Compact Antenna Test Range

CAPABILITY SHEET · THE QUIET ZONE IS THE PRODUCT. · A REFLECTOR WITH A TREATED RIM, A FEED, A ROOM

THE ONE IDEA

PRINCIPLE	The quiet zone is the product.
WHY IT MATTERS	A reflector turns the spherical wave of a small feed into a plane wave, but the wave is plane only over a limited region; the surface, the rim, the feed and the room decide how large and how clean that region is.

THE RANGE

REFLECTOR AND RIM	A precision reflector on a stiff backing frame with adjusters, ending in serrations or a rolled edge, so that the diffraction from the rim is taken down.
FEED	A feed on its own positioner, set at the focus and tilted to light the reflector gently, so that the wave leaving the reflector is plane and the rim is lit lightly.
ROOM AND POSITIONER	A shielded chamber lined with absorber, heavier where the wave would reflect toward the zone, and an antenna positioner whose axes meet at the centre of the zone.
ZONE SCANNER	A probe on a scanner moves through the zone, recording amplitude and phase, so that the quality of the zone is read from the record and not guessed.

THE METHOD

ORDER	Duty, reflector and rim, feed, room and positioner, zone scan, build and prove. The zone scan and the alignment are the two that a quick job skips.
LIMITS	Bands, sizes, distances and allowances come from the customer's antennas, and are not printed here.

CONFIGURATIONS

SINGLE	A single-reflector range: an offset reflector with a treated rim, a feed at its focus, a shielded chamber and an antenna positioner at the zone.
DUAL	A dual-reflector range: a second surface shapes the field, which can give a purer zone in a shorter room.
SCANNER	A zone scanner with re-qualification: a probe scanner and the software to map the zone of a range that already stands, and again on a schedule.

SCOPE

SCOPE BOUNDARY	It is the compact antenna test range: not a spherical antenna test facility, not the antenna positioners line and not an EMI/EMC laboratory.
STATUS	Neometrix engineers compact antenna test ranges to order, and no delivered compact antenna test range is claimed.

DEFENCE PROGRAMMES DESK

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