

# CERTIFICATE OF CALIBRATION

ISSUED BY UL INTERNATIONAL (UK) LTD

DATE OF ISSUE: 06/May/2022      CERTIFICATE NUMBER : 12345678JD01A



UL INTERNATIONAL (UK) LTD  
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Page 1 of 10

APPROVED SIGNATORY

A handwritten signature in black ink, appearing to read 'Harmohan Sahota'.

.....  
Harmohan Sahota

## Customer :

UL VS Inc  
47173 Benicia Street  
Fremont, CA 94538, USA

## Equipment Details:

Description:	Dipole Validation Kit	Date of Receipt:	25/April/2022
Manufacturer:	Speag		
Type/Model Number:	D3700V2		
Serial Number:	1039		
Calibration Date:	06/May/2022		
Calibrated By:	Masood Khan Laboratory Test Engineer		

Signature:

A handwritten signature in black ink, appearing to read 'Masood Khan'.

.....  
All Calibration have been conducted in the closed laboratory facility: Lab Temperature (22±3) °C and humidity < 70%

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Use of the UKAS mark demonstrates that compliance with the requirements of BS/EN/ISO/IEC 17025:2017 has been independently assessed. The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.  
The results relate only to the item calibrated.

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UKAS Accredited Calibration Laboratory No. 5772

CERTIFICATE  
NUMBER :  
12345678JD01A

Page 3 of 6

### SAR System Specification

Robot System Positioner:	Stäubli Unimation Corp. Robot Model: TX60L
Robot Serial Number:	F17/5ENYG1/A/01
DASY Version:	cDASY6.14.0.959
Phantom:	Flat section of SAM Twin Phantom
Distance Dipole Centre:	10 mm (with spacer)
Frequency:	3700 MHz

### Dielectric Property Measurements – Head Simulating Liquid (HSL)

Simulant Liquid	Frequency (MHz)	Room Temp		Liquid Temp		Parameters	Target Value	Measured Value	Uncertainty (%)
		Start	End	Start	End				
Head	3700	18.5 °C	18.30 °C	18.8 °C	18.2 °C	$\epsilon_r$	37.7	39.0	± 5%
						$\sigma$	3.12	3.05	± 5%

### SAR Results – Head Simulating Liquid (HSL)

Simulant Liquid	SAR Measured	250 mW input Power	Normalised to 1.00 W	Uncertainty (%)
Head	SAR averaged over 1g	17.400 W/Kg	69.271 W/Kg	+20.70 / -20.50
	SAR averaged over 10g	6.450 W/Kg	25.678 W/Kg	+20.62 / -20.45

### Antenna Parameters – Head Simulating Liquid (HSL)

Simulant Liquid	Parameter	Measured Level	Uncertainty
Head	Impedance	52.3 + 3.15j $\Omega$	± 10.83 %
	Return Loss	28.39	± 1.37 dB

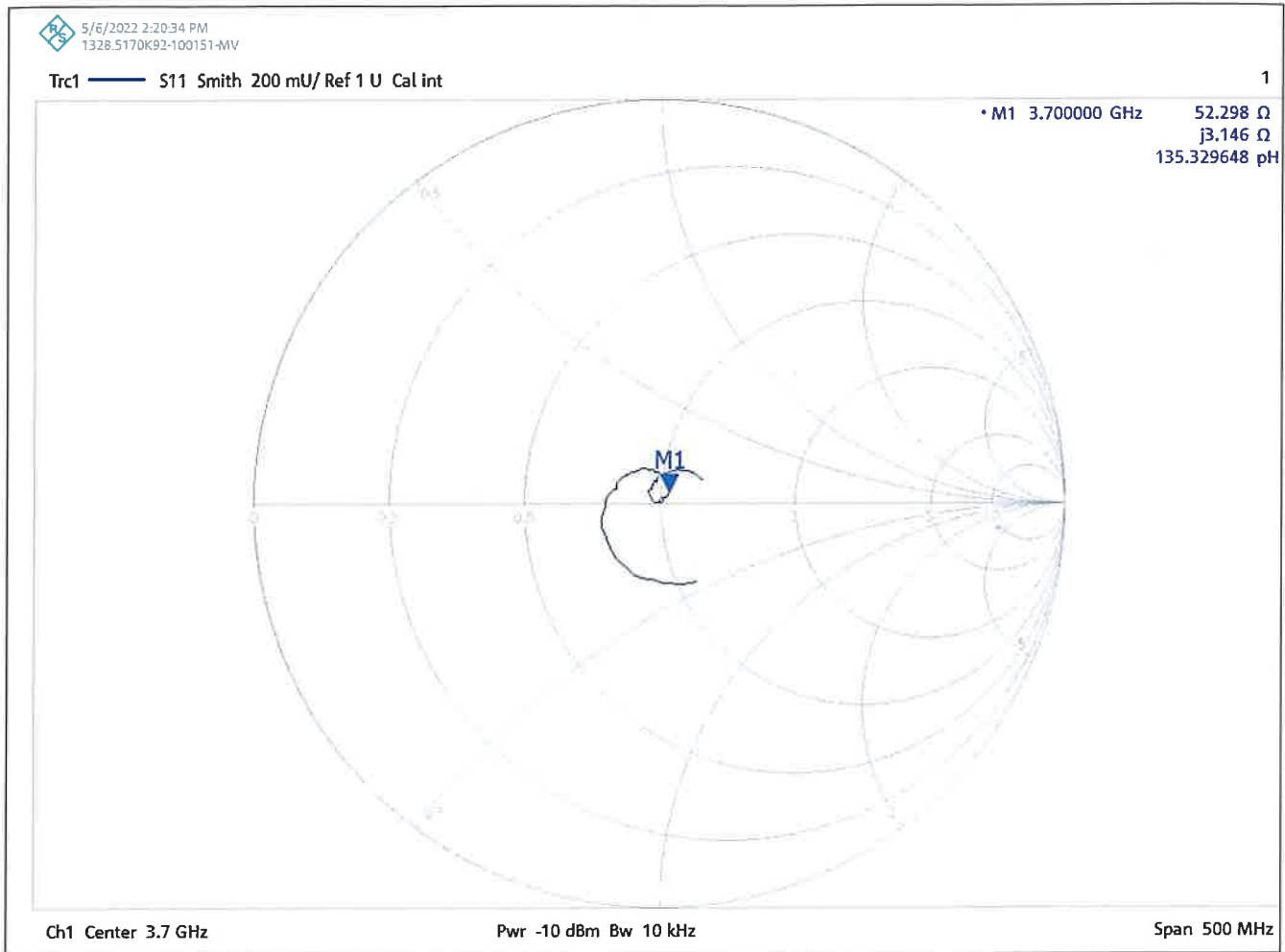
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NUMBER :  
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Page 5 of 6


## Impedance Measurement Plot for Head Stimulating Liquid (HSL)



**Calibration Certificate Label:**

 <p><b>UKAS</b> CALIBRATION 5772</p>	<p><b>UL INTERNATIONAL (UK) LTD</b> <b>Tel: +44 (0) 1256312000</b></p> <p>Certificate Number: 12345678JD01A</p> <p>Instrument ID:</p> <p>Calibration Date: 06/May/2022</p> <p>Calibration Due Date:</p>
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