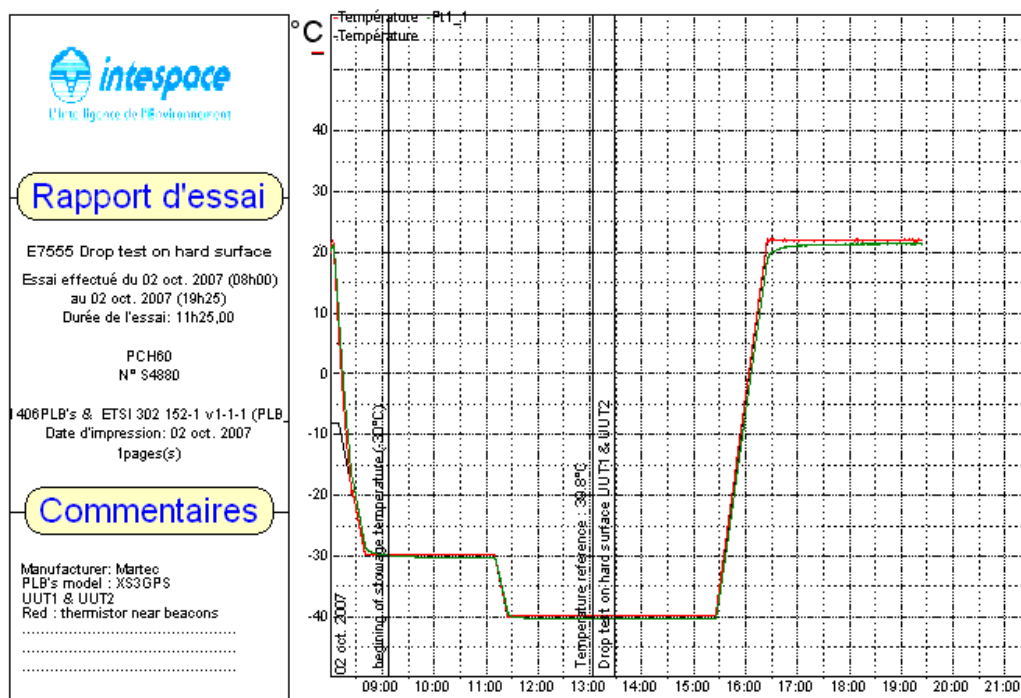
	<p align="center"><b>Equipment in test</b></p> <p align="center"><b>PLB : Kannad XS3-GPS</b></p>	<p align="center"><b>INTESPACE Reference</b></p> <p align="center"><b>E7555-RTCM</b></p>
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## 6.6. TEST RESULTS

### 6.6.1 Test implementation

Place : INTESPACE Laboratory

Date	Hour	Events - Observations
2007/10/02	9:00	Cooling the beacon to - 40° C in temperature controlled oven
	13:00	Beacon removed of oven.
	13:01	UT1 Beacon dropped on hard surface following 6 beacon orientations. ( Photos )
	13:10	UT2 Beacon dropped on hard surface following 6 beacon orientations
	13:50	Exterior and Interior Mechanical inspection : OK .( Photo )
	14:00	UT2 Self test mode checks : OK
	14:50	UT1 Aliveness Electrical checks : OK See result of aliveness test next page



	<b>Equipment in test</b>  <b>PLB : Kannad XS3-GPS</b>	<b>INTESPACE Reference</b>  <b>E7555-RTCM</b>
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## 6.6.2 ALIVENESS TEST RESULTS AFTER DROP TEST ON HARD SURFACE

Beacon Unit : 1/2 (with 50 ohm output)  
 Name : MARTEC / KANNAD  
 Type : XS3\_GPS  
 Number : UT1

**Certification Test at 22°C**

Date of test : 02-oct-2007

Manufacturer : MARTEC / KANNAD

Beacon Type : XS3-GPS

Number : UT1 after\_Drop

### Message

Message received		FFFE2F8E3E2293E07FDFFDF6D23783E0F66C
Format Flag	25	1
Protocol flag	26	0
Ident./Position code	27-85	0
Country Code/Country	27-36	227 / FRANCE
Protocol Code : U/Std-Nat	37-39/37-40	1110
Protocol Code Used	37-39/37-40	Test-Standard Location
Identification Data	40-85/41-64/41-58	
Identification Used		0
Calculated BCH1	25-85	17DB48
Encoded BCH1	86-106	17DB48
Homing	112	1
Em.cod/nat.use/supp.data	107-112	110111
Encod pos data	111	1 Internal
Fixed Data "1"	108	1 OK
Calculated BCH2	107-132	66C
Encoded BCH2	133-144	66C
Latitude position		Nord 127,75° 0' 60"
Longitude position		Est 255,75° 0' 60"
Delta position		Default Position

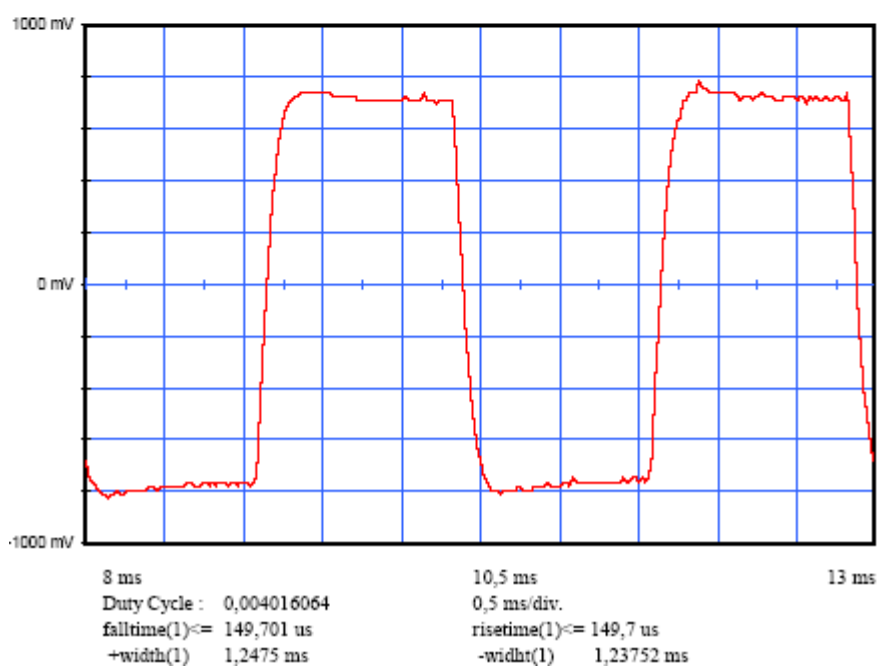
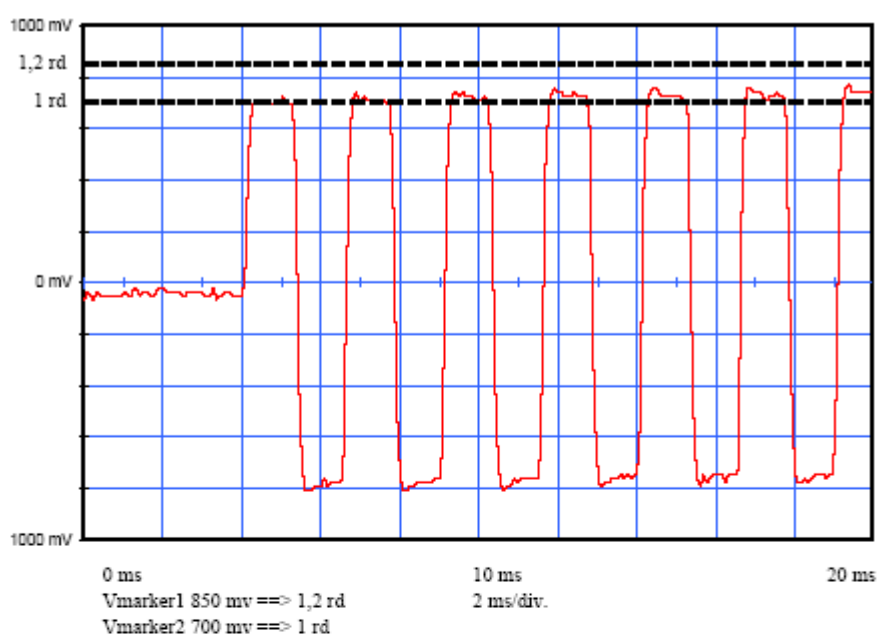
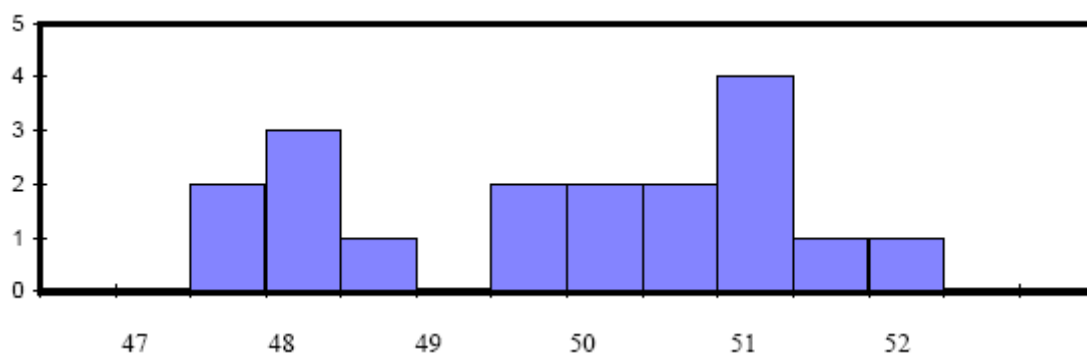
### Electrical and other parameters

CW preamble	ms	158,4 <	< 161,6	160,35
Total transmission time	ms	514,8 <	< 525,2	519,63
Modulation frequency	Hz	396 <	< 404	401,47
Phase deviation : total	rd		<= 2,40	2,15
Phase deviation : positive	rd	1,00 <	< 1,20	1,08
Phase deviation : negative	rd	-1,20 <	< -1,00	-1,08
Symmetry measurement	%		<= 5 %	0,40
Nominal frequency : F2	Hz			406027829,95
Short term2				6,51E-11
Short term3				1,48E-10
Slope				-6,87E-11
Residual				1,59E-10
406 MHz power output	dBm			36,0
Homing frequency	MHz			121,50
121,5 MHz power output	dBm			17,7
Soak temperature	°C			20,5
Extra feature				No
First Burst Delay		> 47,5 sec		< 50 sec



Equipment in test  
PLB : Kannad XS3-GPS

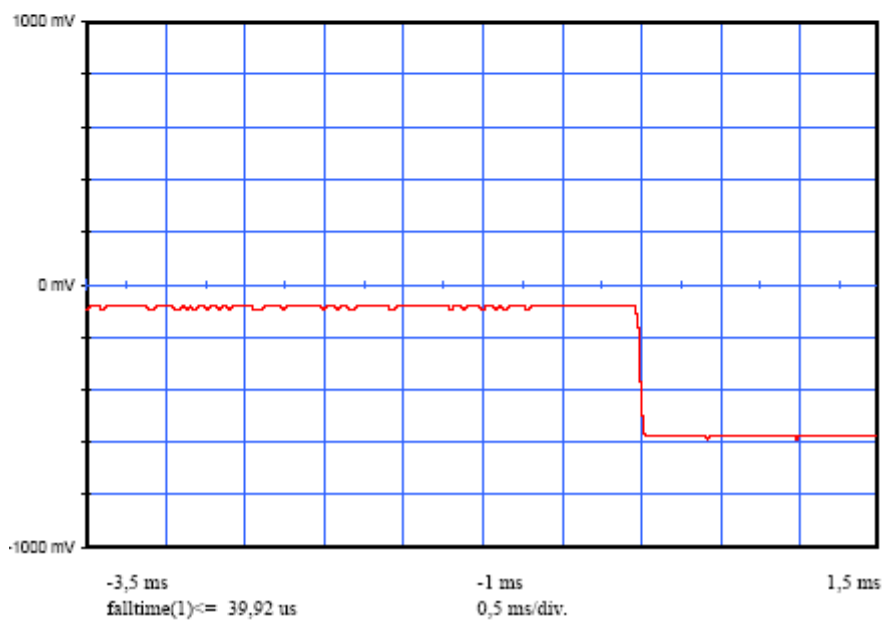
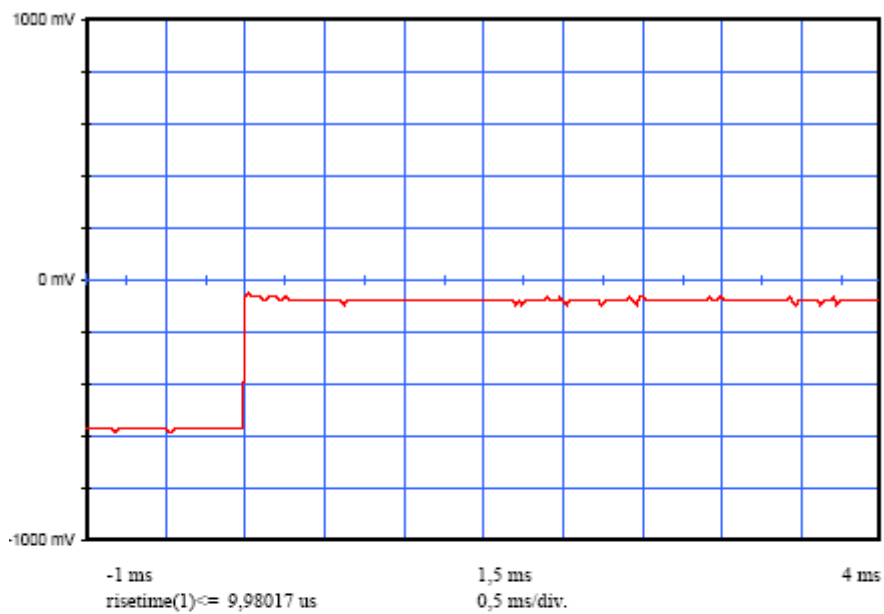
INTESPACE Reference  
E7555-RTCM






Equipment in test  
PLB : Kannad XS3-GPS

INTESPACE Reference  
E7555-RTCM





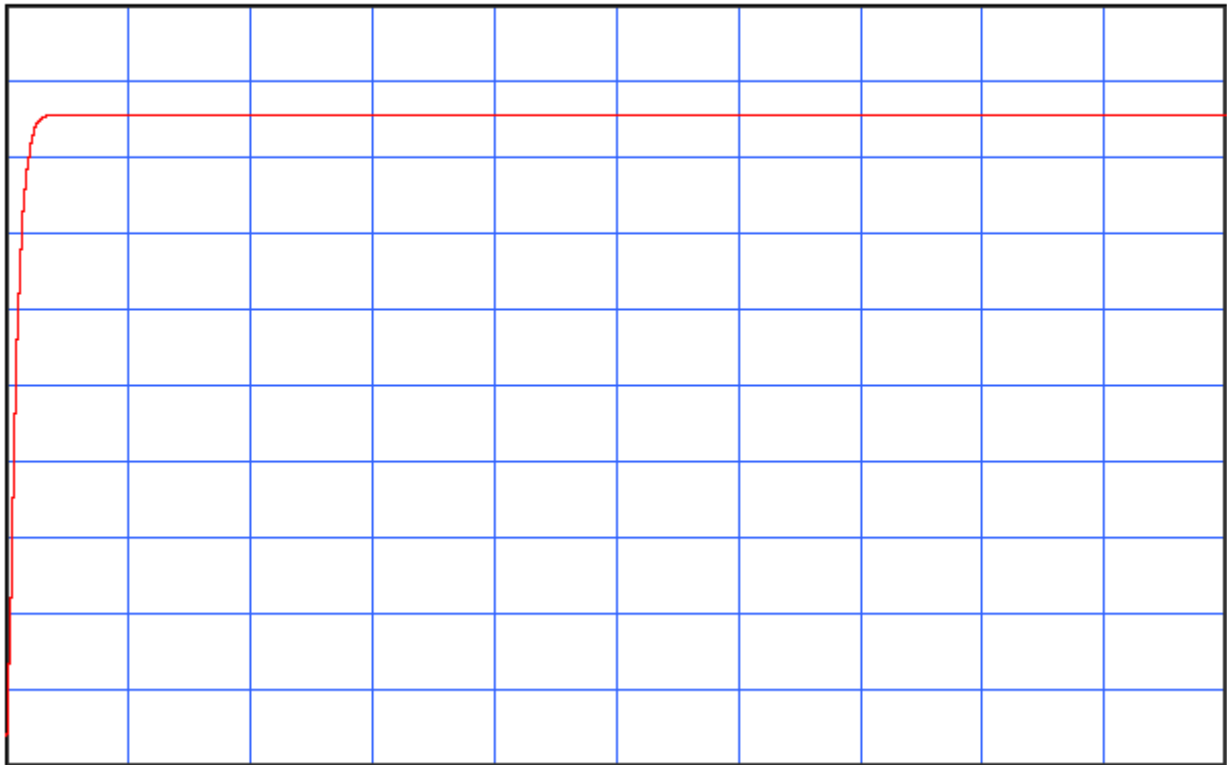
	<p>Equipment in test</p> <p>PLB : Kannad XS3-GPS</p>	<p>INTESPACE Reference</p> <p>E7555-RTCM</p>
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Output Power Risetime at 22°C

CF : 406,028 MHz

Output Power Risetime (1 ms before the burst) : -45,6 dBm

SP : 0 KHz



Rb : 1 KHz

10 dB/div.

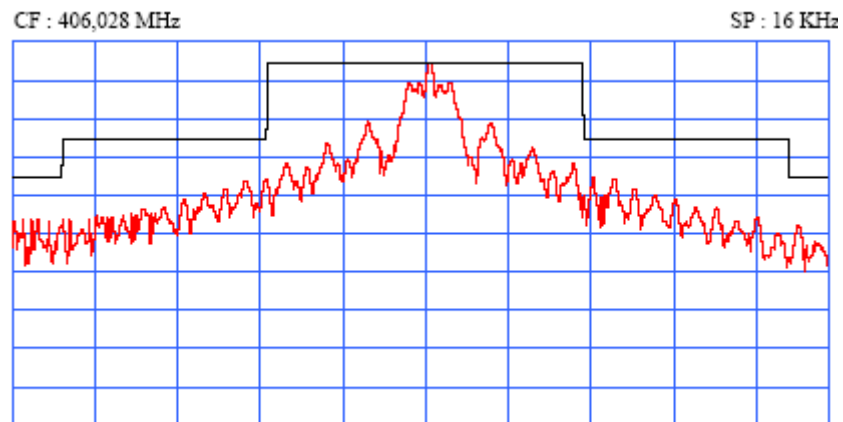
St : 0,05 S



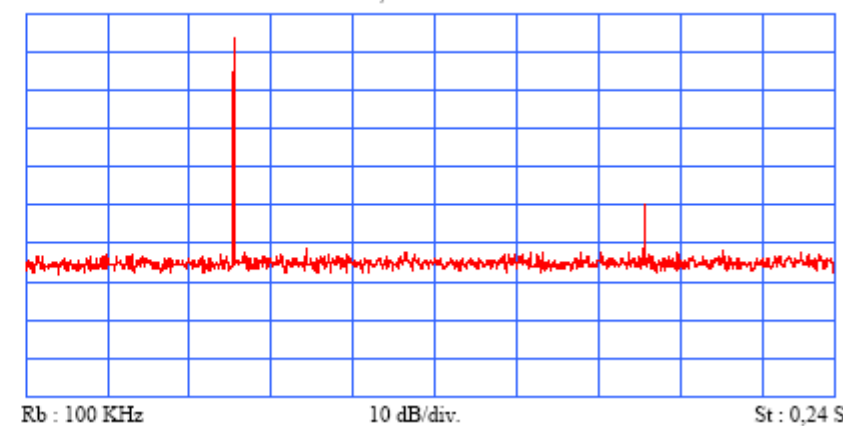
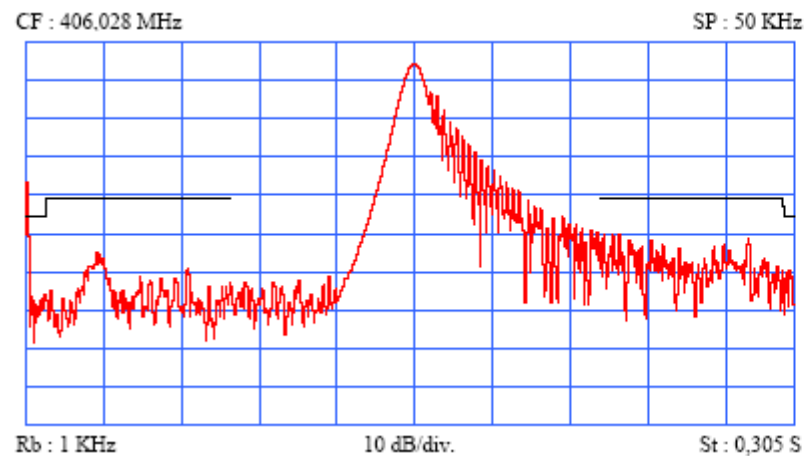
**Equipment in test**  
**PLB : Kannad XS3-GPS**


**INTESPACE Reference**  
**E7555-RTCM**

Spurious 406MHz



Rb : 0,1 KHz 10 dB/div. St : 4,8 S  
 CF : 600 MHz Delta : -43,67 dB SP : 800000 KHz

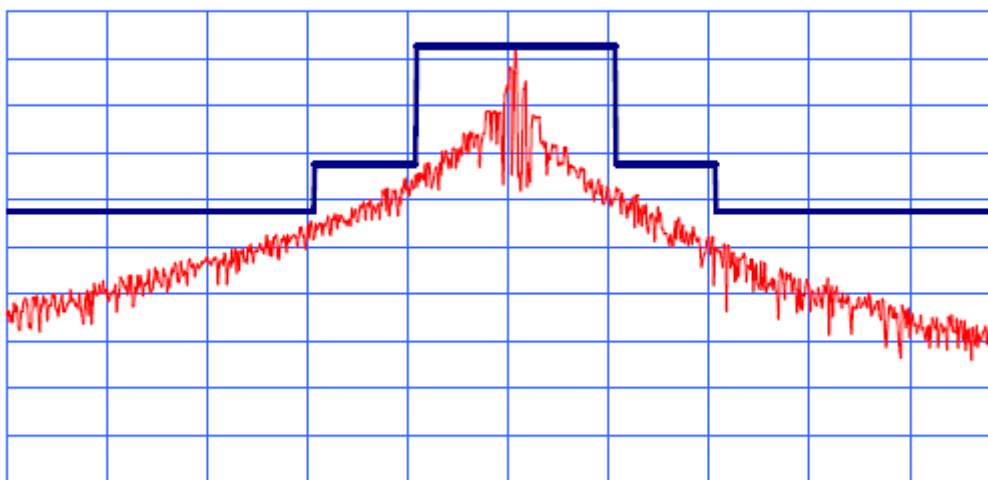


	<p>Equipment in test</p> <p>PLB : Kannad XS3-GPS</p>	<p>INTESPACE Reference</p> <p>E7555-RTCM</p>
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Spurious 121.5MHz

CF : 121,5 MHz

SP : 125 KHz



Rb : 0,1 KHz

10 dB/div.

St : 37,5 S