# Article information:

60-GHz 5-bit Phase Shifter With Integrated VGA Phase-Error Compensation | IEEE Journals & Magazine | IEEE Xplore  
<https://ieeexplore.ieee.org/abstract/document/6464534>

# Article summary:

1. This article presents a 57-64 GHz 5-bit switch-type phase shifter integrated with a low phase-variation variable gain amplifier (VGA).

2. The proposed VGA can provide appropriate gain tuning with almost constant phase characteristics, reducing the complexity of phase tuning in a phased-array system.

3. The proposed technique requires only one auto gain control in the self-calibration phased-array system, which is using fixed phase-compensation blocks to simplify the control complexity.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is overall reliable and trustworthy as it provides detailed information about the design and implementation of the 5-bit switch type phase shifter integrated with a low phase variation variable gain amplifier (VGA). It also provides evidence for its claims such as measured root mean square (rms) phase error of 2° at 62 GHz, insertion loss flatness of ±0.8 dB for a specific phase shifting state across 57–64 GHz, and 6.2 dB gain tuning range with only 1.86° phase variation. Furthermore, it cites relevant sources such as [1], [2], [3] and [4] to support its claims.

However, there are some potential biases in the article that should be noted. For example, it does not present both sides equally when discussing the conventional approach for achieving low phase variation VGA; instead it focuses more on its own proposed technique without exploring counterarguments or other possible solutions to this problem. Additionally, there is no mention of any risks associated with this technology or any potential drawbacks that could arise from its implementation in real world applications.

# Topics for further research:

* Phase shifter design and implementation
* Low phase variation variable gain amplifier
* Phase error measurement
* Insertion loss flatness
* Gain tuning range
* Alternatives to low phase variation VGA

# Report location:

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