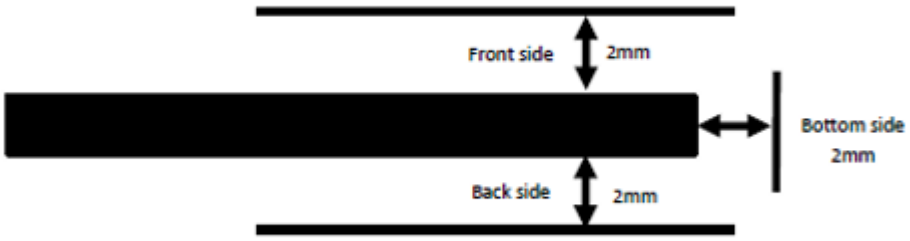
ANNEX I Sensor Triggering Data Summary

SAR sensor

Frequency	Conducted power reduced
LTE Band 7	1dBm

	Trigger distance
Front	2mm
Back	2mm
Bottom	2mm



According to the above description, this device was tested by the manufacturer to determine the SAR sensor triggering distances for the rear and bottom edge of the device. The measured power state within ±5mm of the triggering points (or until touching the phantom) is included for rear and each applicable edge.

To ensure all production units are compliant it is necessary to test SAR at a distance 1mm less than the smallest distance from the device and SAR phantom with the device at maximum output power without power reduction.

We tested the power and got the different proximity sensor triggering distances for front, rear and bottom edge. But the manufacturer has declared 2mm is the most conservative triggering distance for main antenna. So base on the most conservative triggering distance of 2mm, additional SAR measurements were required at 1mm from the highest SAR position.

Front

Moving device toward the phantom:

The power state								
Distance [mm]	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**
Main antenna	Normal	Normal	Normal	Normal	Normal	Low	Low	Low

Moving device away from the phantom:

The power state								
Distance [mm]	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Main antenna	Low	Low	Normal	Normal	Low	Normal	Normal	Normal

Rear

Moving device toward the phantom:

The power state								
Distance [mm]	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**
Main antenna	Normal	Normal	Normal	Normal	Normal	Low	Low	Low

Moving device away from the phantom:

The power state								
Distance [mm]	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Main antenna	Low	Low	Normal	Normal	Low	Normal	Normal	Normal

Bottom Edge

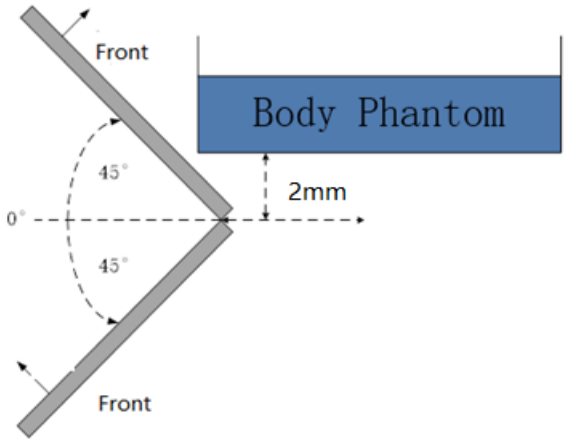
Moving device toward the phantom:

The power state								
Distance [mm]	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**
Main antenna	Normal	Normal	Normal	Normal	Normal	Low	Low	Low

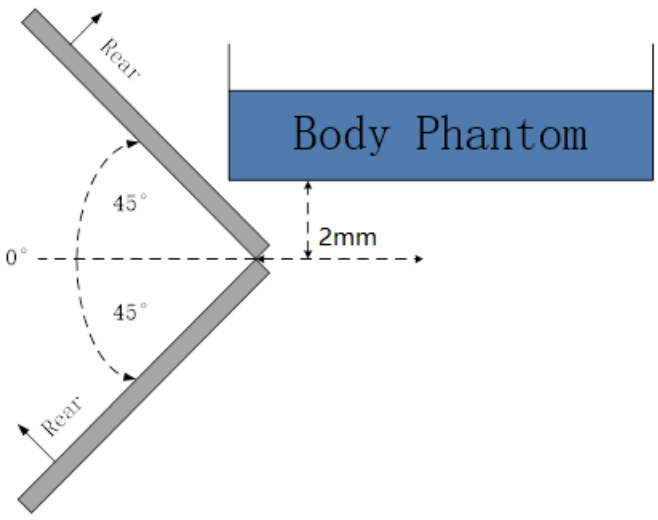
Moving device away from the phantom:

The power state								
Distance [mm]	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Main antenna	Low	Low	Normal	Normal	Low	Normal	Normal	Normal

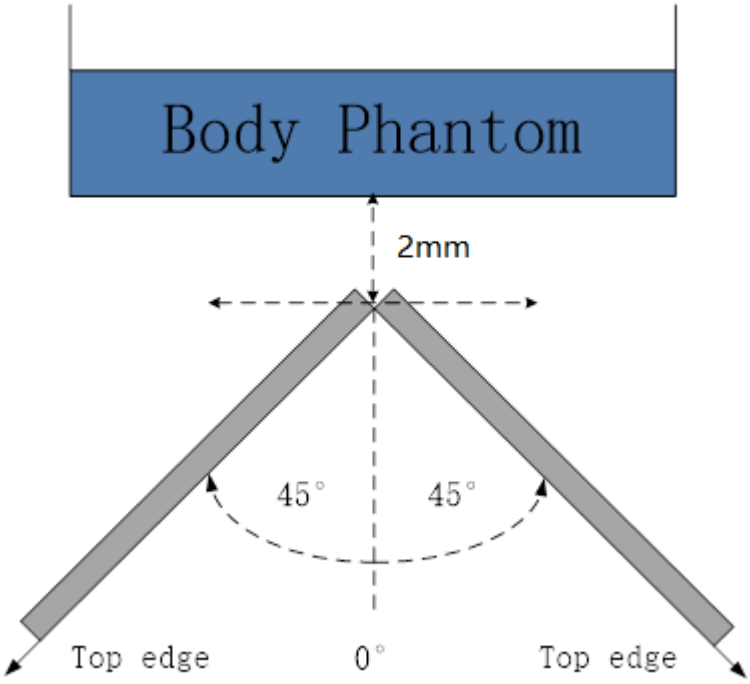
The influence of table tilt angles to proximity sensor triggering is determined by positioning each edge that contains a transmitting antenna, perpendicular to the flat phantom, at the smallest sensor triggering test distance by rotating the device around the edge next to the phantom in ≤ 10° increments until the tablet is ±45° or more from the vertical position at 0°.



The Front evaluation for main antenna



The rear evaluation for main antenna



The bottom edge evaluation for main antenna

Based on the above evaluation, we come to the conclusion that the sensor triggering is not released and normal maximum output power is not restored within the ±45° range at the smallest sensor triggering test distance declared by manufacturer.

ANNEX J SPOT CHECK

J.1 Dielectric Performance

Table J.1-1: Dielectric Performance of Tissue Simulating Liquid

Measurement Date (yyyy-mm-dd)	Type	Frequency	Permittivity ε	Drift (%)	Conductivity σ (S/m)	Drift (%)
2019-10-9	Head	5250 MHz	37.1	3.26	4.722	0.25
	Body	2600 MHz	53.3	1.52	2.195	1.62

Note: The liquid temperature is 22.0℃

J.2 System Verification

Table J.2-1: System Verification of Head

Measurement Date (yyyy-mm-dd)	Frequency	Target value (W/kg)		Measured value(W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
2019-10-9	5250 MHz	23.1	80.8	23.4	80.2	1.30%	-0.74%

Table J.2-2: System Verification of Body

Measurement Date (yyyy-mm-dd)	Frequency	Target value (W/kg)		Measured value (W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
2019-10-9	2600 MHz	24.8	55.0	24.4	54.0	-1.77%	-1.82%

J.3 Conducted power of selected case

Table J.3-1: The conducted Power for LTE

Band	Mode	Frequency (Channel)	Measured Power (dBm)
LTE Band 7	20MHz-1RB-Middle (50)	2560 (21350)	22.90

Table J.3-2: The conducted Power for WLAN

Mode / data rate	Frequency (Channel)	Measured Power (dBm)
802.11a / 6Mbps	60 (5300)	12.95

J.4 Measurement results

Test Band	Channel	Frequency	Test Position	Figure No./Note	Conducted Power (dBm)	Tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Wi-Fi 5G	60	5300	Right	Fig J.6-1	12.95	14.5	0.228	**0.33**	0.661	**0.94**	0.01
LTE Band 7	21350	2560	Bottom	Fig J.6-2	22.90	24	0.360	**0.46**	0.742	**0.96**	-0.11

Table J.4-1: SAR Values (WLAN - Head) – 802.11b (Scaled Reported SAR)

Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
5300	60	Right	Tilt	100%	100%	**0.94**	**0.94**

J.5 Reported SAR Comparison

Exposure Configuration	Technology Band	Reported SAR 1g (W/kg): spot check	Reported SAR 1g (W/kg): original
Head (Separation Distance 0mm)	GSM 850	/	0.22
	PCS 1900	/	0.12
	UMTS FDD 2	/	0.24
	UMTS FDD 4	/	0.20
	UMTS FDD 5	/	0.28
	LTE Band 2	/	0.23
	LTE Band 5	/	0.23
	LTE Band 7	/	0.26
	LTE Band 12	/	0.17
	LTE Band13	/	0.18
	LTE Band 38	/	0.14
	LTE Band 66	/	0.19
	WLAN 2.4 GHz	/	0.74
	WLAN 5GHz	0.94	0.95
Hotspot (Separation Distance 10mm)	GSM 850	/	0.53
	PCS 1900	/	0.54
	UMTS FDD 2	/	1.05
	UMTS FDD 4	/	0.75
	UMTS FDD 5	/	0.51
	LTE Band 2	/	1.10
	LTE Band 5	/	0.52
	LTE Band 7	0.96	1.27
	LTE Band 12	/	0.31
	LTE Band13	/	0.34
	LTE Band 38	/	0.70
	LTE Band 66	/	0.86
	WLAN 2.4 GHz	/	0.17
	WLAN 5GHz	/	0.23

J.6 Graph Results of spot check

WLAN_CH60 Right Tilt
Date: 10/9/2019
Electronics: DAE4 Sn771
Medium: head 5 GHz
Medium parameters used: f = 5300; σ = 4.772 mho/m; εr = 37.05; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: WLAN 5300 Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(5.25, 5.25, 5.25)

Area Scan (111x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.56 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 3.674 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.80 W/kg
SAR(1 g) = 0.661 W/kg; SAR(10 g) = 0.228 W/kg
Maximum value of SAR (measured) = 1.55 W/kg

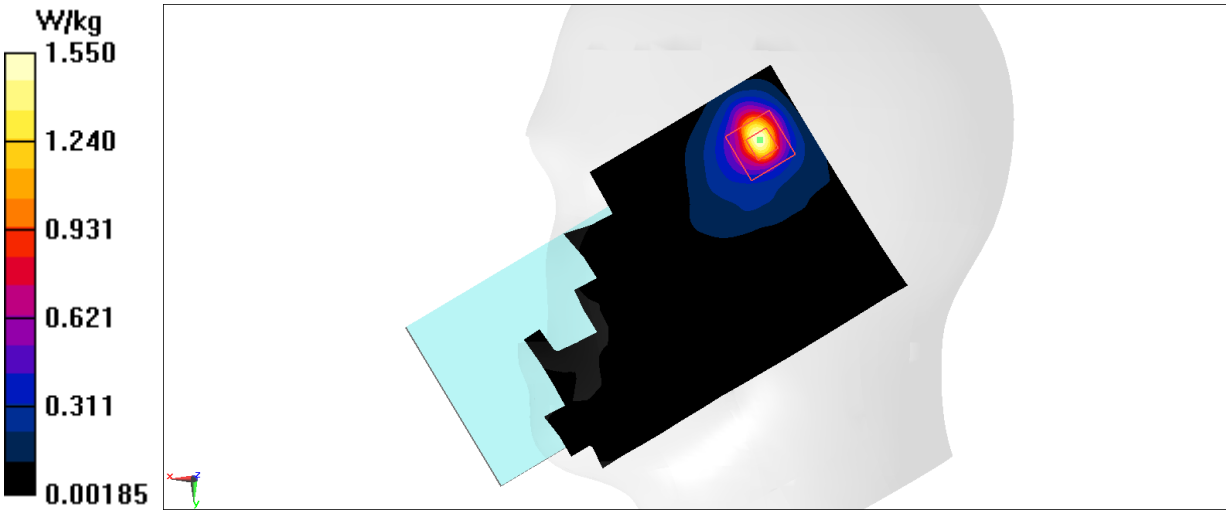


Fig J.6-1

LTE2500-FDD7_CH21350 Bottom
Date: 10/9/2019
Electronics: DAE4 Sn771
Medium: body 2600 MHz
Medium parameters used: f = 2560 MHz; σ = 2.157 mho/m; εr = 53.35; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-FDD7 2560 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(7.49,7.49,7.49)

Area Scan (131x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.17 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.38 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 0.742 W/kg; SAR(10 g) = 0.360 W/kg
Maximum value of SAR (measured) = 1.16 W/kg

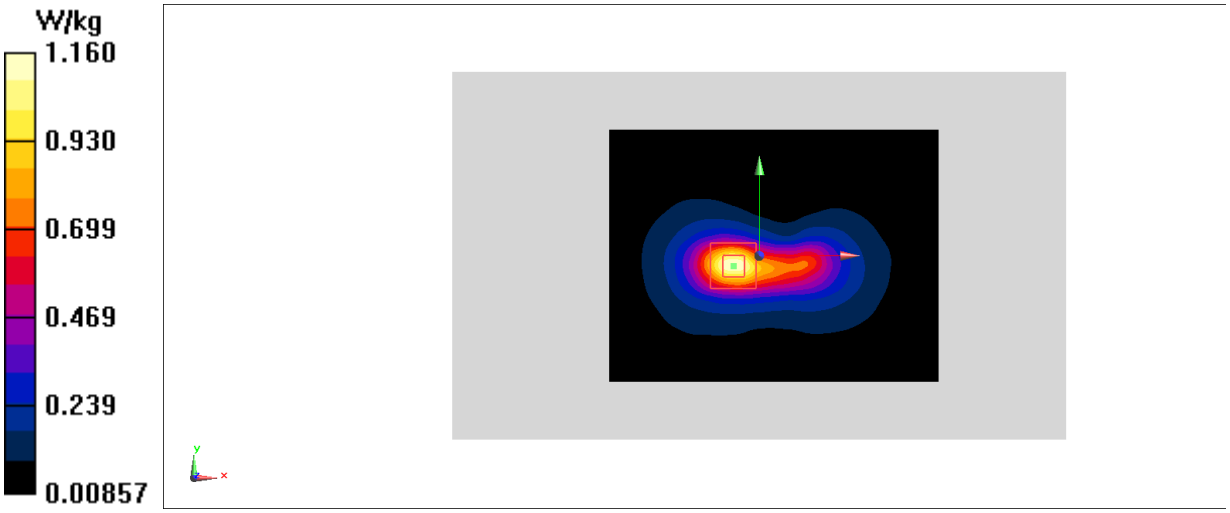


Fig J.6-2

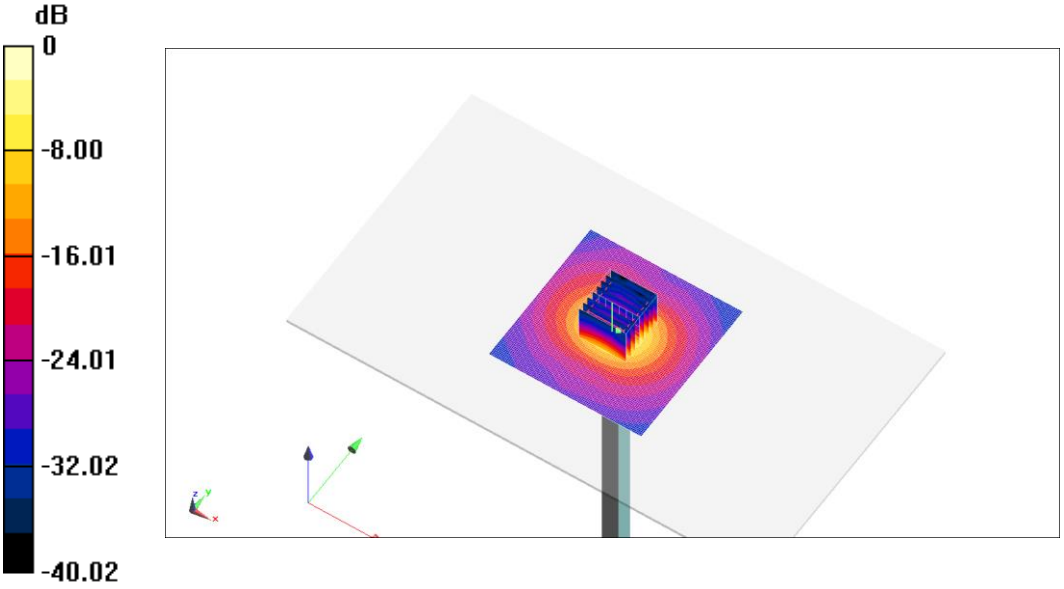
J.7 System Verification Results

5250 MHz

Date: 10/9/2019
Electronics: DAE4 Sn771
Medium: Head 5250 MHz
Medium parameters used: f = 5250 MHz; σ =4.722 mho/m; ε_r = 37.1; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 5250 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(5.39,5.39,5.39)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 17.83 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =76.5 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 27.92 W/kg
SAR(1 g) = 8.02 W/kg; SAR(10 g) = 2.34 W/kg
Maximum value of SAR (measured) = 18.06 W/kg



0 dB = 18.06 W/kg = 12.57 dB W/kg

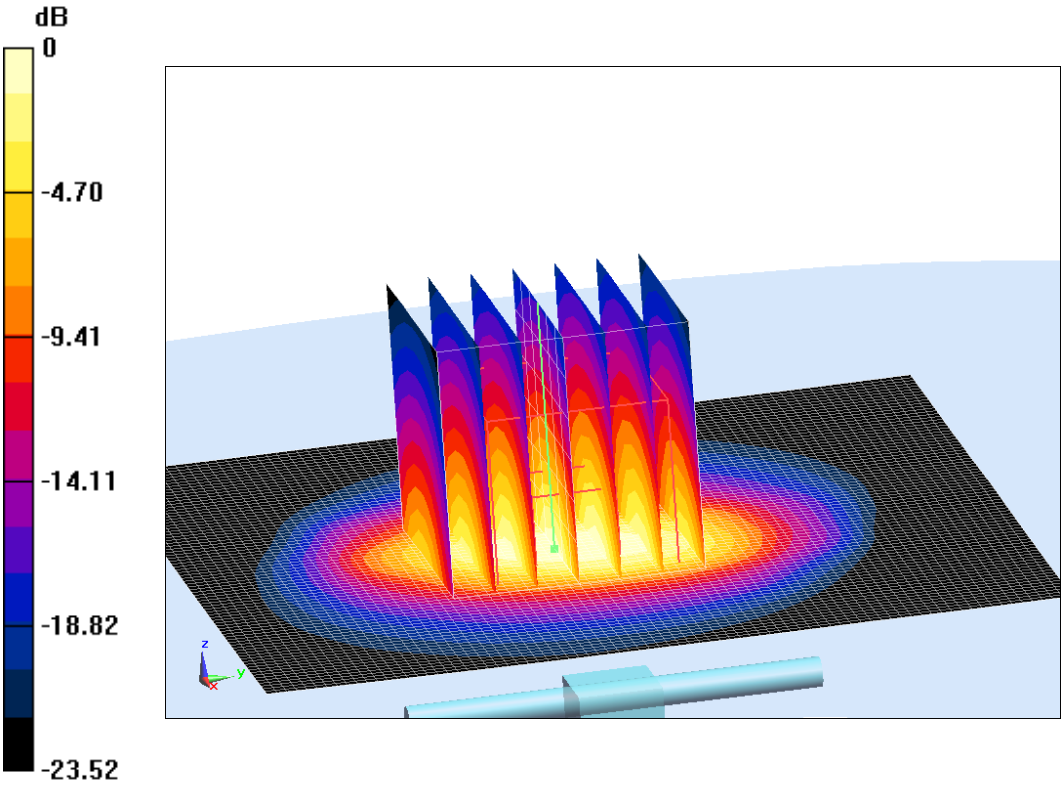
Fig J.7-1 validation 5250 MHz 100mW

2600 MHz

Date: 10/9/2019
Electronics: DAE4 Sn771
Medium: Body 2600 MHz
Medium parameters used: f = 2600 MHz; σ =2.195 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 2600 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(7.49,7.49,7.49)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 23.15 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =109.4 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 28.45 W/kg
SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.09 W/kg
Maximum value of SAR (measured) = 23.31 W/kg



0 dB = 23.31 W/kg = 13.68 dB W/kg

Fig J.7-2 validation 2600 MHz 250mW

ANNEX K Accreditation Certificate

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 600118-0

Telecommunication Technology Labs, CAICT
Beijing
China

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Electromagnetic Compatibility & Telecommunications

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2019-09-26 through 2020-09-30
Effective Dates

For the National Voluntary Laboratory Accreditation Program