LG2851(C0) Display Module Antenna Specification

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LG2851-Antenna Specification

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1 Antenna Definition

LG2851 C0-Left and LG2851 C0-Right operate with array antenna sets for different polarization and beam direction in their package substrate, so called Antenna in Package (AiP). Each antenna set has own antenna element design and array configuration.

*Please refer to the operational description for this section in detail beacuase of the confidential information.

2 Antenna Specification

This chapter describes the array antenna specifications of LG2851, including operating frequency, radiation characteristics, return loss and antenna impedance of each array antenna sets.

Parameters			Min.	Typ.	Max.	Units
LG2851 C0-Left						
ANT 0	Antenna Type		Patch Array Antenna			
	Polarization		Horizontal Polarization			
	Operating Frequency		57.24		65.88	GHz
	Transmit mode	Number of Antenna Elements		16		
		Peak Realized Gain	17.1		19.5	dBi
		Peak Beam Direction (Phi/Theta)		0 / +91		Degree
		HPBW (Phi/Theta)		8.4 / 34.3		Degree
	Receive mode	Number of Antenna Elements		16		
		Peak Realized Gain	17.1		19.5	dBi
		Peak Beam Direction (Phi/Theta)		0 / +91		Degree
		HPBW (Phi/Theta)		8.4 / 34.3		Degree
	Return Loss				-10	dB
	Impedance			50		Ohm
ANT 1	Antenna Type		Dipole Array Antenna			
	Polarization		Horizontal Polarization			
	Operating Frequency		57.24		65.88	GHz
	Transmit mode	Number of Antenna Elements		8		
		Peak Realized Gain	12.7		13.7	dBi
		Peak Beam Direction (Phi/Theta)		0 / +162		Degree
		HPBW (Phi/Theta)		10.7 / 114		Degree
	Receive mode	Number of Antenna Elements		10		
		Peak Realized Gain	12.5		14.4	dBi
		Peak Beam Direction (Phi/Theta)		0 / +160		Degree
		HPBW (Phi/Theta)		8.8 / 112		Degree
	Return Loss				-10	dB
	Impedance			50		Ohm

	Antenna Type	Monopole Array Antenna				
	Polarization	Horizontal Polarization				
	Operating Frequency		57.24		65.88	GHz
ANT 2	Transmit mode	Number of Antenna Elements		3		
		Peak Realized Gain	7.0		7.7	dBi
		Peak Beam Direction (Phi/Theta)		-88 / +90		Degree
		HPBW (Phi/Theta)		98 / 30		Degree
	Receive mode	Number of Antenna Elements		3		
		Peak Realized Gain	7.0		7.7	dBi
		Peak Beam Direction (Phi/Theta)		-88 / +90		Degree
		HPBW (Phi/Theta)		98 / 30		Degree
	Return Loss				-10	dB
	Impedance			50		Ohm

Parameters			Min.	Typ.	Max.	Units
LG2851 C0-Right						
ANT 0	Antenna Type		Patch Array Antenna			
	Polarization		Horizontal Polarization			
	Operating Frequency		57.24		65.88	GHz
	Transmit mode	Number of Antenna Elements		16		
		Peak Realized Gain	17.1		19.5	dBi
		Peak Beam Direction (Phi/Theta)		0 / +91		Degree
		HPBW (Phi/Theta)		8.4 / 34.3		Degree
	Receive mode	Number of Antenna Elements		16		
		Peak Realized Gain	17.1		19.5	dBi
		Peak Beam Direction (Phi/Theta)		0 / +91		Degree
		HPBW (Phi/Theta)		8.4 / 34.3		Degree
	Return Loss				-10	dB
	Impedance			50		Ohm
ANT 1	Antenna Type		Monopole Array Antenna			
	Polarization		Vertical Polarization			
	Operating Frequency		57.24		65.88	GHz
	Transmit mode	Number of Antenna Elements		8		
		Peak Realized Gain	11.9		12.5	dBi
		Peak Beam Direction (Phi/Theta)		0 / -140		Degree
		HPBW (Phi/Theta)		11.5 / 126		Degree
	Receive mode	Number of Antenna Elements		10		
		Peak Realized Gain	10.3		13.3	dBi
		Peak Beam Direction (Phi/Theta)		0 / -142		Degree
		HPBW (Phi/Theta)		8.9 / 128		Degree
	Return Loss				-10	dB
	Impedance			50		Ohm
ANT 2	Antenna Type		Monopole Array Antenna			
	Polarization		Horizontal Polarization			
	Operating Frequency		57.24		65.88	GHz
	Transmit mode	Number of Antenna Elements		3		
		Peak Realized Gain	7.0		7.7	dBi
		Peak Beam Direction (Phi/Theta)		88 / +90		Degree

		HPBW (Phi/Theta)		98 / 30		Degree
	Receive mode	Number of Antenna Elements		3		
		Peak Realized Gain	7.0		7.7	dBi
		Peak Beam Direction (Phi/Theta)		88 / +90		Degree
		HPBW (Phi/Theta)		98 / 30		Degree
	Return Loss				-10	dB
	Impedance			50		Ohm

3 Radiation Pattern

This chapter describes simulated beam patterns of each array antenna set. Normalized beam patterns are represented for transmit and receive mode with uniform phase control. The coordinate of beam pattern and main beam direction of each antenna set is summarized below.

*Please refer to the operational description for this section in detail beacuase of the confidential information.

3.1 LG2851 C0-Left (Transmit Mode)
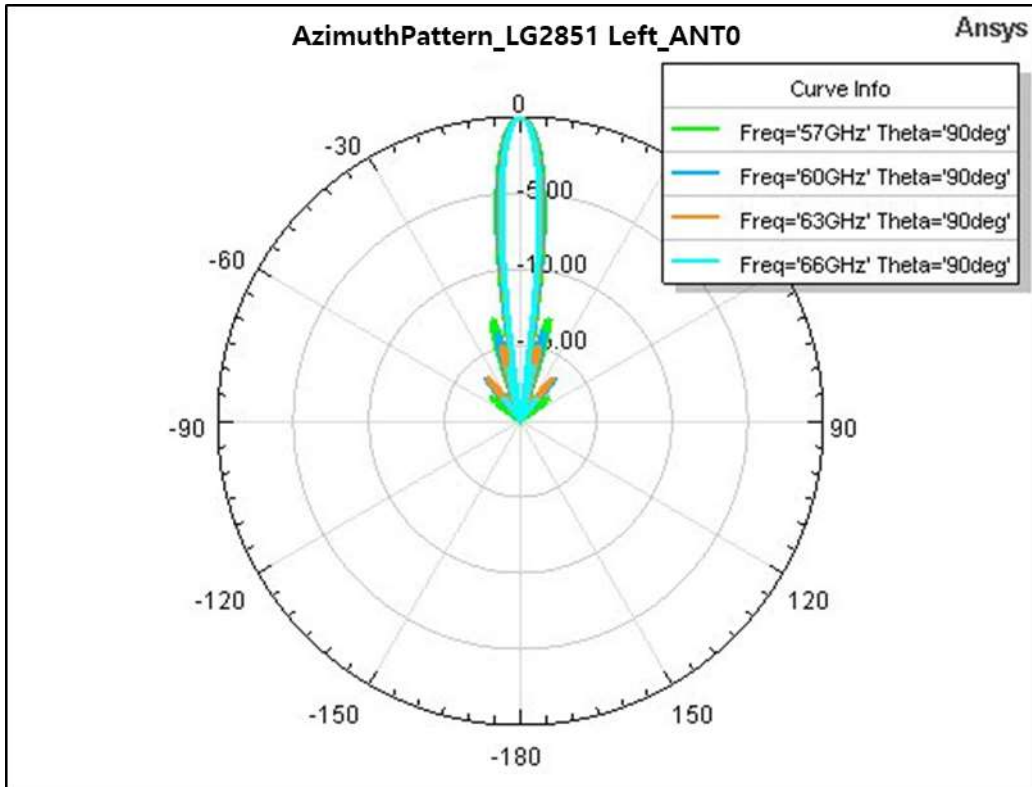
ANT 0 : Azimuth (X-Y plane) beam pattern
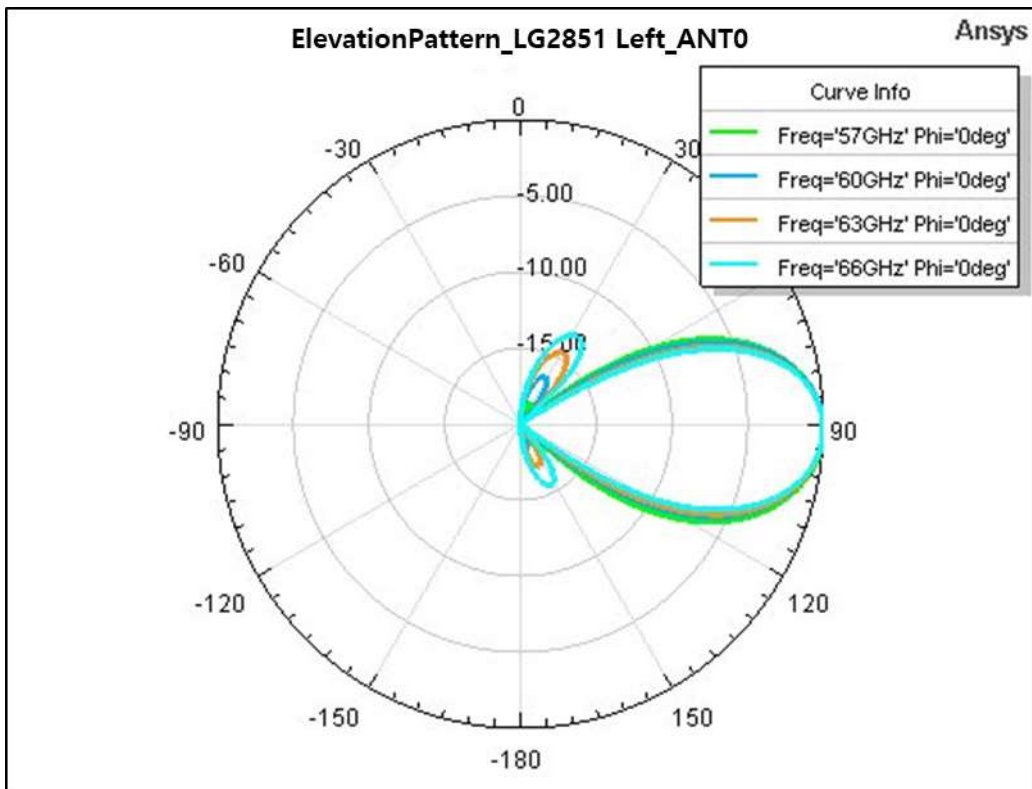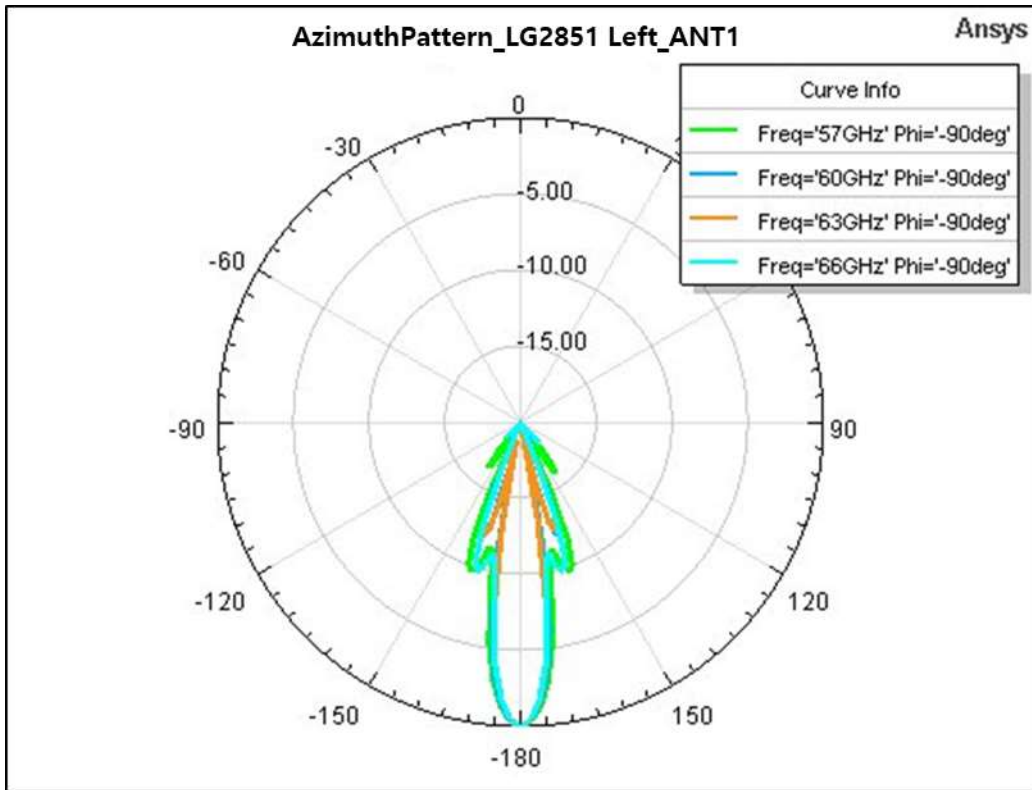
ANT 0 : Elevation (X-Z plane) beam pattern

ANT 1 : Azimuth (Y-Z plane) beam pattern
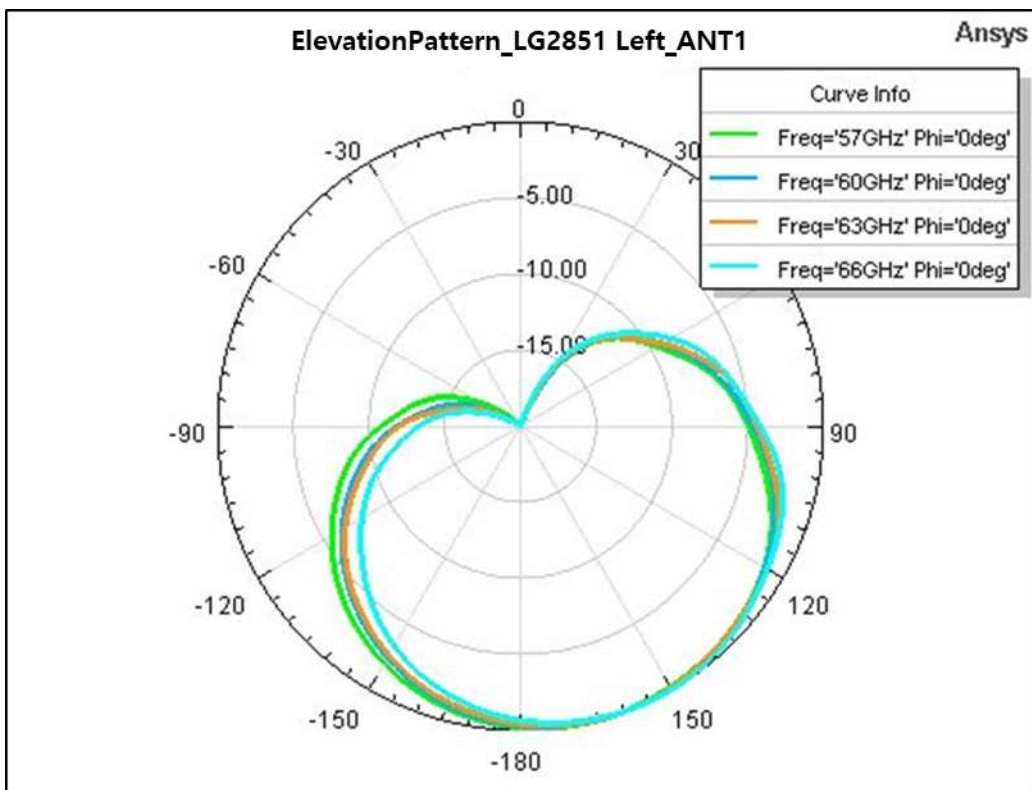
ANT 1 : Elevation (X-Z plane) beam pattern
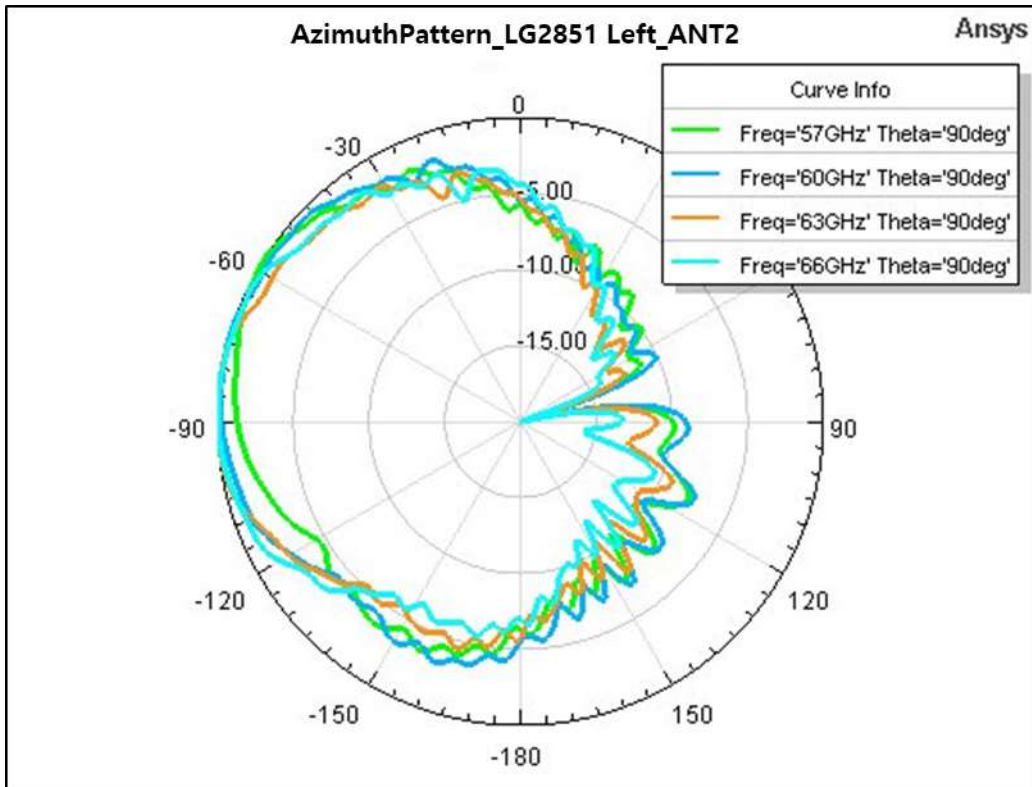
ANT 2 : Azimuth (X-Y plane) beam pattern
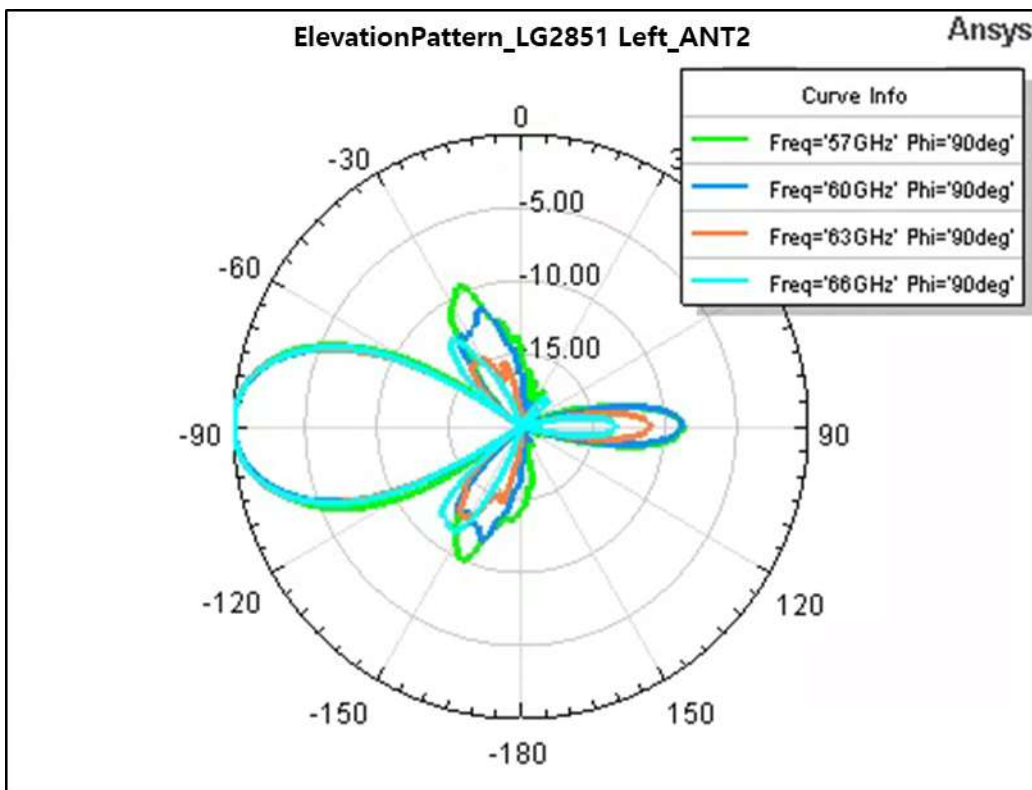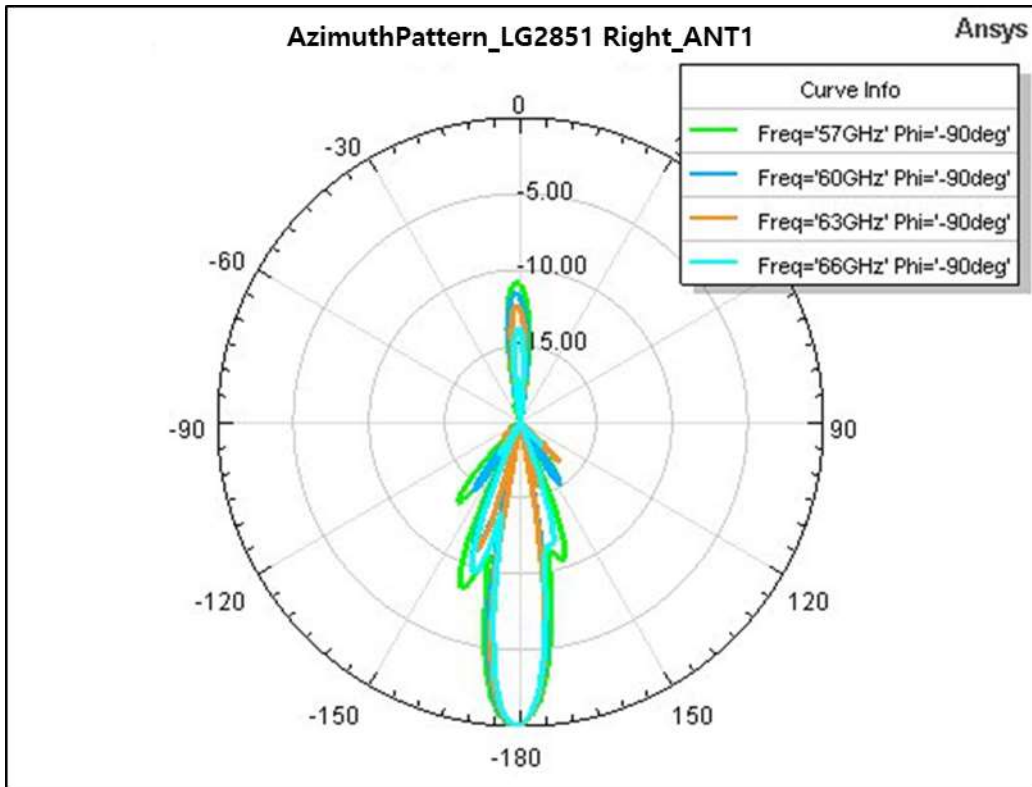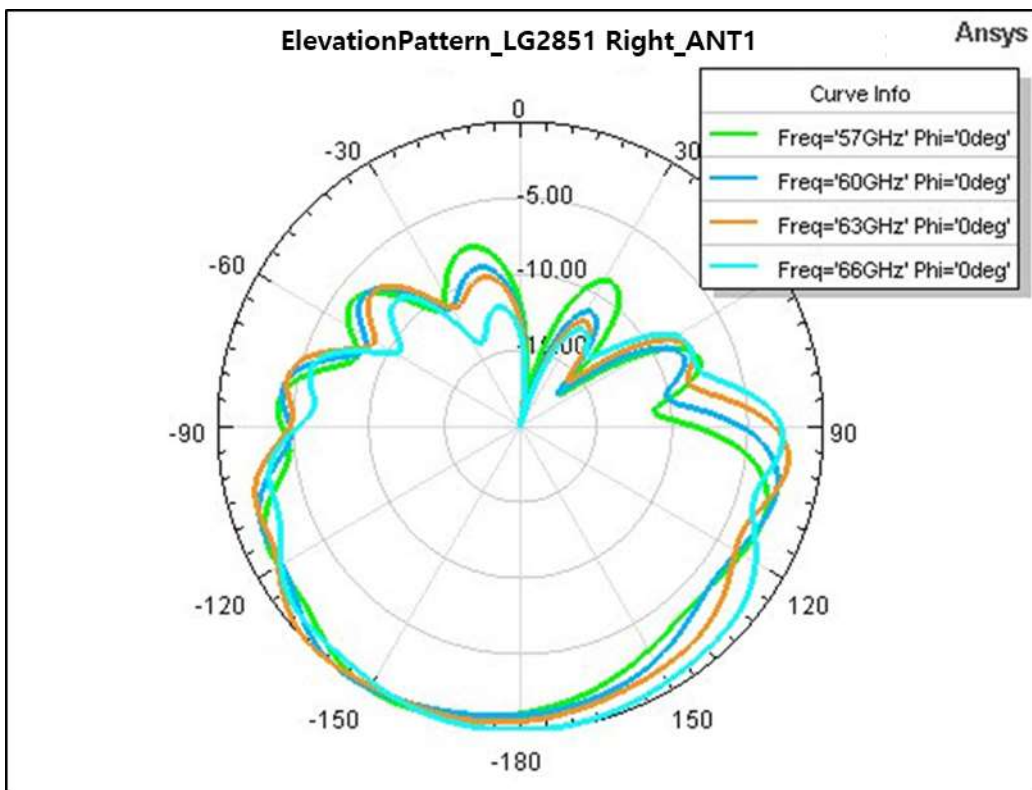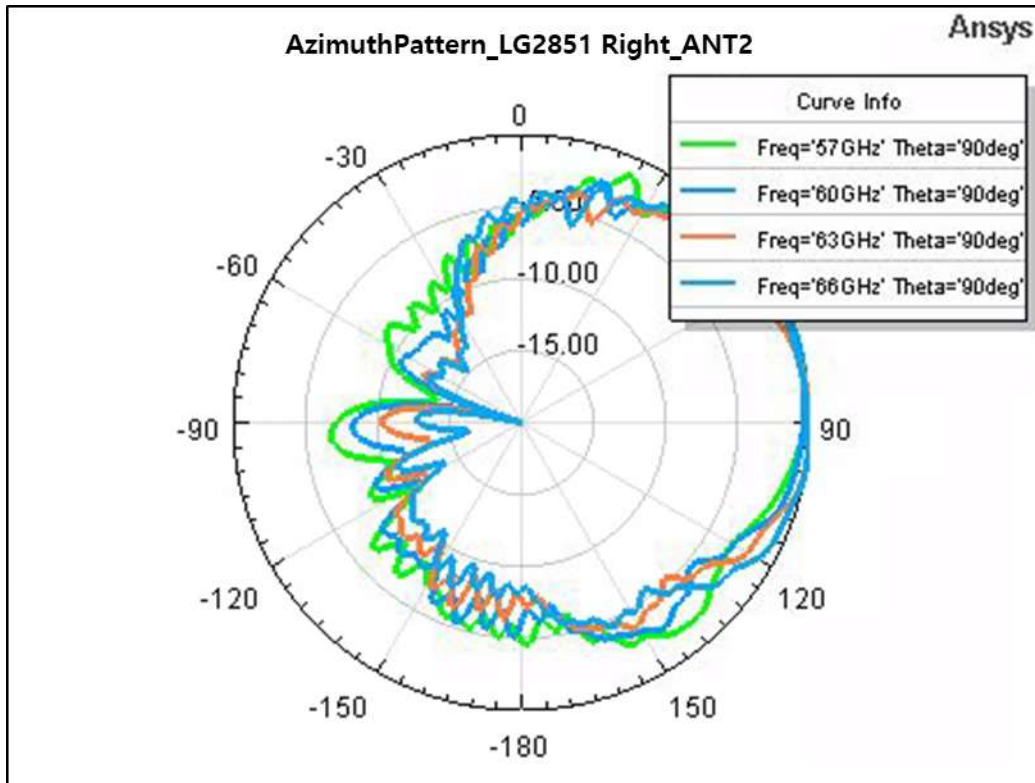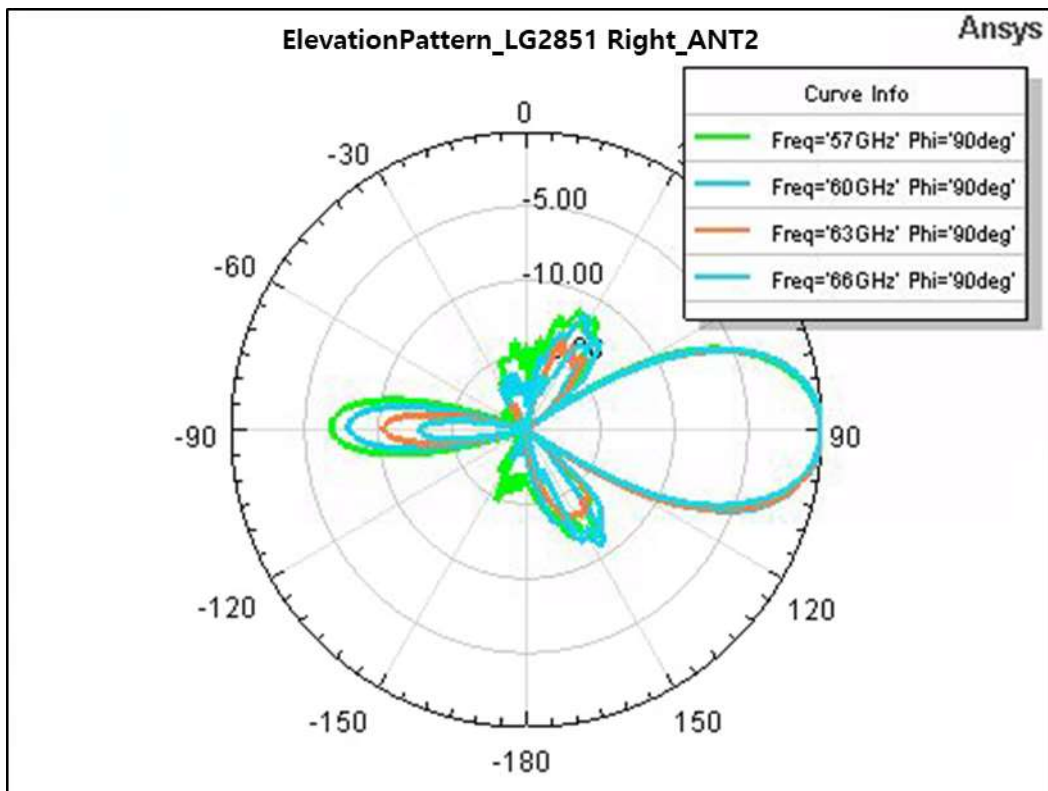

ANT 2 : Elevation (X-Z plane) beam pattern

3.2   LG2851 C0-Left (Receive Mode)
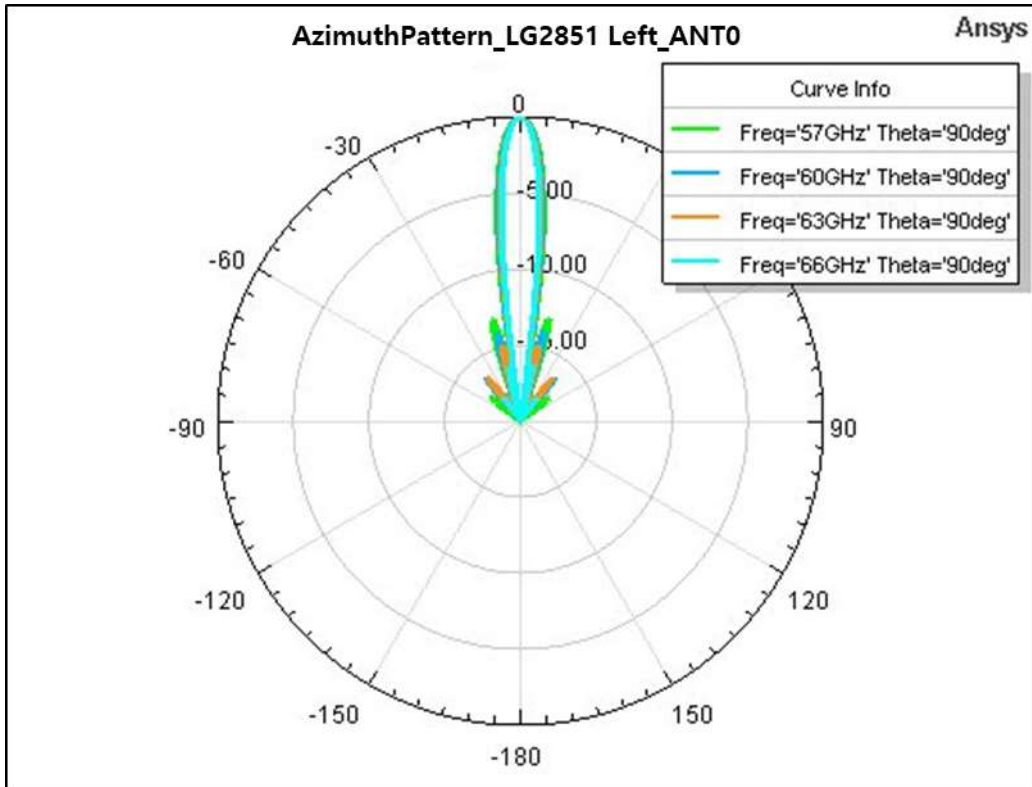
ANT 0 : Azimuth (X-Y plane) beam pattern
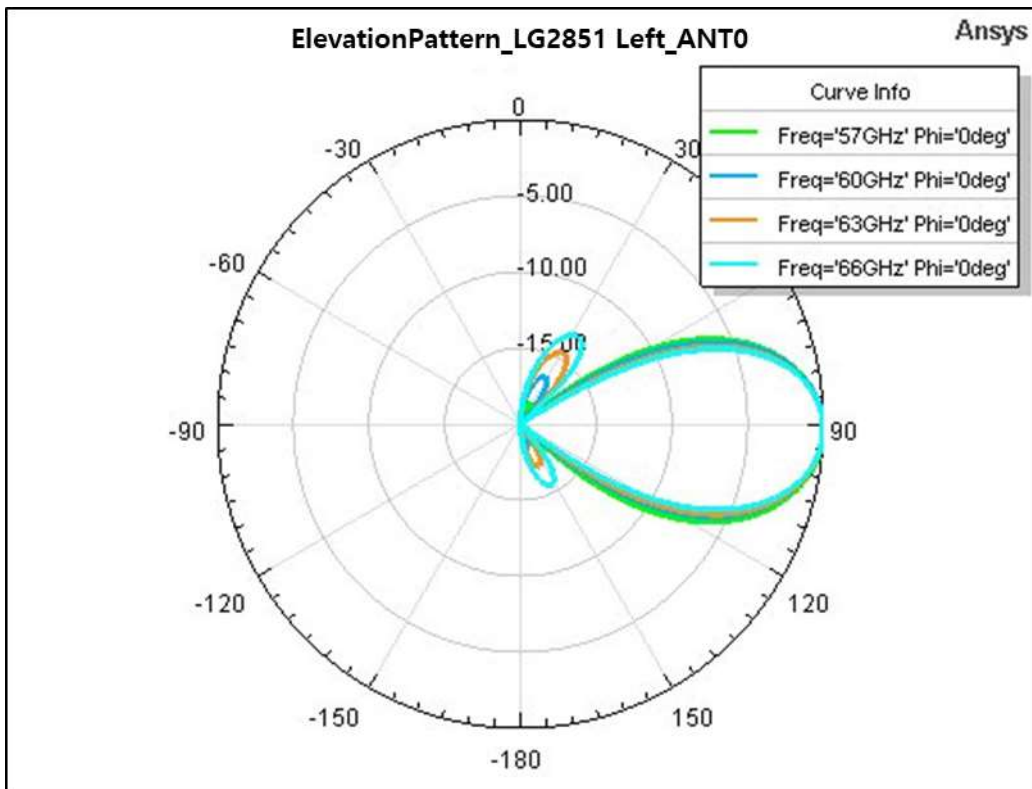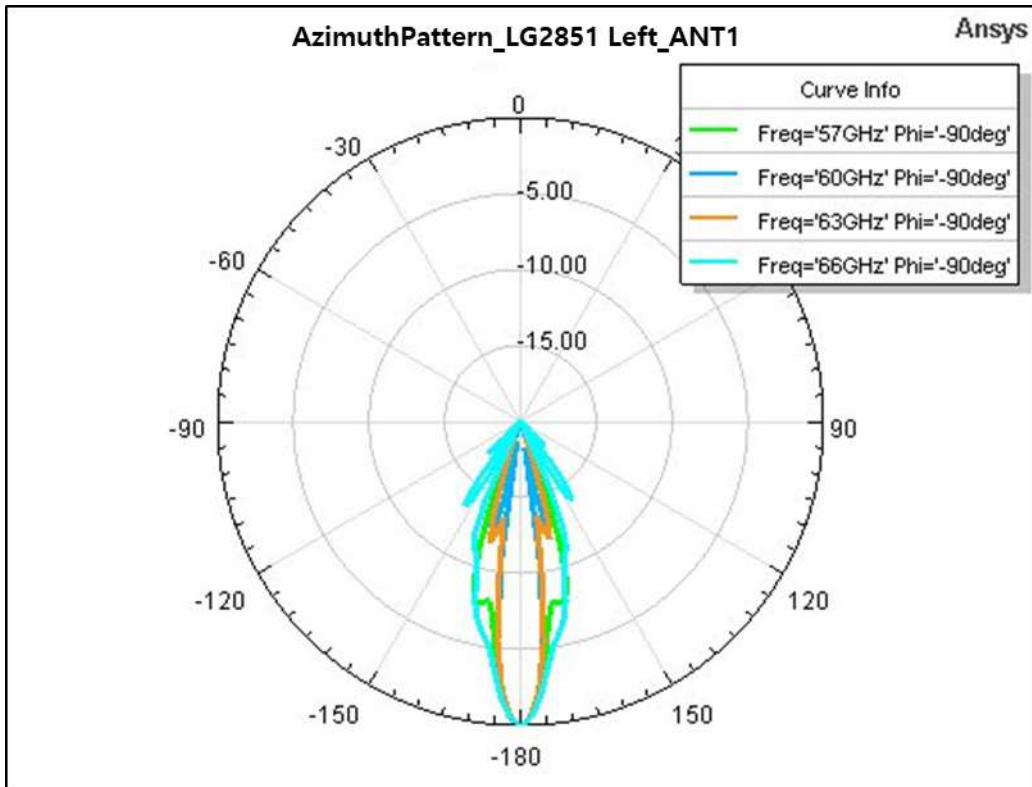
ANT 0 : Elevation (X-Z plane) beam pattern

ANT 1 : Azimuth (Y-Z plane) beam pattern
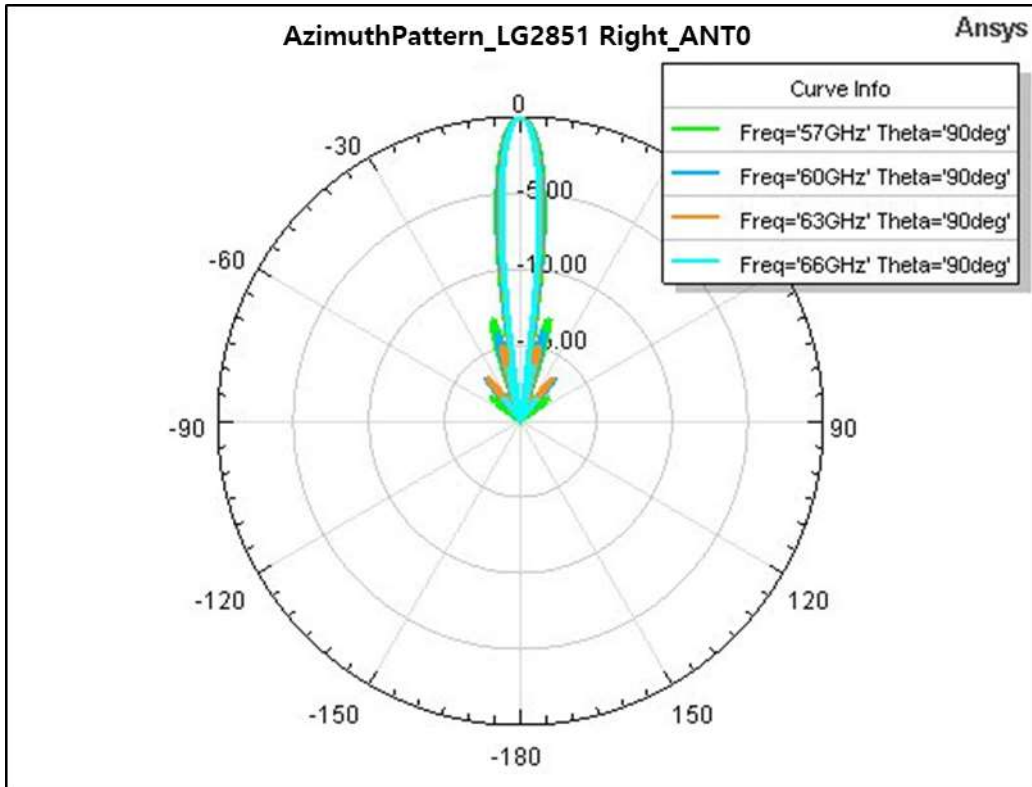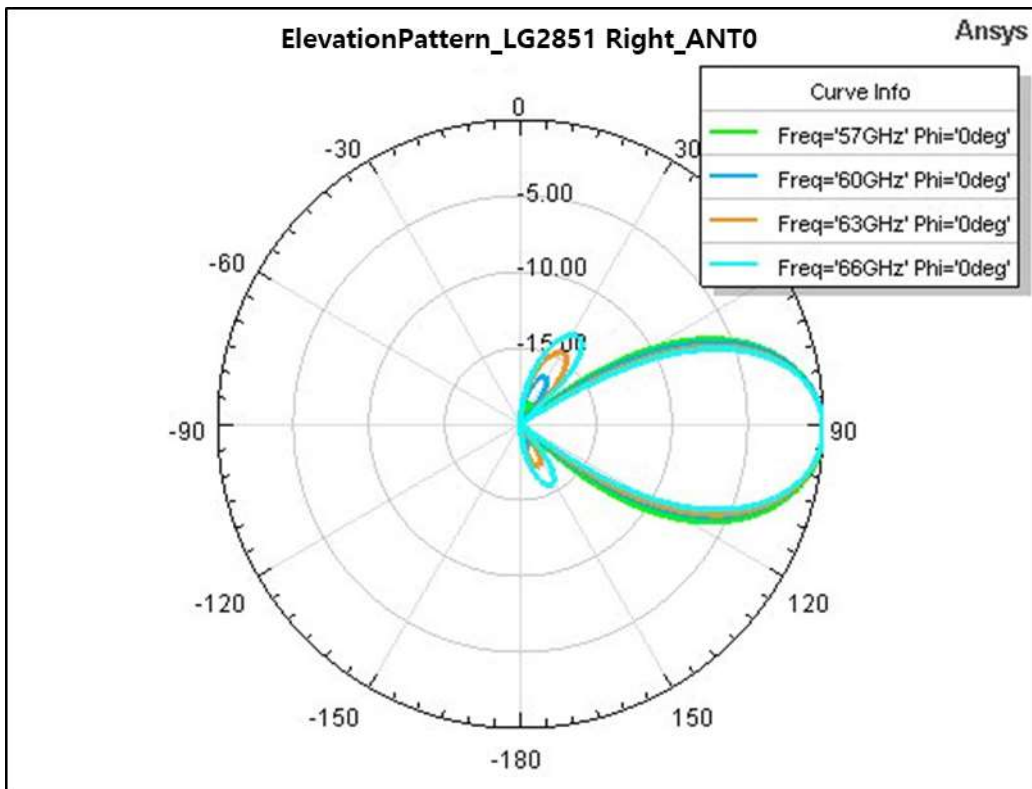

ANT 1 : Elevation (X-Z plane) beam pattern

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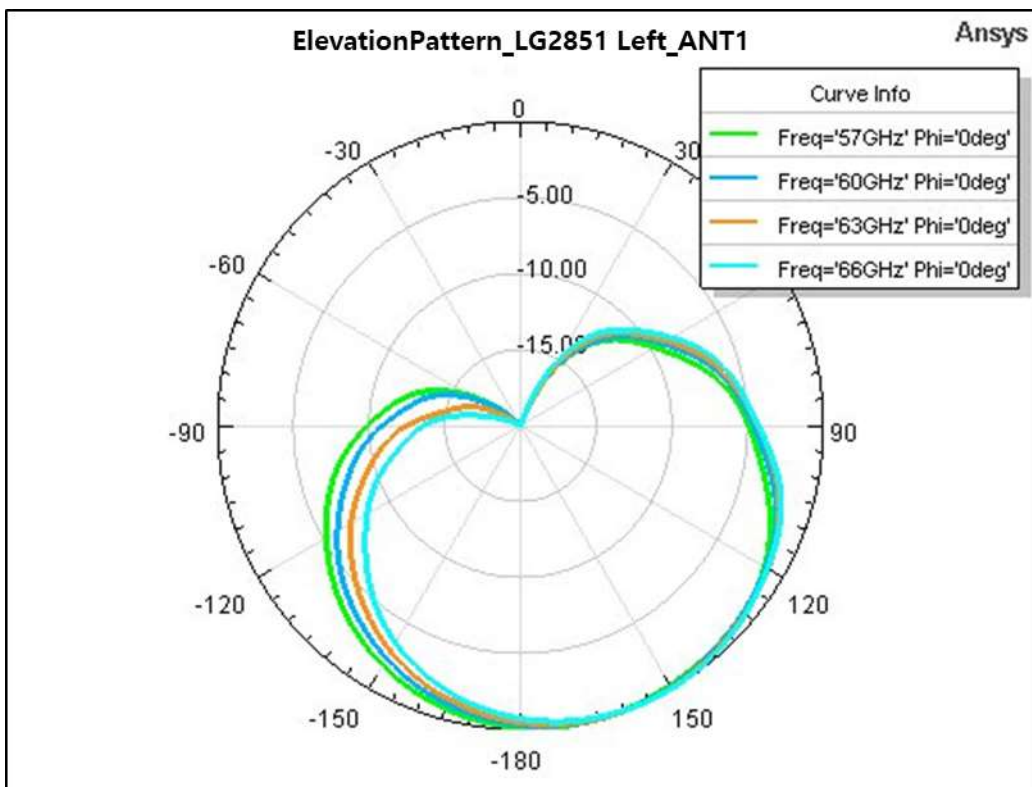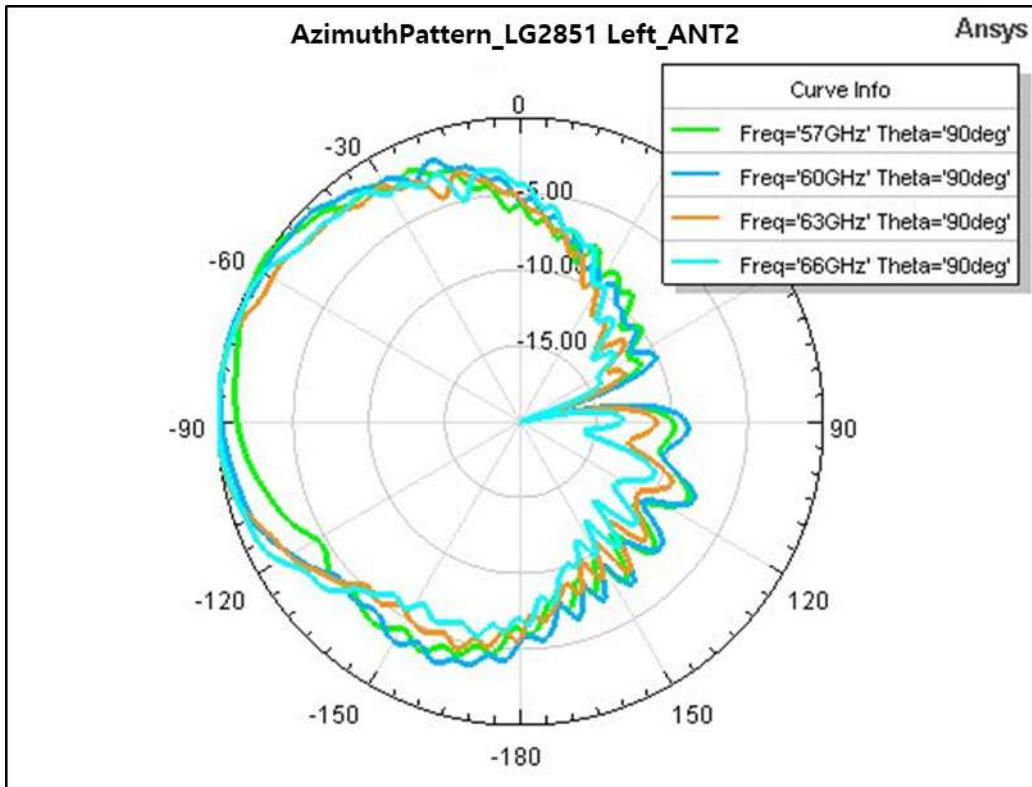
ANT 2 : Azimuth (X-Y plane) beam pattern
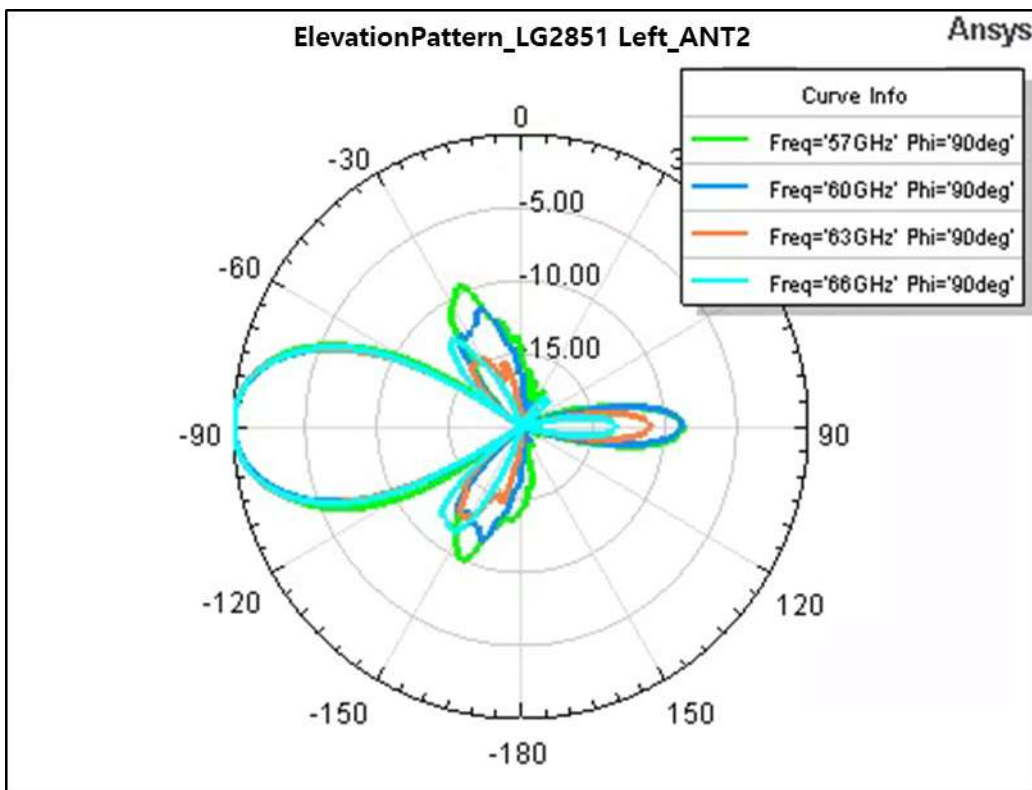
ANT 2 : Elevation (X-Z plane) beam pattern

3.3 LG2851 C0-Right (Transmit Mode)

ANT 0 : Azimuth (X-Y plane) beam pattern

ANT 0 : Elevation (X-Z plane) beam pattern

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ANT 1 : Azimuth (Y-Z plane) beam pattern

ANT 1 : Elevation (X-Z plane) beam pattern

ANT 2 : Azimuth (X-Y plane) beam pattern
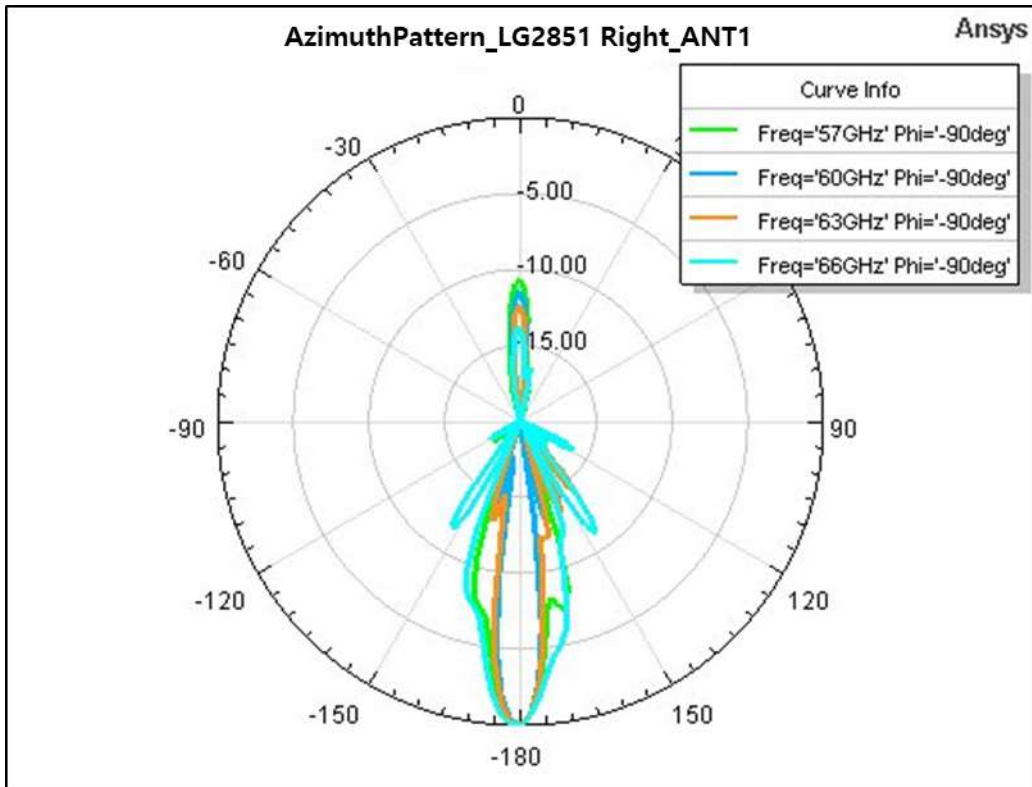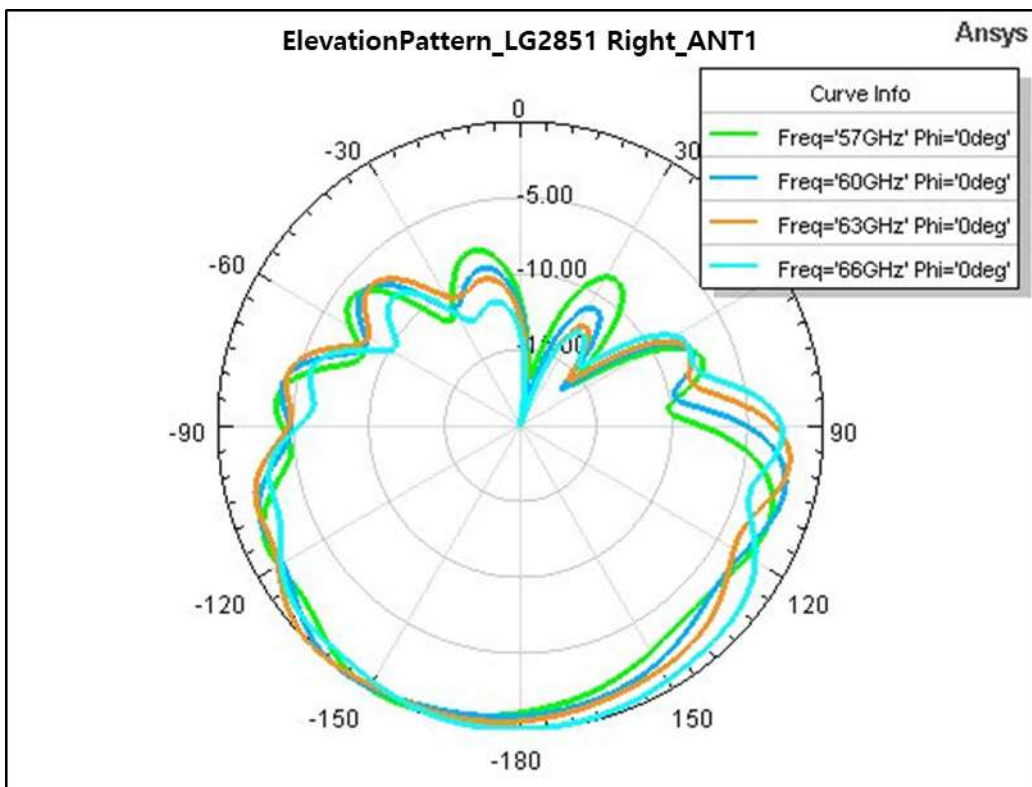

ANT 2 : Elevation (X-Z plane) beam pattern

3.4 LG2851 C0-Right (Receive Mode)

ANT 0 : Azimuth (X-Y plane) beam pattern

ANT 0 : Elevation (X-Z plane) beam pattern

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ANT 1 : Azimuth (Y-Z plane) beam pattern

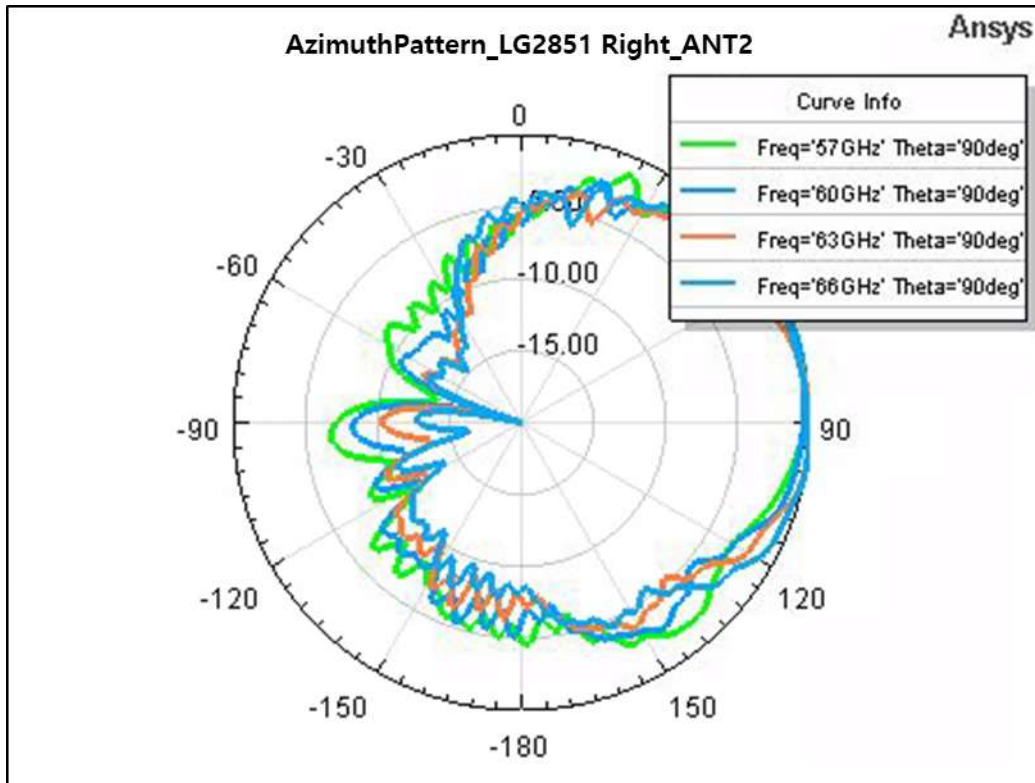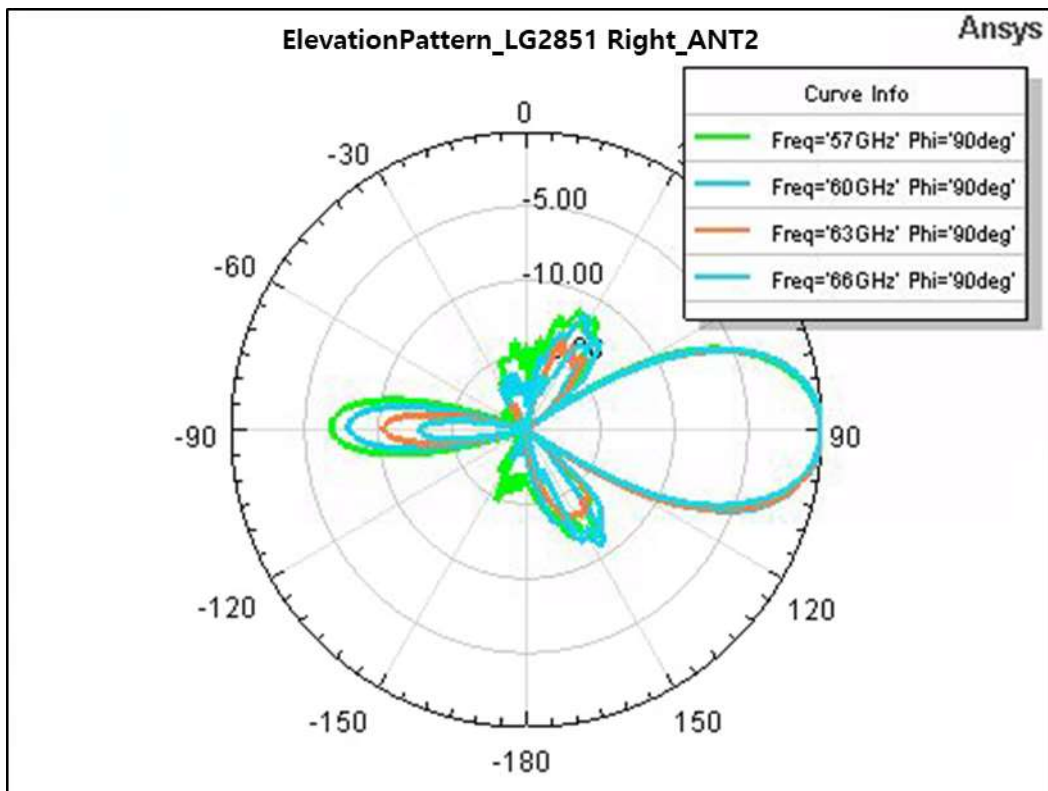**ANT 1 : Elevation (X-Z plane) beam pattern**

ANT 2 : Azimuth (X-Y plane) beam pattern

ANT 2 : Elevation (X-Z plane) beam pattern