



Browse ▾ My Settings ▾ Help ▾

Institutional Sign In

Institutional Sign In

13



All



ADVANCED SEARCH

Conferences &gt; 2023 5th International Confer... ?

# A Low SAR Beam Steering Slotted Array Antenna for mmWave 5G Mobile Handsets

Publisher: IEEE

Cite This

PDF

M. Manikandan ; S. Karthigal Lakshmi ; All Authors ...

83

Full  
Text Views

## Alerts

Manage Content Alerts

Add to Citation Alerts

### Abstract

#### Document Sections

1. Introduction
2. Proposed Antenna Design
3. Design Considerations
4. Results and Discussions
5. Conclusions

Authors

Figures

References

Keywords

Metrics

More Like This



**Abstract:**A beam steering array antenna, which reduces SAR value for mm-wave 5G mobile handset is proposed. The proposed design is based on the model of i Phone 6s plus back panel ... [View more](#)

#### ► Metadata

##### Abstract:

A beam steering array antenna, which reduces SAR value for mm-wave 5G mobile handset is proposed. The proposed design is based on the model of i Phone 6s plus back panel which consists of fully metal covered back cover and LCD shielding. The metal cover has two sub arrays; one formed at the back side, consists of 8 rotated L shaped slots, can be used in talk mode and another formed on the top of the metal frame, consist of 8 rotated rectangular slots can be used in data mode. The proposed antenna array exhibits good reflection coefficient and from the evidence of radiation pattern measured at different scan angles, the structure has acceptable beam steering property. The maximum achievable gain is 16. S5dBi with bandwidth of 3.4 GHZ. The proposed L shaped slotted rectangular sub array reduces SAR to 0.0609 W/Kg and 0.653 W/Kg for 0° and 40° Scan angles respectively.

**Published in:** 2023 5th International Conference on Smart Systems and Inventive Technology (ICSSIT)

**Date of Conference:** 23-25 January 2023

**INSPEC Accession Number:** 22777146

**Date Added to IEEE Xplore:** 14 March 2023

**DOI:** 10.1109/ICSSIT55814.2023.10060874

► **ISBN Information:**

**Publisher:** IEEE

► **ISSN Information:**

**Conference Location:** Tirunelveli, India

## Contents

### 1. Introduction

An antenna plays a crucial role in the development of mobile technology from the beginning of first generation (1G). The newly launched fifth generation (5G) mobile technology is committed with accommodating an ultra fast data rate (in few gigabits per second), having very low latency (in milli