



Final Report Antennas 915 MHz

BT225-26

Client: Acura-Hidglobal

CONFIDENTIAL

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Ltda.

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I. Introduction

This report presents the test results of an Acura-Hidglobal antenna, at frequencies of 902 MHz, 915 MHz and 928 MHz.

The tests are automated and were performed in the Beta Telecom laboratories and anechoic chamber between May 11-13, 2026.

The photos in Figure 1 show the antennas upon receipt at the Beta Telecom laboratory.



Figure 1 - Antennas delivered to Beta Telecom`s lab.

Figure 2 shows the front and rear view of the antenna being tested.



Figure 2 - General vistas from the antenna (front and back).

II. Measurement Results

The diagram measures were done in the antenna's Farfield. The distance of the farfield is around 1.5m (<https://betatelecom.com.br/testewp/antenas-2/>). In the tests the distance used was 1.5m with angular variation of ± 180 degrees (401 points).

Figure 3 shows the test setup of the antenna in the far field inside Beta Telecom's anechoic chamber.



Figure 3 - Acura antenna setup in Beta Telecom's measurement system.

Figure 4 shows the coordinate system used in the antenna measurements. ZY is Azimuth plane and ZX is the elevation plane

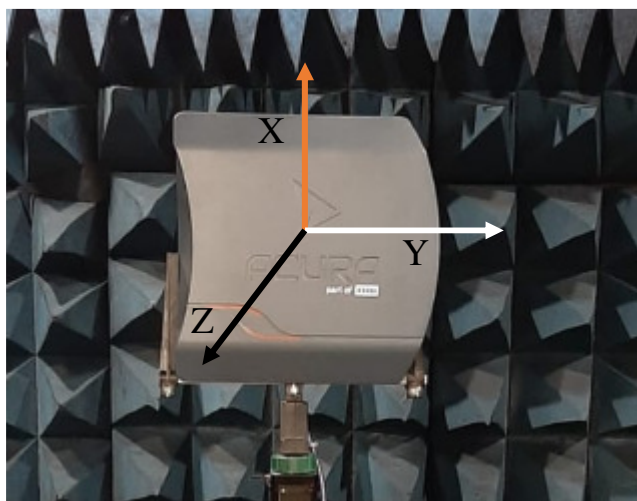


Figure 4 - Coordinate system for the Acura antenna tests.

The tests consisted of:

- a) Radiation pattern.
- b) Gain.
- c) Beamwidth.
- d) Cross Pol.
- e) Return loss.

The measurement accuracies are indicated in Table 1.

Table 1 – Measurement Accuracies

Measurement Type	Values	Configuration
Amplitude in diagrams		
-180 graus < θ < 180 graus	$\pm 1,5$ dB	Far field
Angles in diagrams		
180 graus < θ < 180 graus	$\pm 0,25$ graus	Far field

Table 2 presents a summary of the measurements performed. The related figures are presented below.

Table 2 – Results of Acura-Hidglobal Antenna

Antena Acura 902 MHz to 928 MHz			
Frequency (MHz)	902	915	928
Directivity AZ (dBi)	6.83	6.90	6.82
Directivity EL(dBi)	6.15	6.37	6.41
Directivity Total (dBi)	6.49	6.64	6.62
BW (-3dB) AZ (graus)	62.64	59.76	60.48
BW (-3dB) EL (graus)	66.96	61.20	61.92
Cross pol (dB)	15.4	12.23	10.73
Gain(dBi)	6,4	6,6	6,6

III. Results in Graphics

The diagrams were obtained with a second Acura-Hidglobal antenna as the transmitter.

The results for azimuth and elevation for the measured frequencies, as well as the values for directivity by integration, the beamwidth and the results of cross polarization are summarized in Table 2 and presented in Figures 5 to 10.

III.1 Antenna Azimuth

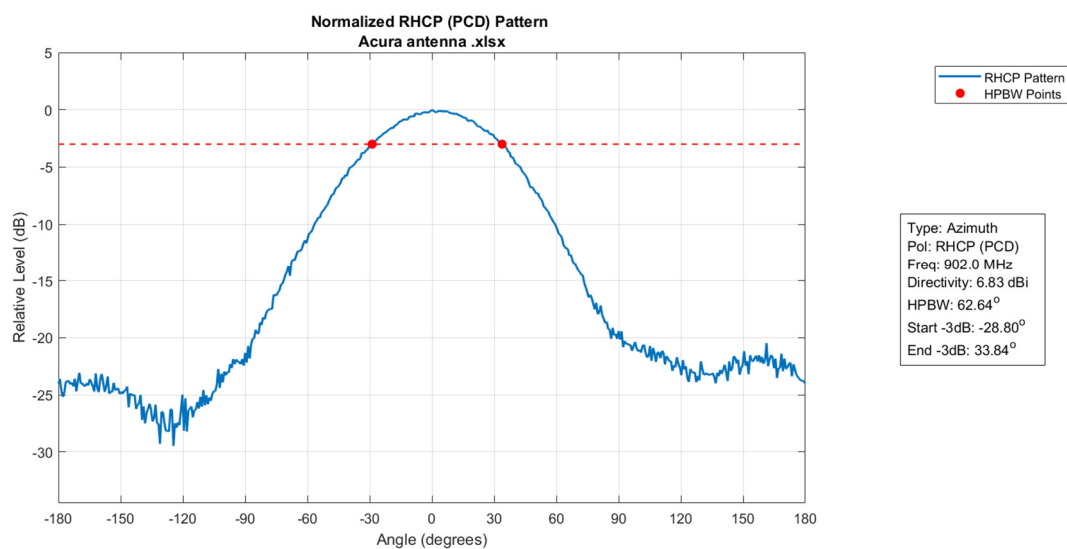


Figure 5 - Antena Acura-Hidglobal – Azimute - 902 MHz.

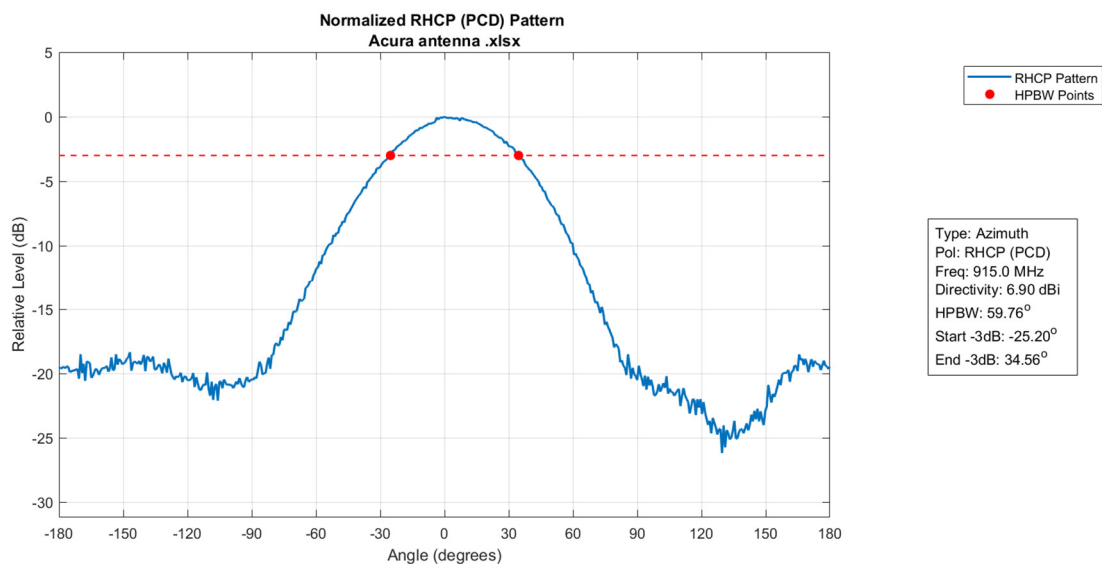


Figure 6 - Antena Acura-Hidglobal – Azimute - 915 MHz.

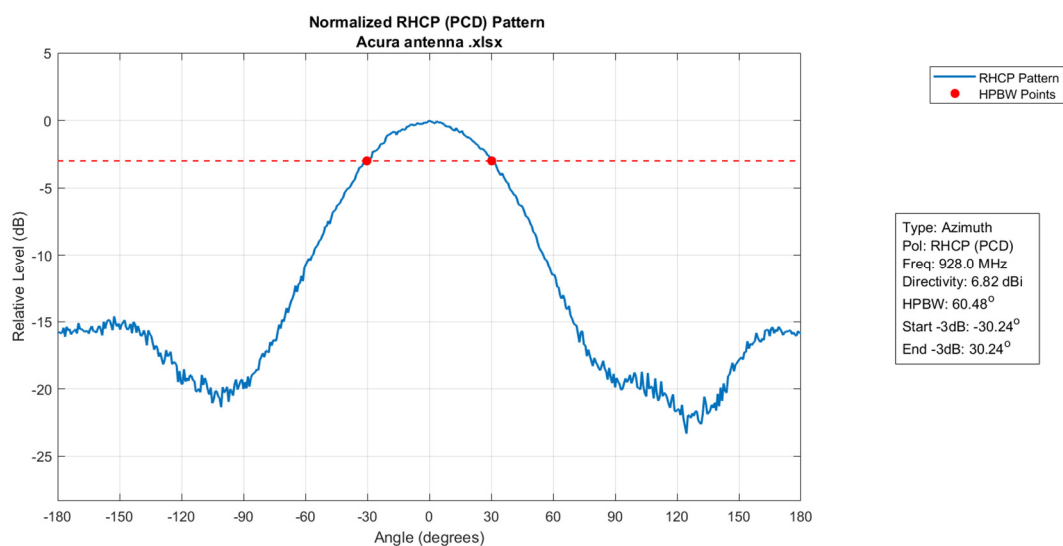


Figure 7 - Antena Acura-Hidglobal – Azimute - 928 MHz.

III.2 Antenna Elevation

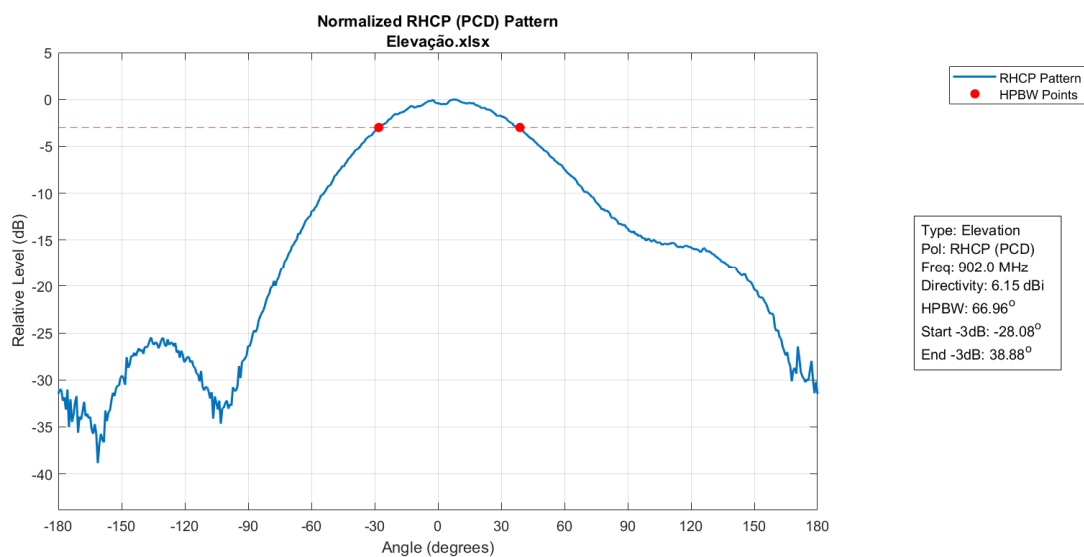


Figure 8 - Antena Acura-Hidglobal – Elevation - 902 MHz.

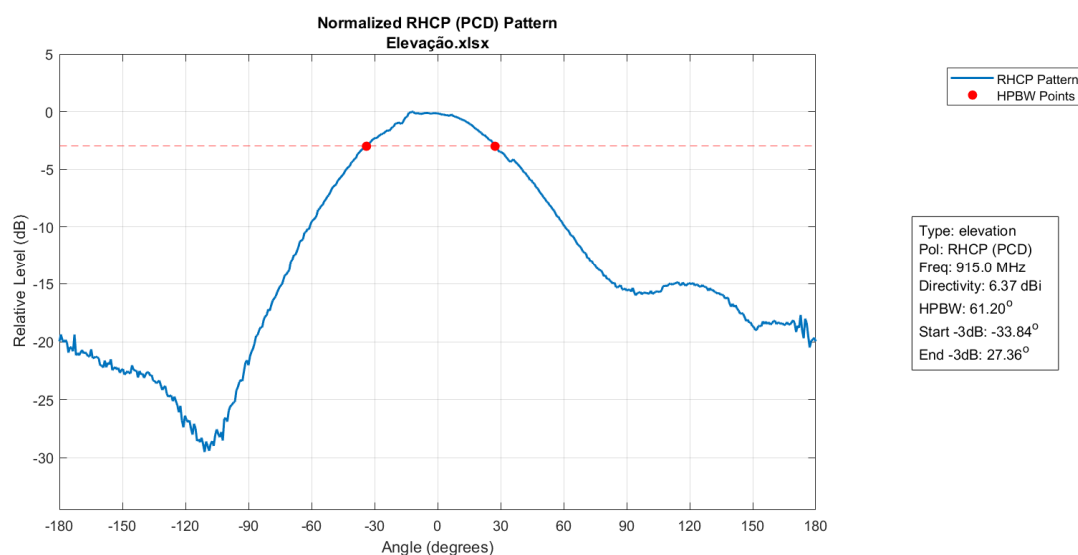


Figure 9 - Antena Acura-Hidglobal – Elevation - 915 MHz.

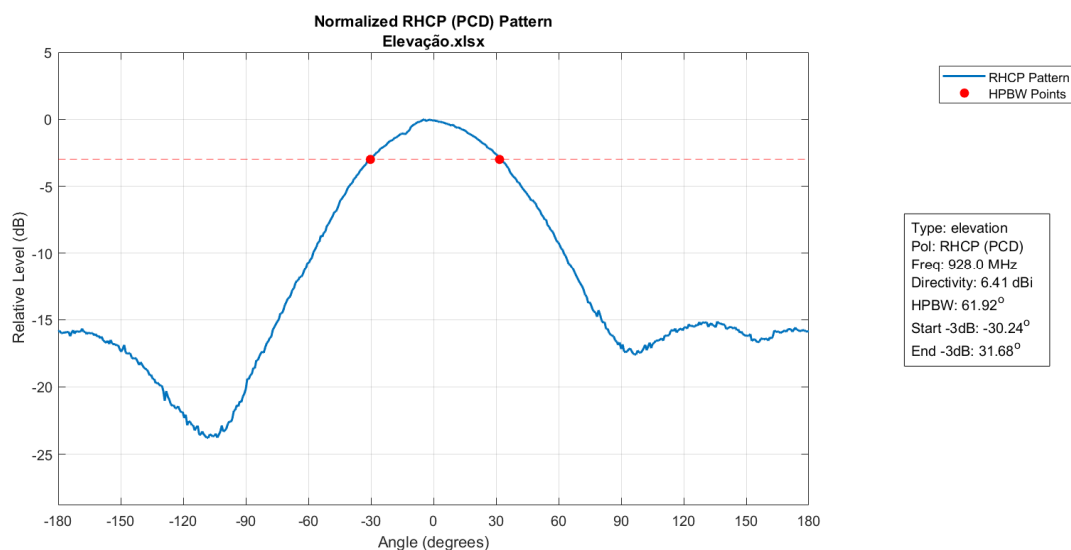


Figure 10 - Antena Acura-Hidglobal – Elevation - 928 MHz.

III.3 Return Loss

Figure 11 presents the return loss values measured of the Acura-Hidglobal antenna.

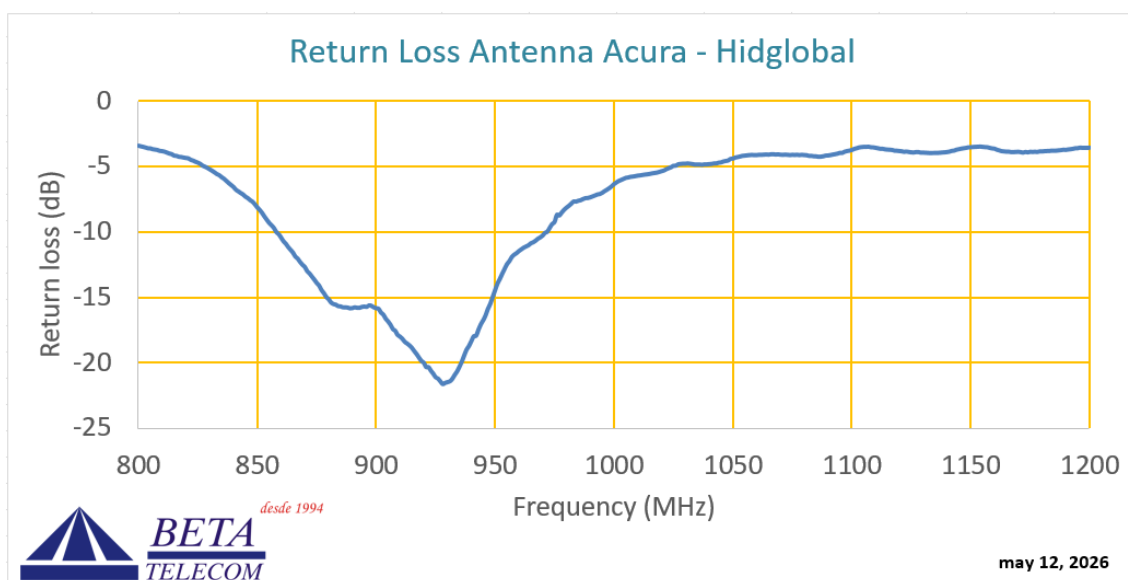


Figure 11 - Antena Acura-Hidglobal – Return Loss measured.

IV. Conclusions and Comments

The initial specifications of this antenna, provided by the client, are:

Table 3 – Specifications

Specification	Value
Model	Far Field PCB 150122
Frequency range	902-928 MHz
Gain (dBi)	6dBi
Polarization	Circular (RHCP)
Dimenssion	157x157x30 mm
Type	Patch

The Directivity of the azimuth and elevation diagrams are consistent with the specifications. However, it is noted that the cross-polarization appears to be improving with decreasing frequency. As a rough evaluation, we measured that the cross-polarization reaches values close to -20 dB near the 890 MHz frequency. This effect may be caused by the presence of the plastic cover on the antenna. The circular polarization detected in the tests is RHCP (Right Circular Polarization).

Table 4 – Equipment list

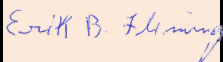
Item	Equipment	Model	Serial Number	Manufacturer	Certification validity
1	Spectrum analyzer	MSC2667C	6200158164	Anritsu	12 dec 2026
2	Vetorial Network Analyzer	HP8510B	2844A04623	HP	12 nov 2026

Responsible by the tests

Msc Eng. Wilton J. Fleming

	Antenna report – 902 to 928 MHz Acura Hidglobal	BT225-26

V. Document Properties.

			
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