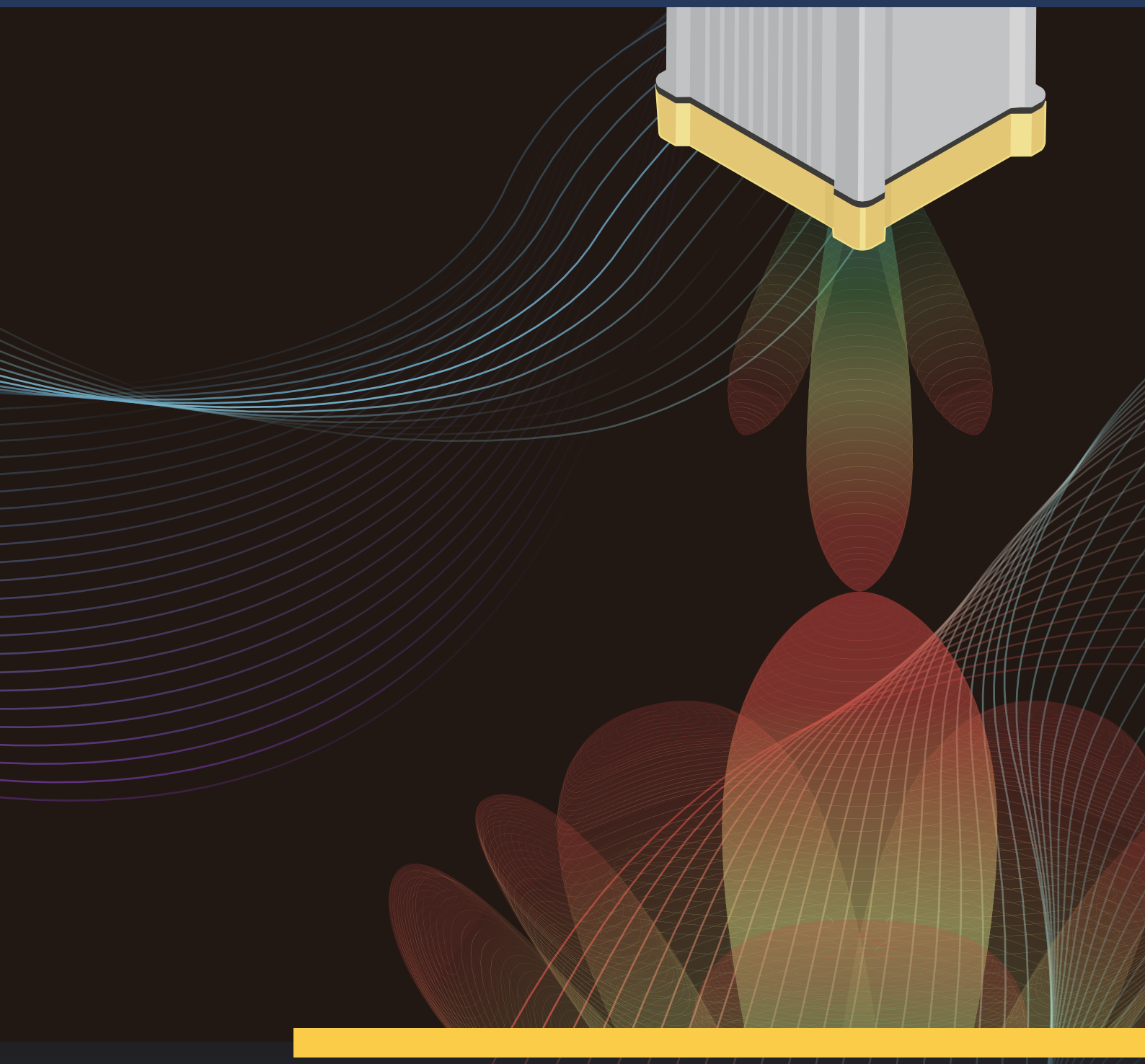
TMYTEK



XBeam

5G NR mmWave OTA Solution

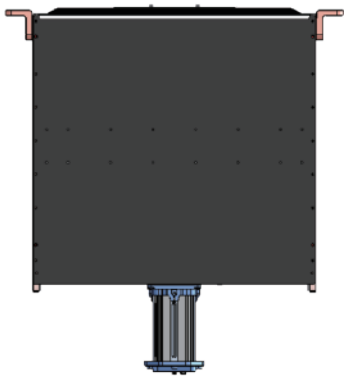
www.tmytek.com

XBeam

XBeam Introduction

XBeam is an Over-The-Air (OTA) testing solution without mechanical positioners. Pure electronic beam-to-beam measurement is 20 times faster than any traditional method. Unique features are realized by the Hardware Engine and the Software Package:

- **OTACali™** calibrates phased array efficiently over the air
- **mmWatson™** measures and identifies broken DUTs
- **BeamPicasso™** measures beams in different beam angles with an electronic approach



XBeam Hardware Engine

XBeam Software Package

Why XBeam?

- Automation Ready
  The small footprint design makes XBeam easy to integrate with automation test equipment, like a handler.
- Fast Testing Speed
  Instead of using mechanical positioners, XBeam is implemented with a cutting-edge OTA technology and is 20 times faster than any traditional methods.
- Cost-Effective
  Fast testing speed lowers the unit cost of testing. The manufacturers can further save the cost of instrumentation by upgrading Sub-6GHz wireless testers or analyzers with our wideband 5G UD Box (Up/Down Converter).

XBeam Hardware Engine

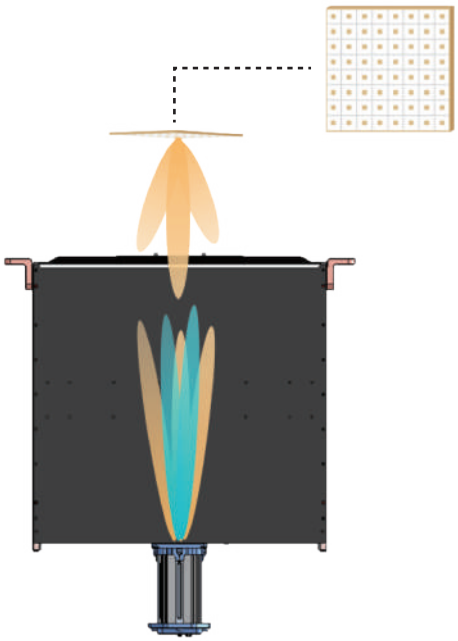
A small footprint shielding box contains TMYTEK patented technology BeamPicasso™, enables the measurement of DUT beams from different angles without stepping motors. The pure electronic operation makes XBeam extremely fast and reliable.
TMYTEK 5G BBox is the core of XBeam's mmWave probe. Along with our ultra-wideband up/down converter (UD Box) makes reuse of Sub 6 GHz analyzers possible to save the cost of instrumentations.

Hardware architecture

- Small footprint shielding box
- TMYTEK BBox as the mmWave beam source
- TMYTEK patented beam-to-beam measurement technology
- Automated testing integration kits

Features

- Production line optimized
- Automated test facilities integration ready
- No mechanical positioner inside
- Pure EM wave solution

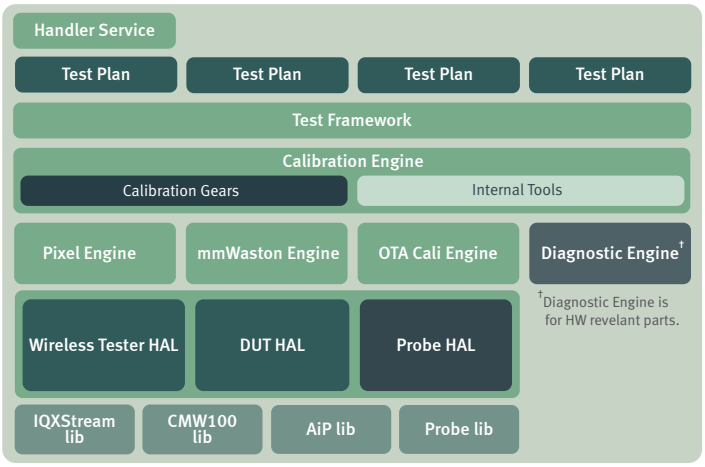


XBeam Software Package: BeamDer™

To control mmWave beams and to capture measurement data out of the instruments, XBeam Software Package abstracts the functions into different HALs (Hardware Abstraction Layer) so that XBeam is universal to various analyzers and accessible to automated testing.

Software architecture

- Test Framework processes test plan scripts
- Three engines are the core of XBeam features: OTACali™, mmWatson™, BeamPicasso™
- Wireless Tester HAL provides the flexibility of connecting XBeam with different models of testers. More wireless testers can be supported
- DUT HAL creates the software interface for phased array/AiP control
- Automated testing integration kits



BeamDer™ Architecture

Radio Communication Analyzer

XBeam supports most of the Sub 6 GHz and mmWave instruments. For more information, please contact sales@tmytek.com.

System Features

Highlights

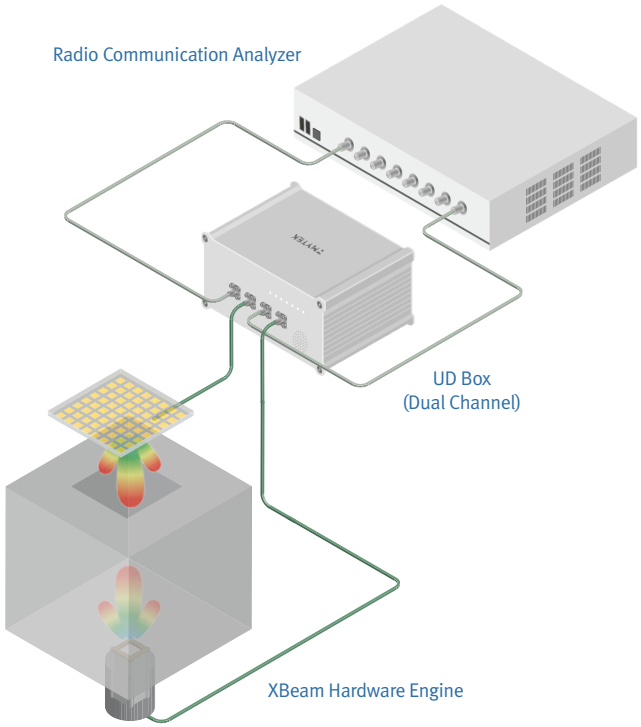
- Save costs: Test with sub-6 GHz instruments by integrating with TMYTEK UD Box (up/down converter)
- Supports a wide range of analyzers: Meet different testing purposes
- 2-D beam steering: Measures X & Y plane data
- Wide beam angle: 120-degrees coverage*1

Measurements

- 1x4 to 8x8 AiP characterization
- XBeam measures mmWave AiP RF parameters, including power, EIRP, NF, beam steering angles, beamwidth, EVM and more*2

*1 *The angles supported by XBeam is +/- 60 degrees in both X and Y direction. The boundary (› 50 degrees) performance may degrade.*

*2 *The test items depend on the model of the tester or analyzer used in the system.*



XBeam System Diagram

mmWave AiP Testing: Efficiency Matters

OTA is the only way to test the mmWave AiP modules. Traditional CATR is excellent for R&D purposes but is inadequate in production line testing: slow positioners and bulky chamber make the automation difficult. TMYTEK creates XBeam to improve mmWave module testing efficiency and to meet your production goals at a reasonable cost.

- Measure important parameters
- High UPH (Unit-Per-Hour) can be expected by integrating XBeam with an automated testing handler
- The unit testing cost can be lowered per increment of quantities

XBeam

5G NR mmWave OTA Solution

XBeam is an Over-The-Air (OTA) testing solution without mechanical positioners.
XBeam with pure electronic beam-to-beam measurement is 20 times faster than any traditional method.
OTA is the only way to test the mmWave AiP modules. However, traditional CATR with slow positioners and bulky chamber is inadequate in production line testing. TMYTEK creates XBeam to improve mmWave module testing efficiency and to meet your production goals at a reasonable cost.

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