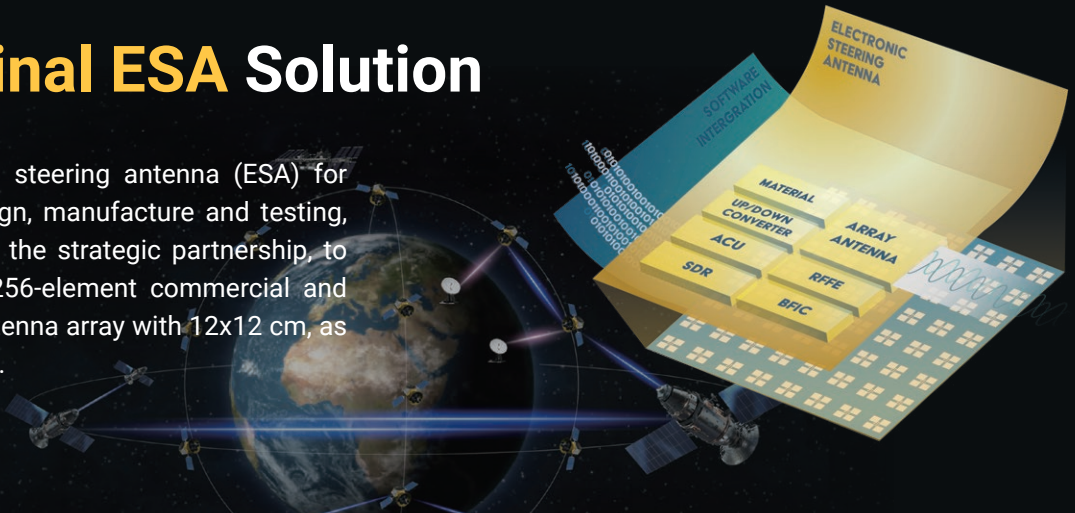


Ground Terminal ESA Solution

TMYTEK focuses on electronic steering antenna (ESA) for ground station, capable of design, manufacture and testing, and collaborates with DuPont™, the strategic partnership, to showcase the world's largest 256-element commercial and defense ready LTCC Ka-band antenna array with 12x12 cm, as well as Ku-band with 64-element.



Ku/Ka-band ESA/PAA

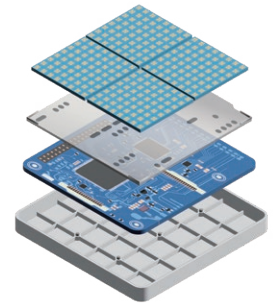
ESA technology promises the ramp-up of LEO/ multilayered ground terminals. TMYTEK has extensive experiences and resources in Ku/Ka-band ESA/PAA design, verification, and manufacturing.

Parameter	Receiver	Transmitter
Antenna Gain (array)	29 dBi	
Antenna Beamwidth	6° ± 1° @Boresight	
RF Frequency	10.7-12.75 GHz	13.75-14.5 GHz
IF Frequency	950 MHz	
Array Size	16x16	
G/T	at 0°	5 dB/K
	at 45°	2 dB/K
EIRP	at 0°	32 dBW ± 2 dB
	at 45°	29 dBW ± 2 dB
Patch Antenna Element	5 dBi	
Polarization	Dual-Pol. (Electronically Switchable)	
Beamsteering Range	V-cut	±60°
	H-cut	±60°
Coverage Range	Az.	360°
	El.	10°-90°
Beamsteering Step Size	2°	
Interface	Analog	SMA
	Ctrl	RS-232
Power Consum. (Antenna Only)	28V DC, 30W (Max)	28V DC, 60W (Max)
Size (Full assembly)	L23xW23xH5 cm³	L20xW20xH5 cm³
Weight	<7 KG	<7 KG
Operating Temperature	-40°- +85°C	

Table. Ku-band ESA specification

DuPont™ MCM LTCC material systems

DuPont™ GreenTape™ LTCC Material Systems for high frequency application are designed to deliver best reliability/performance vs. system level cost in multiple ways.



Ku-Band 16x16 LTCC Based Phased Array

High frequency

- Stable Dk/very low Df performance under different frequencies in mmWave up to 100GHz
- Flexible design and 5 to 80 typical layer count
- High integration (antenna, EBG, cavities, etc.)
- Full package in metallization, plating compatible

High reliability

- Stable Dk/Df under different temperature environment
- Outstanding heat dissipation performance
- Coefficient of thermal expansion (CTE) match to bare die
- Zero moisture absorption

Properties	951	9K7
Dk@28 GHz	7.6	7.2
Df@28 GHz	0.005	0.0009
CTE (ppm/K)	5.8	5.3
Thermal Conductivity (W/m·K)	3.3	4.9
Flexural Strength (MPa)	230	230

Table. List of DuPont's LTCC Properties

Learn More



Visit TMYTEK

