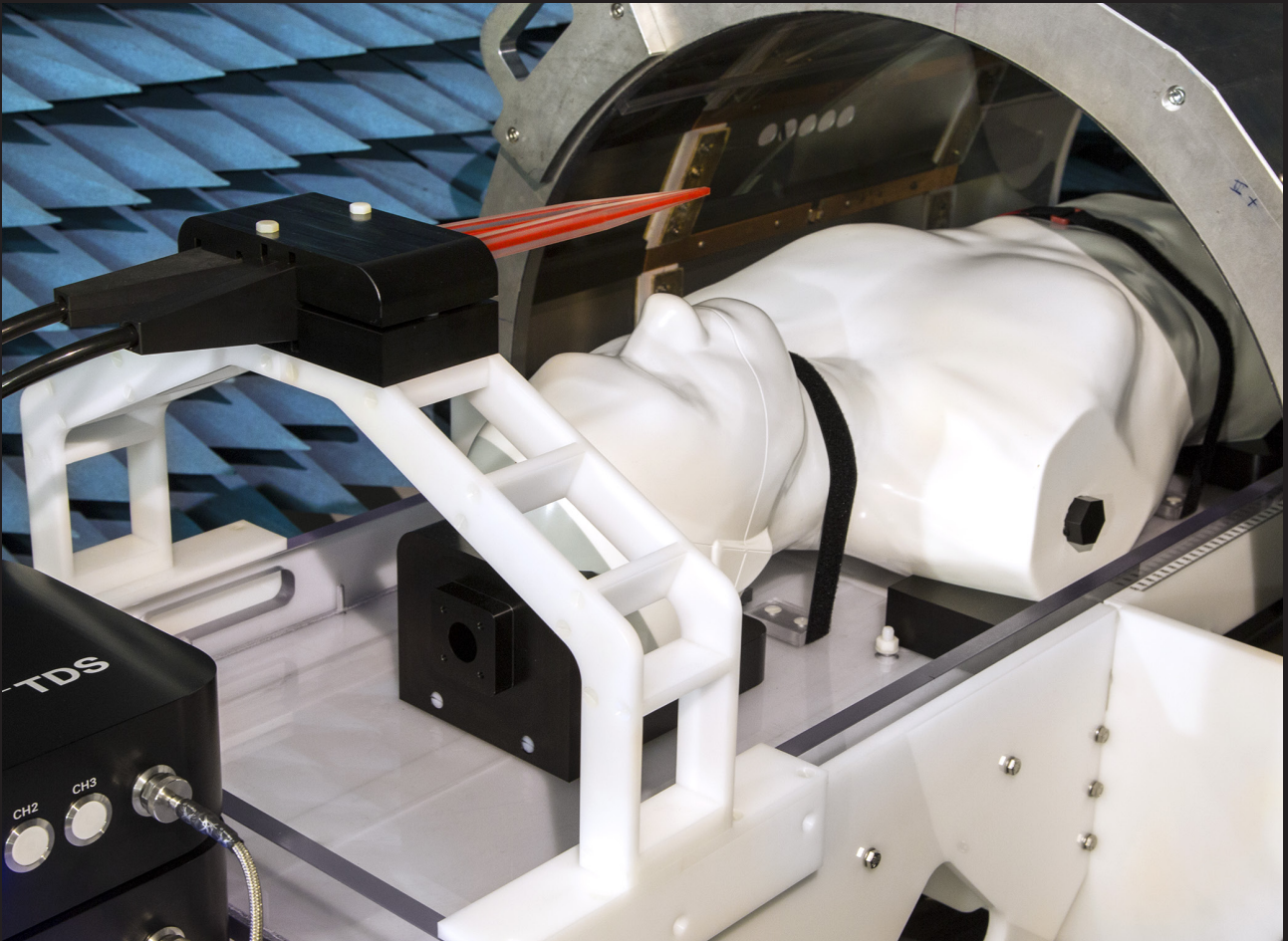


Experimental Human Phantoms

EM-Phantoms

Precision Phantoms for OTA, SAR, MRI Evaluations
and RF Transceiver Optimization



What are EM-Phantoms?

SPEAG's EM phantoms are high-quality anthropomorphically shaped phantoms designed for evaluation of OTA, SAR, and MRI performance and on-body and implant transceiver optimization. The flexible whole-body phantom POPEYE with its posable arms, legs, hands and feet enables testing of handheld and

body-body transmitters in any plausible usage situation. Head and hand phantoms compatible with current standard specifications provide accurate and reproducible OTA testing of wireless devices. Customized phantoms are also available on request, e.g., ears, hands with custom grips, etc.

EM-Phantoms Optimized for OTA, SAR, MRI Evaluations

Posable Whole-Body Phantom POPEYE V5.x

- Simulates realistic human postures for OTA, SAR, and MRI evaluations
- Dimensions meet requirements for conservative testing
- Stand for support and transportation available
- Consists of torso with head, left/right arms with hands and left/right legs with feet

Torso Phantom

- Shape: Anthropomorphic (glass-fiber-reinforced epoxy)
- Shell thickness: 2 ± 0.2 mm in the ear-mouth region & 3 ± 1 mm in other regions
- Head: SAM according to the IEEE SCC34, 3 GPP, and CTIA standards
- Filling volume: 28 liters
- TORSO OTA V5.1: filled with gel material (CTIA compliant)
- TORSO SAR V5.1: empty torso for SAR measurements; custom-defined cuts available on request
- TORSO MRI V5.1: filled with MRI Body Media to simulate the RF load of humans and TS1/TS2 > 150 ms
- TORSO OTA V5.1E (w/ EARS): same as TORSO OTA 5.1 but includes silicone-carbon ear (with ear canal)

Arm, Leg, Foot Phantoms

- Posable generic left & right phantoms with joints
- Loaded silicone-carbon based material (compatible with hand material of CTIA)
- Inner bone structure (low-loss, low permittivity)
- High 5.1 (> 500 MHz) and low 5.5 (< 500 MHz) frequency versions available; the low frequency version has conductive connections between the joints
- Easily attachable to the POPEYE Phantom
- ARM/LEG V5.x: compatible with SPEAG's torso/hand phantoms
- LEGR/LEGL V5.x: compatible with SPEAG's torso/foot phantoms
- JIAOR/JIAOL V5.x: compatible with SPEAG's leg phantoms

SAM V4.5BS Head Phantom

- Light and robust solid head with integrated positioning lines
- Manufactured of high-precision injection-molded polypropylene
- Shell thickness 2 ± 0.2 mm (6 mm at ear attachment point)
- Filling gel material from 300 MHz–6 GHz according to the IEEE/IEC, 3 GPP, and CTIA standards
- Integrated lightweight high-precision hand phantom fixture
- Available with anatomically correct lossy ears with ear canals

SHO Hand Phantoms

- Anthropomorphically shaped right and left hand phantoms
- Silicone-carbon based material compliant with CTIA
- CTIA Hands for brick, clam, and PDA type phones in talk and data mode
- Tablet hands, wide-PDA hands, and Laptop hands with most commonly used handgrips
- Low-loss and RF-transparent spacers
- Customized hands available on request



MRI-safety evaluation suite: Torso phantom and EASY4MRI



SHO hand phantoms with CTIA-compliant handgrips



POsable Phantom for Electromagnetic sYstems Evaluations (POPEYE V5.x)

For further information and technical specifications, visit www.speag.com

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