Measurement Report for Antennas for Albatross

1 Antennas for Albatross

The measurements were performed on package substrate. RF probes were used to contact TX and RX antennas.
A four patch-array is used as transmit and receive antenna for Albatross B0.

1.1 Substrate

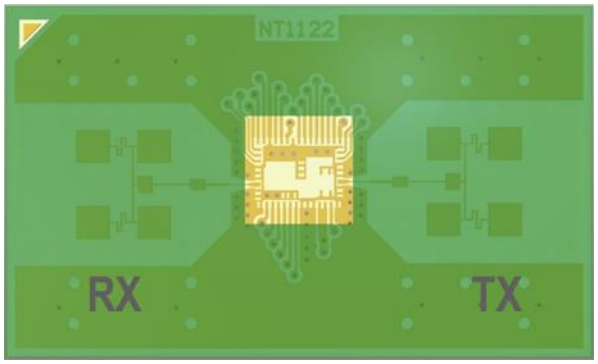

Figure 1 Picture of package substrate with antennas.

1.2 Antenna specification

Parameter	Min	Typ	Max	Unit	Remarks / Condition
Frequency range	116		123	GHz	
Total Efficiency	55		68	%	
Gain Tx (E-Plane)	8	10	11	dBi	@ Theta=0 deg
Gain Tx (H-Plane)	8	10	11	dBi	@ Theta=0 deg
Gain Rx (E-Plane)	8	10	11	dBi	@ Theta=0 deg
Gain Rx (H-Plane)	8	10	11	dBi	@ Theta=0 deg
Antenna aperture		60		°	

horizontal					
Antenna aperture vertical		60		°	
Boresight deviation (E-plane)	-10	0	+10	°	
Boresight deviation (H-plane)	-10	0	+10	°	
S-Parameters (Port1: Tx-Antenna, Port2: Rx-Antenna)	-19	-12	-5	dB	
Dimension Tx (x/y)		1.76/ 1.76		mm	Patch array without feeding line
Dimension Rx (x/y)		1.76/ 1.76		mm	Patch array without feeding line
Polarization					Linear

Measurement Results

1.3 RX antenna measurements

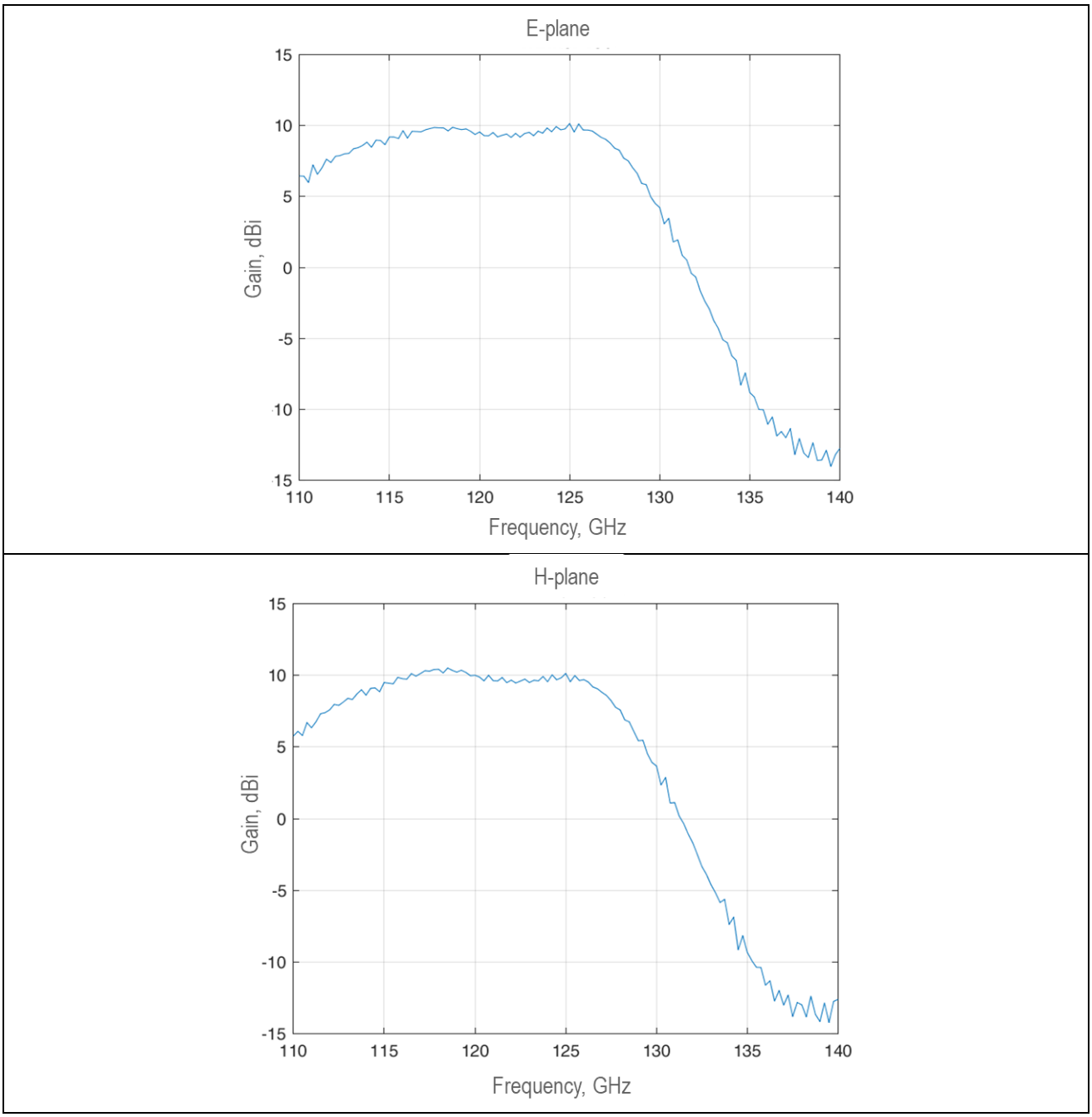

Figure 2 RX antenna gain vs frequency.

1.4 TX antenna measurements

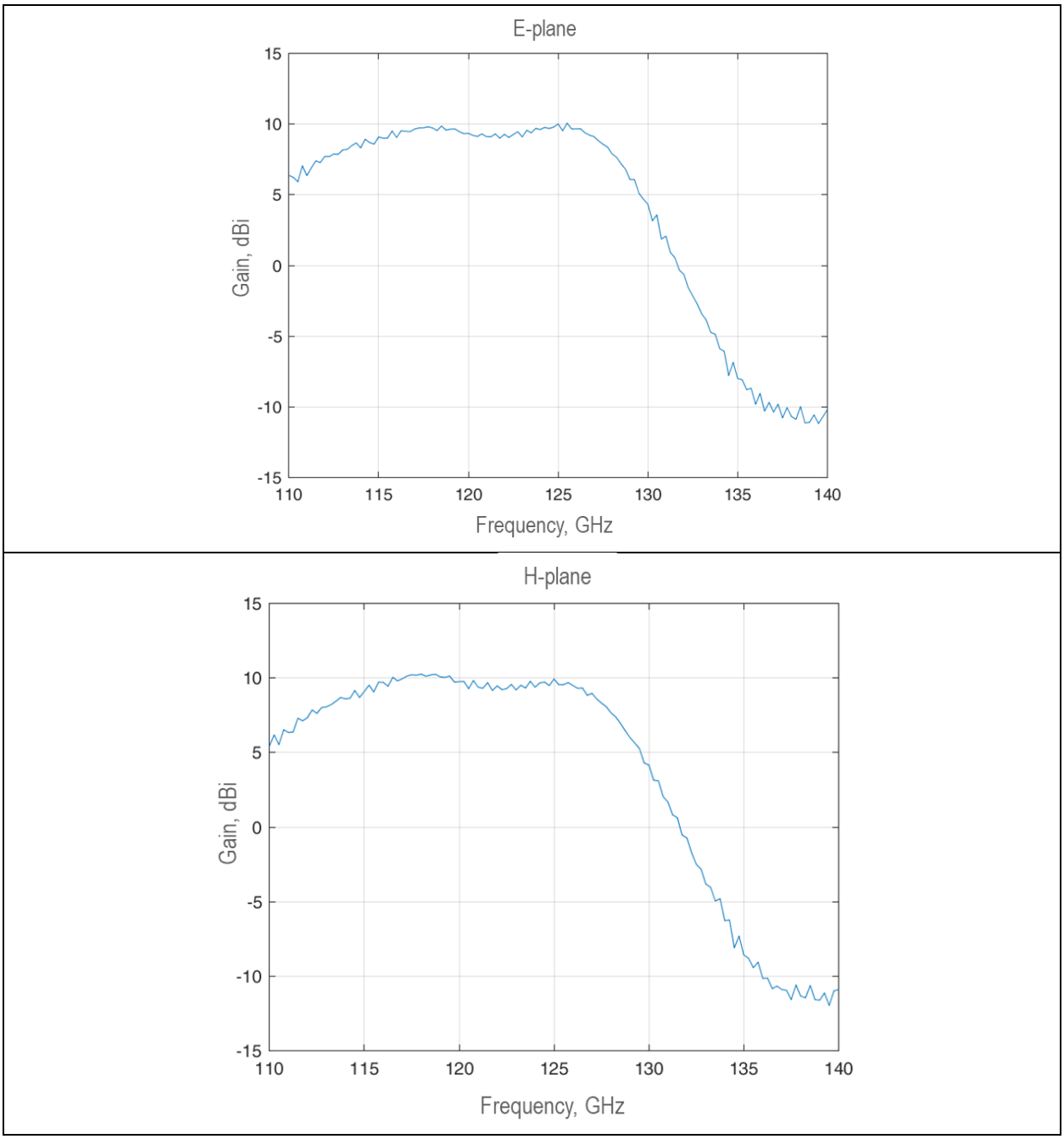

Figure 5 TX antenna gain vs frequency.