Radiofrequency Exposure at Eye Plane of 6 Year Old Child
Smartphone Placed In Cardboard Simulation Position

Smartphone placed in a position to the eyes as it would be placed using the cardboard virtual reality holder.

40dB color Scale.

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Dose (SAR) in an Horizontal (axial) Slice at the Eyes
6 Year Old Boy Model

1g-psSAR = 1.08 W/kg over the entire head
1g-psSAR = 0.86 W/kg in the eyes

White and yellow are the highest doses. Smartphone Placed In Cardboard Simulation Position
Radiofrequency Dose into Eyes of 6 Year Old Child Model
Smartphone Placed In Cardboard Simulation Position

1g-psSAR (peak value axial slice) in Thelonious (6 year old male) anatomically correct model, 0dB=2mW/g, 40 db scale. for smartphone placed in a position to the eyes as it would be placed using the cardboard virtual reality holder.

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Radiofrequency Dose into Eyes of 6 Year Old Child Model Smartphone Placed In Cardboard Simulation Position

1g-psSAR (peak value axial slice) in Thelonious (6 year old male) anatomically correct model, 0dB=2mW/g, 50 db scale. for smartphone placed in a position to the eyes as it would be placed using the cardboard virtual reality holder.

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Radiofrequency Exposure at Forehead Slice of 6 Year Old Child Smartphone Placed In Cardboard Simulation Position

1g-pszSAR (peak value axial slice) in Thelonious (6 year old male) anatomically correct model. 50 db scale. for smartphone placed in a position to the eyes as it would be placed using the cardboard virtual reality holder.

© 2015 EHT/University of Porto Alegre
Radiofrequency Exposure at Mid Head Plane of 6 Year Old Smartphone Placed In Cardboard Simulation Position

40dB color Scale. Smartphone placed in a position to the eyes as it would be placed using the cardboard virtual reality holder.

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And, when placing the antenna in a more distant position on the top of the cell phone in the cheek position:

1g-psSAR = 1.50 W/kg over the entire head (including the pinna)
1g-psSAR = 1.03 W/kg over the entire head (excluding the pinna) and
1g-psSAR = 0.10 W/kg in the eyes.

Exposure (SAR) in Vertical (sagittal) Slice at the Eye
6 Year Old Boy Model

1g-psSAR = 1.08 W/kg over the entire head and
1g-psSAR = 0.86 W/kg in the eyes.

The red cube is the location of the peak dose.
50 dB scale. White and yellow are the highest doses.

Smartphone Placed In Cardboard Simulation Position

© 2015 EHT/University of Porto Alegre

With Anatomical Models Different Properties of Different Body Tissues are considered.

Homogenous liquid inside skull does not realistically represent brain and skull.

TABLE III. Dielectric Properties of the SAM Phantom following the IEEE 1528 Recommended Practice @ 2.45 GHz.

<table>
<thead>
<tr>
<th>Material</th>
<th>ε (Sm/m)</th>
<th>Er</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAM shell</td>
<td>0.0016</td>
<td>5</td>
</tr>
<tr>
<td>SAM liquid</td>
<td>1.8</td>
<td>39.2</td>
</tr>
</tbody>
</table>

TABLE IV. Dielectric Properties of the Heterogeneous Models Tissues @ 2.45 GHz.

<table>
<thead>
<tr>
<th>Tissue</th>
<th>εr</th>
<th>σ (Sm/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat</td>
<td>0.104</td>
<td>5.280</td>
</tr>
<tr>
<td>Bone</td>
<td>0.394</td>
<td>11.381</td>
</tr>
<tr>
<td>Grey matter</td>
<td>1.807</td>
<td>48.911</td>
</tr>
<tr>
<td>White matter</td>
<td>1.215</td>
<td>36.167</td>
</tr>
<tr>
<td>Liquid Brain</td>
<td>66243</td>
<td>3.457</td>
</tr>
<tr>
<td>Muscle</td>
<td>52.729</td>
<td>1.738</td>
</tr>
<tr>
<td>Aqueous Humor</td>
<td>68.208</td>
<td>2.478</td>
</tr>
<tr>
<td>Skin</td>
<td>38.007</td>
<td>1.464</td>
</tr>
<tr>
<td>Crystalline</td>
<td>44.625</td>
<td>1.504</td>
</tr>
<tr>
<td>Sclera</td>
<td>52.628</td>
<td>2.033</td>
</tr>
<tr>
<td>Vitreous Humor</td>
<td>68.208</td>
<td>2.478</td>
</tr>
<tr>
<td>Cerebellum</td>
<td>30.145</td>
<td>1.088</td>
</tr>
<tr>
<td>Nerve</td>
<td>30.145</td>
<td>1.088</td>
</tr>
</tbody>
</table>

Ferreira and de Salles, 2015
RF Exposure Information (SAR)

To reduce exposure to RF energy, use a hands-free accessory or other similar option to keep this device away from your head and body.

**Carry this device at least 10 mm away from your body to ensure exposure levels remain at or below the as-tested levels.** Choose the belt clips, holsters, or other similar body-worn accessories which do not contain metallic components to support operation in this manner. Cases with metal parts may change the RF performance of the device, including its compliance with RF exposure guidelines, in a manner that has not been tested or certified, and use of such accessories should be avoided.

Radio Frequency (RF) Exposure Information
The radiated output power of the Wireless Device is below the Industry Canada (IC) radio frequency exposure limits. The Wireless Device should be used in such a manner such that the potential for human contact during normal operation is minimized.

Children Are Wearing Metal Glasses Despite Warnings That Metal so Close to Brain and Phone Could Intensify Radiation

The ASUS Zen Phone 2 Manual states: Cases with metal parts may change the RF performance of the device, including its compliance with RF exposure guidelines, in a manner that has not been tested or certified, and use of such accessories should be avoided.

Metal can increase radiation exposure by refocusing radiation. The end result can be higher than tested levels to specific tissues.

http://dlcdn.net.asus.com/pub/ASUS/ZenFone/ZE550ML/e10509_ze550ml_ze551ml_em_0601.pdf

Youtube video https://www.youtube.com/watch?v=0v3D3spkxc

from Youtube video https://www.youtube.com/watch?v=0v3D3spkxc
Information Provided to Schools by Google

GOOGLE CARDBOARD

PRODUCT SAFETY INFORMATION

- Take frequent breaks while using Cardboard. If you experience nausea, discomfort, eye strain, or disorientation, immediately discontinue using Cardboard.
- Cardboard is not for use by children without adult supervision.
- Do not use Cardboard while driving, walking, or otherwise by being distracted from real world situations that prevent you from obeying traffic or safety laws. Do not drive or operate heavy machinery immediately after using Cardboard if you feel impaired or disoriented.
- If you have had or could be prone to seizures, consult a doctor before using Cardboard.


Where is the information on young children and on the phone near the eyes?
Kellogg’s Virtual Reality Offer

Get a Free Virtual Reality App and Viewer.

Download the free Kellogg’s® Marvel’s Captain America: Civil War VR app and buy any three participating Cheez-It®, Keebler®, Kellogg’s® or Pringles® products.

© 2016 MARVEL

Viewers appropriate for ages 8 and up.
Promotion States That Children Under 8 Should Not Use.
Youtube Video Shows Print on Viewer

https://www.youtube.com/watch?v=152qfHkgMlo&feature=youtu.be
Youtube Has Many Videos of Young Children Using Virtual Reality

https://www.youtube.com/watch?v=7KZ5gvMGv_s
Baby trying out VR for the first time.

https://www.youtube.com/watch?v=kgzMkvsCRrl
Warning

https://www.youtube.com/watch?v=4sxAgVM5tOw

6 Year Old Tries Virtual Reality 'Job Simulator' Game

352,008 views

Road to VR
Published on Apr 5, 2016

NOTE: Most companies recommend children under 13 not spend significant time wearing a VR headset.
Manufacturer Recommendations

Virtual Reality Systems
Health and Safety Information  SAMSUNG GEAR VR

Seizures

Some people (about 1 in 4000) may have severe dizziness, seizures, epileptic seizures or blackouts triggered by light flashes or patterns, and this may occur while they are watching TV, playing video games or experiencing virtual reality, even if they have never had a seizure or blackout before or have no history of seizures or epilepsy. Such seizures are more common in children and young people under the age of 20. Anyone who has had a seizure, loss of awareness, or other symptom linked to an epileptic condition should consult with a doctor before using the Gear VR.

The Gear VR headset should not be used by children under the age of 13, as these children may be at increased health and safety risk.

- A comfortable virtual reality experience requires an unimpaired sense of motion and balance. Do not use the Gear VR when you are tired, need sleep, are under the influence of alcohol or drugs, are hung-over, have digestive problems, are under emotional stress or anxiety, or when suffering from cold, flu, headaches, migraines, or earaches, as this can increase your susceptibility to adverse symptoms.

TODDLER'S FIRST VIRTUAL REALITY VR EXPERIENCE!
**WARNING**  **Seizures:** Some people (about 1 in 4000) may have severe dizziness, seizures, epileptic seizures or blackouts triggered by light flashes or patterns, and this may occur while they are watching TV, playing video games or experiencing virtual reality, even if they have never had a seizure or blackout before or have no history of seizures or epilepsy. Such seizures are more common in children and young people under the age of 20. Anyone who has had a seizure, loss of awareness, or other symptom linked to an epileptic condition should consult a doctor before using the Gear VR.

**WARNING**  **Children:** The Gear VR should not be used by children under the age of 13. Adults should monitor children (age 13 and older) who are using or have used the Gear VR for any of the symptoms described below, and should limit the time children spend
Together with news platform «20 Minuten», we asked children to draw their dream house. The three most creative drawings were recreated in 3D and brought to life on an Oculus VR headset. This video shows how the kids reacted when their dream came alive in virtual reality.
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Some people (about 1 in 4000) may have severe dizziness, seizures, epileptic seizures or blackouts triggered by light flashes or patterns, and this may occur while they are watching TV, playing video games or experiencing virtual reality, even if they have never had a seizure or blackout before or have no history of seizures or epilepsy. Such seizures are more common in children and young people under the age of 20. Anyone who has had a seizure, loss of awareness, or other symptom linked to an epileptic condition should see a doctor before using the headset.

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