

Milimeter Waves Seeker Brochure

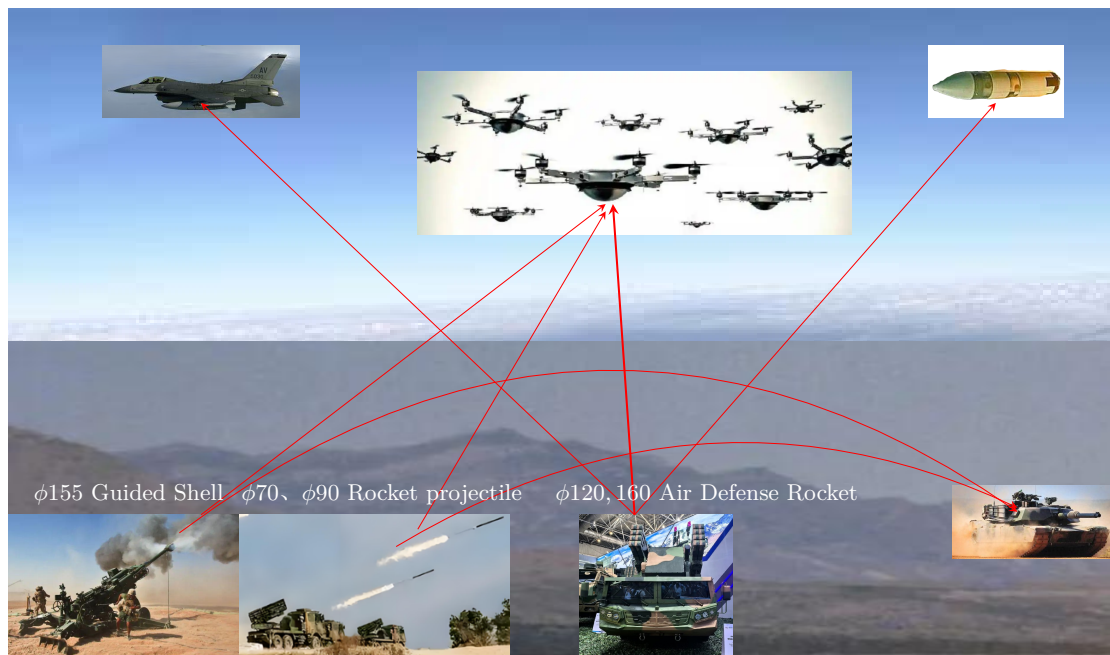
Scenario of Applications

Millimeter wave (mmWave) seekers are specialized radar-based guidance systems operating in the 30–300 GHz frequency range (wavelengths of 1–10 mm), leveraging short-wavelength electromagnetic waves for high-resolution target detection, tracking, and terminal guidance. Seeker emits mmWave signals; targets reflect these waves, captured by the receiver. The signal processor in seeker determine target distance, azimuth/elevation angles, and spatial coordinates via analyzing the received signal.

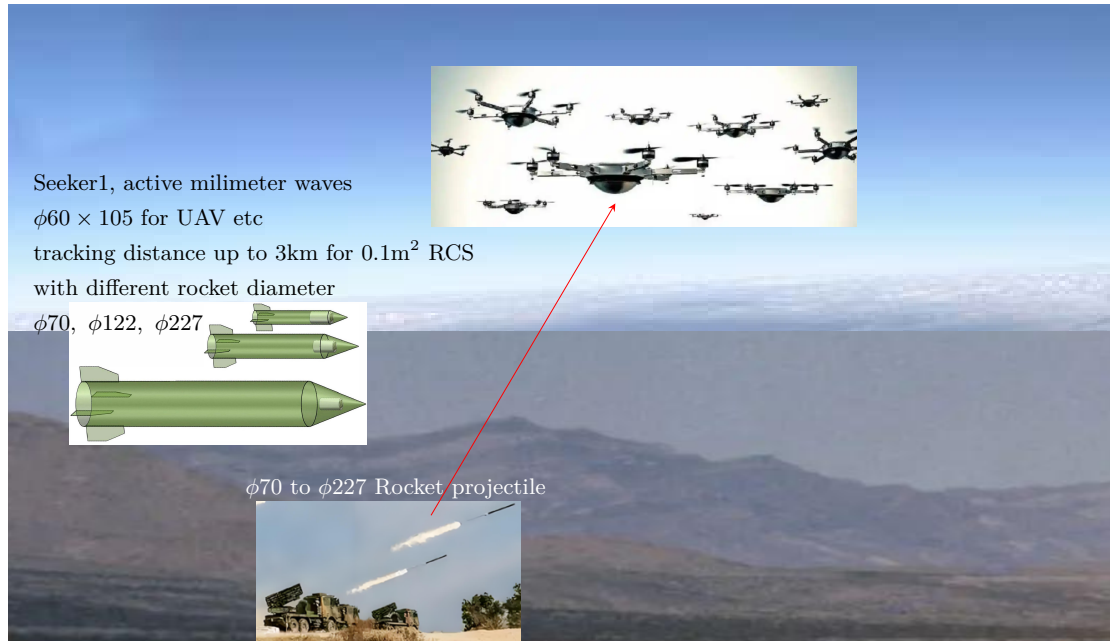
Based on the following key technologies:

- Rapid target acquisition: multi-channel phased arrays enable adaptive beam-forming and electronic scanning;
- Jamming resist: frequency agility and waveform diversity;
- Low power consumption: Solid-state transceivers for efficient signal generation and amplification;
- Compact design: Integrated design and advanced semiconductor manufacturing process.

our products are widely used in guided munitions.



Seeker1

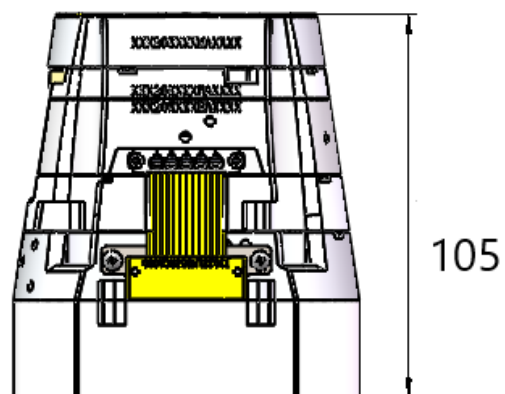
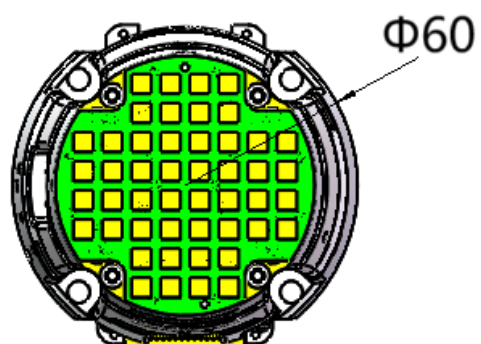


Feature

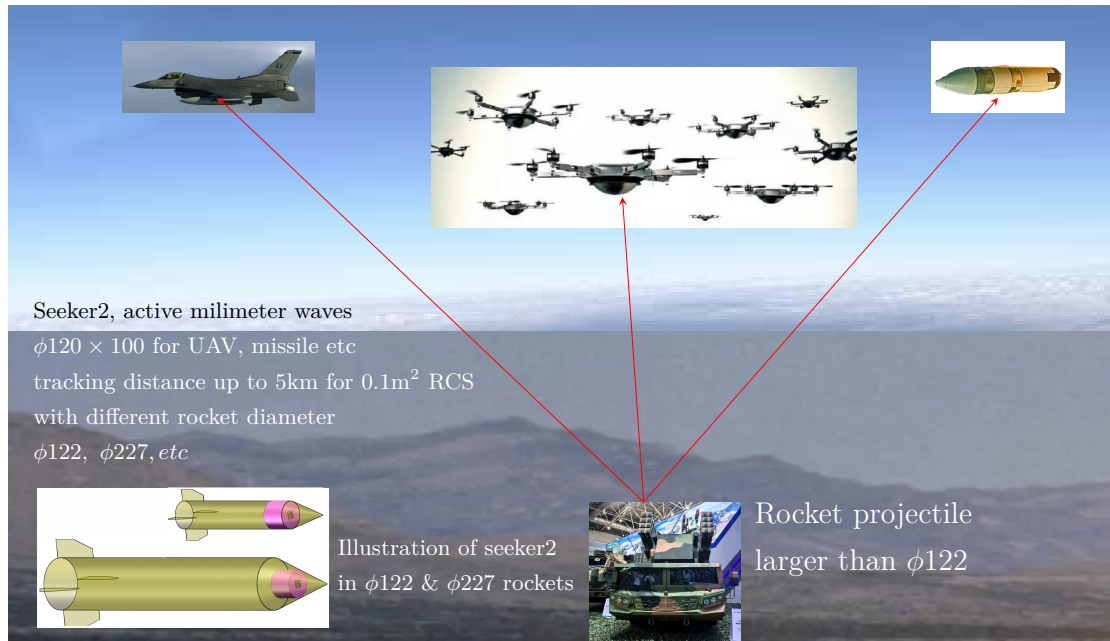
- active milimeter waves for UAV etc
- size: $\phi 60 \times 105$
- tracking distance up to 3km for 0.1m^2 RCS
- applicable to different rocket diameters $\phi 70, \phi 122, \phi 227$, etc

Spec.	Value
possible targets	UAV etc.
RCS	0.1 m^2
target velocity	$10\text{m/s} \sim 500\text{m/s}$
maximum distance	$\geq 3000\text{m}$
Elec. interface	J301-15ZKP29
size	$\phi 60\text{mm} \times 105\text{mm}$
weight	$\leq 600\text{g}$
applicable diameters	$\phi \geq 70\text{mm}$
max acceleration	10000g
working temp.	$-40^\circ\text{C} \sim +50^\circ\text{C}$
power consumption	60W
heat dissipation	conduction via missile body

Spec.	Value
operating mode	single pulse
tracking speed	$\geq 10^\circ/\text{s}$
measurement accuracy	$0.5^\circ (3\sigma)$
data rate	$\geq 50\text{Hz}$
band	Ka
signal bandwidth	$f_0 \pm 60\text{MHz}$
No. of channels	120
power per channel	0.5W
polarization	Vertical
EIRP	68 dBm
scan range	$\pm 25^\circ$
beam width	$\leq 12^\circ$



Seeker2

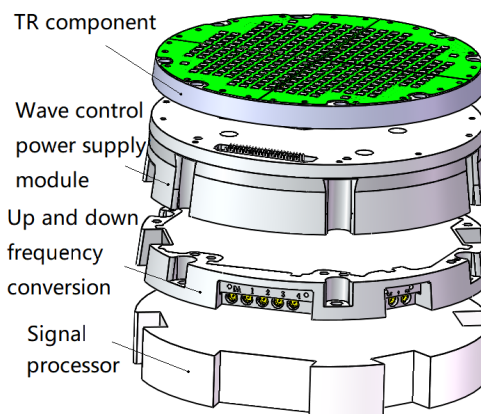
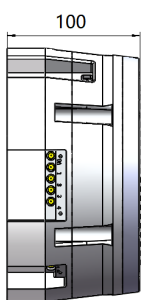
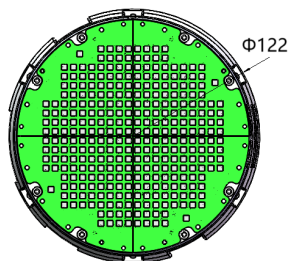


Feature

- active millimeter waves for UAV, missile etc
- compacted size: $\phi 120 \times 100$
- tracking distance up to 5km for 0.1m^2 RCS
- applicable to different rocket diameters $\phi 122$, $\phi 227$, etc

Spec.	Value
possible targets	UAV etc.
RCS	0.1 m^2
target velocity	$10\text{m/s} \sim 500\text{m/s}$
maximum distance	$\geq 5\text{km}$
Elec. interface	J301-15ZKP29
size	$\phi 122\text{mm} \times 100\text{mm}$
weight	$\leq 2.5\text{kg}$
applicable diameters	$\phi \geq 122\text{mm}$
max accelaration	100g
working temp.	$-40^\circ\text{C} \sim +50^\circ\text{C}$
power	450W
comsumption	

Spec.	Value
operating mode	single pulse
tracking speed	$\geq 10^\circ/\text{s}$
measurement accuracy	$0.3^\circ (3\sigma)$
data rate	$\geq 50\text{Hz}$
band	Ka
signal bandwidth	$f_0 \pm 50\text{MHz}$
No. of channels	320
power per channel	0.5W
polarization	Vertical
EIRP	80 dBm
scan range	$\pm 40^\circ$
beam width	$\leq 5.5^\circ$



Seeker3

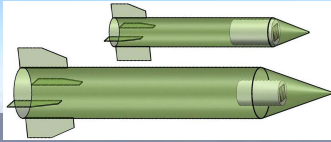
Seeker3: milimeter waves

$\phi 60 \times 60$ for tank, armed vehicle, etc

tracking distance up to 3km for 1m^2 RCS

with different rocket diameter

$\phi 70$, $\phi 122$, etc



$\phi 155$ Guided Shell

$\phi 70$ to $\phi 227$ Rocket projectile

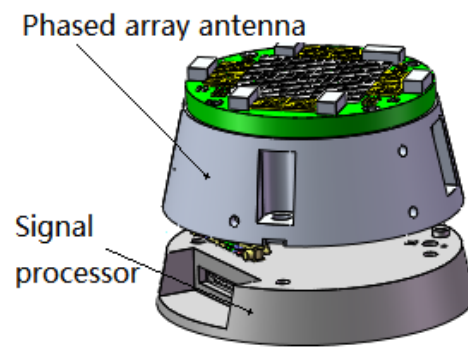
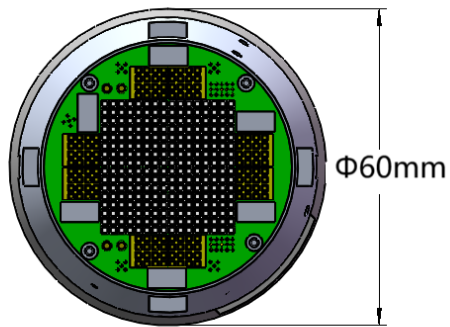
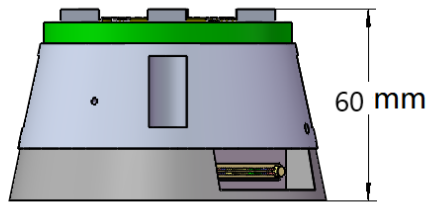


Feature

- milimeter waves $\phi 60 \times 60$ for tank, armed vehicle, etc
- tracking distance up to 3km for 1m^2 RCS
- applicable to different rocket diameter $\phi 70$, $\phi 122$, etc

Spec.	Value
possible targets	tank etc.
RCS	1m^2
target velocity	$\leq 30\text{m/s}$
maximum distance	$\geq 3000\text{m}$
Elec. interface	J301-15ZKP29
size	$\phi 60\text{mm} \times 60\text{mm}$
weight	$\leq 2\text{kg}$
applicable diameters	$\phi \geq 70\text{mm}$
max accelaration	10000g
working temp.	$-40 \sim +50$
power	150W
comsumption	

Spec.	Value
operating mode	single pulse
tracking speed	$\geq 10^\circ/\text{s}$
measurement accuracy	$0.5^\circ(3\sigma)$
data rate	$\geq 50\text{Hz}$
band	W
signal bandwidth	$f_0 \pm 50\text{MHz}$
No. of channels	384
power per channel	10mW
polarization	Vertical
EIRP	63 dBm
scan range	$\pm 20^\circ$
beam width	$\leq 10^\circ$



Seeker4



Feature

- passive infrared seeker $\phi 127 \times 210$ for tank, armed vehicle, etc
- tracking distance up to 2.5km
- lock before launch

Spec.	Value
possible targets	tank etc.
target velocity	$\leq 30\text{m/s}$
maximum distance	$\geq 2500\text{m}$
Elec. interface	J301-15ZKP29
size	$\phi 127\text{mm} \times 210\text{mm}$
weight	$\leq 2.5\text{kg}$
applicable diameters	$\phi \geq 127\text{mm}$
max acceleration	100g
working temp.	$-40 \sim 50$
power consumption	50W

Spec.	Value
operating mode	passive infrared
tracking speed	$\geq 15^\circ/\text{s}$
measurement accuracy	$0.05^\circ(3\sigma)$
data rate	$\geq 50\text{Hz}$
band	$8 \sim 12\mu\text{m}$ 384×288
NETD	90 mk
FOV	5°
scan range	$\pm 20^\circ$

