

पेटेंट कार्यालय
शासकीय जर्नल

**OFFICIAL JOURNAL
OF
THE PATENT OFFICE**

निर्गमन सं. 14/2021
ISSUE NO. 14/2021

शुक्रवार
FRIDAY

दिनांक: 02/04/2021
DATE: 02/04/2021

पेटेंट कार्यालय का एक प्रकाशन
PUBLICATION OF THE PATENT OFFICE

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202111012479 A

(19) INDIA

(22) Date of filing of Application :23/03/2021

(43) Publication Date : 02/04/2021

(54) Title of the invention : A SYSTEM AND METHOD TO GENERATE ARBITRARY CHIRP SIGNAL BY APPROXIMATED PARABOLIC SHAPED MICROWAVE SIGNAL

(51) International classification	:H04B0010500000, H04L0027120000, H04B0010516000, H04B0010251300, H01Q0015140000	(71)Name of Applicant : 1)Mr. Ritesh Kumar Address of Applicant :PhD Scholar, Indian Institute of Technology (Indian School of Mines) Dhanbad & ASSISTANT PROFESSOR, Electronics & Communication Engineering Department, Madan Mohan Malaviya University of Technology GORAKHPUR, UP- 273010 INDIA Uttar Pradesh India
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(61) Patent of Addition to Application Number	:NA	2)Prof. Sanjeev Kumar Raghuwanshi
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(57) Abstract :

The present disclosure relates to a system and method to generate arbitrary chirp signal by an approximated parabolic shaped microwave signal. A photonic technique is proposed for the generation of an arbitrary chirp microwave signal without using any external source of chirp signal. This has been done by generating an approximated parabolic-shaped signal of power -36dBm and 2GHz frequency by externally modulating optical carrier signal and filtering through optical band pass filter. In the generation of parabolic shaped signal only two harmonics is considered, and their coefficient ratio is maintained by adjusted modulation index of external modulator by properly setting its bias voltage. Then, electrically detected parabolic shaped signal is used to frequency modulate another optical signal followed by the phase modulation. Finally, phase modulated signal is observed as an arbitrary chirp microwave signal at photodetector. The generated arbitrary chirped microwave signal has maximum power of -39.6dBm at 2GHz.

No. of Pages : 39 No. of Claims : 10