NEW
<10 MHz to >100 GHz

SWISS MADE

EM Phantoms

What are EM Phantoms?

SPEAG's growing family of electro-magnetic (EM) phantoms are high-quality anthropomorphically shaped phantoms designed for over-the-air (OTA), SAR, and MRI performance evaluations as well as body-mounted and implant transceiver optimization. The fully posable whole-body phantom POPEYE10 enables testing of handheld and body-body transmitters in any plausible usage scenario. Head, hand, and forearm phantoms compatible with current standard specifications provide accurate and reproducible OTA testing of wireless devices. Customized homogeneous or non-homogeneous phantoms, phantoms (e.g., ears, hands with cusom grips, torsos with lungs, lossy blocks) are available upon request."

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EM Phantoms Optimized for OTA, Evaluations

Posable Whole-Body Phantom POPEYE10

- POsable Phantom for Electromagnetic sYstems Evaluations V10
- Consists of torso (head, chest, abdomen shown in figure) with poseable arms, legs, hands and feet
- For OTA and radiofrequency (RF)-link characterization of on-body and in-body wireless transmitters including wearables, hand-held, ear, and eye-worn devices
- Manufactured from a silicone-carbon based material with realistic losses for body-mounted devices
- Dimensions meet requirements for conservative testing
- Representative anatomy with details for testing all smart devices, including hearing aids, smart glasses, and contact lenses
- Simulates any realistic human posture and entire range of device usage
- Includes flat sections for device positioning at key locations such as shirt pockets, trousers pockets, and arm bands
- Stable positioning and easy transport with a dedicated low-loss stand

POPEYE10 upper body including HEAD, CHEST, and ABDOMEN phantoms with anatomical EYEs and EARs

Phantoms for 5G OTA Applications

- SHO3TO110 hand phantoms and POPEYE3TO110-V10 whole body phantom
- For optimization and testing of any 5G hand-held or body-worn transmitter
- Frequency range between 3 to >100 GHz
- Developed in light of a detailed study of human skin properties
- Unique coating simulates the average matching effects of the stratum corneum skin layer

Customized Phantoms for Medical Applications

- Complex and simple anatomical phantoms specific to on-body or in-body medical applications
- Layered multi-tissue phantoms for RF-link characterization of implant devices
- Tissue-matching body-worn phantoms for clinical tests of implant devices
- Device-conformal solid phantoms for production testing of implant devices
- Anatomical whole or partial body phantoms for MRI applications

POPEYE10 head phantom in a head-set testing setup

SAM V4.5BS Head Phantom

- Light and robust CTIA compliant solid head
- 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, 3GPP, and CTIA standards
- Lightweight high-precision fixture for head and hand testing

SHO and SHO3TO110 Hand and Forearm Phantoms

- Anthropomorphically shaped right and left hand and generic forearm phantoms
- Silicone-carbon based material compliant with CTIA in the frequency range between 300 MHz – 3 GHz or 3 – 6 GHz
- CTIA Hands for brick, clam, PDA, and ultra-wide type phones in talk and data mode
- CTIA generic forearm phantom for testing of wrist-worn devices
- Tablet hands, Gaming hands (two-hand grip) and Laptop hands with most commonly used handgrips
- Chinese two-hand grip hands
- Low-loss and RF-transparent spacers for precise positioning
- Customized hands available upon request

SHO3TO110 hand phantoms with CTIA-compliant handgrips for 5G OTA applications

For further information and technical specifications, visit **www.speag.swiss**

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