

## Ka-SSPA

- MELCO has started the development of Nano SSPA for Ka-band DRA Antenna System.
- Geometry of Nano SSPA, containing 2-channel amplifiers, is smaller than  $48\text{mm}^2$  and implementable in tiled-format according to antenna element pitch and layout.
- MELCO's in-house new GaN device to be mounted in 1W-class GaN MMIC, realizing higher PAE.
- Very low insertion loss feasible by virtue of direct connection to individual antenna element.
- Operable under high temperature of  $85^\circ\text{C}$  at the satellite chassis.
- Qualification of Nano SSPA to be completed and available in market by mid-2027.

### ■ Target Performance of Ka-SSPA

Parameters	Performance
Frequency	17.7-20.2GHz 20.2-21.2GHz
RF Output Power	1W nom. (at NPR=15dB)
PAE	26%
Gain	$\geq 40\text{dB}$
Acceptance Temperature	TBD $\sim +85^\circ\text{C}$
SSPA Size	$< 48 \times 48\text{ mm}$
DC/DC, Control Ckt	External to Ka-SSPA

