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Proposal of Relativistic Electronic Circuit using Microstrip Add-drop Multiplexer

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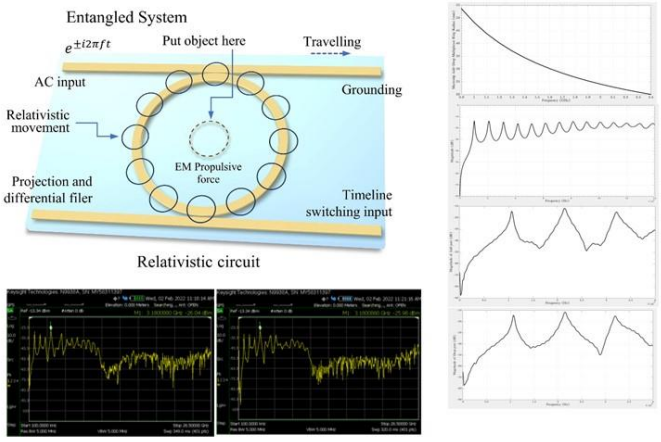
Abstract

This paper presents a brief detail of the relativistic circle that can be applied for various applications. Relativistic electronics is the challenged device that has the capacity of the new era of technology called civilian technology. Non-relativistic electronics have the limitation that the speed of operation cannot serve the demand of the required applications. The technique to achieve electron transmission faster than light has not been realistic yet. This work has proved that electron speed faster than the speed of light can be realized using the relativistic circle. The functions of the operations are the Rabi oscillation and the successive



filtering. The AC source is input into the microstrip add-drop multiplexer. The wave-particle of the signal oscillation within the microstrip can be obtained. The higher filtering frequency gives the higher electron warp speed. In applications, broadband plasma frequencies can be generated for various applications.

Keywords: Relativistic electronics, Microstrip, Rabi oscillation, Warp speed, Two-level system

1. Introduction

Relativistic circle can be formed by driven particles moving along the circumference of the device. The principle is that the wave-particle aspect, from which the driven particles are moving along the circle, the wave energy is formed at the center [1-4]. The apart of particle along the circle and wave propagation along the radial is always $\frac{\pi}{2}$, namely, the entanglement. The observer can observe one branch of wave-particle each time from outside the circle. Both branches can be observed simultaneously by the observer on the circular path or inside the circle. This means that the particle speed (frequency) observed at the center is equal or greater than the speed of light. A circle can be made by any material, where the conditions are the product of the driven frequency (speed) and circle radius must equal to the speed of light divided by $2\pi n$ in the used material, where n is the material refractive index. The speed of particles can be increased to the warp speed by increasing the wave frequency. The technique is known as a successive filtering of the wave frequency can offer to obtain higher frequency [5-8], from which the speed of particle along the circular path is faster than light. The device structure offers this behavior is a nonlinear material add-drop filter [9-12], where the matching between the ring radius and driven frequency is the criteria of the structure. There is no limit of material ring radius and frequency, which means that the higher warp speed of particles can be generated in both simulation and experiment until the stopping state occurrence, in which the system is collapsed and rerun again. Using this device structure and technique, many applications can be realized based on relativistic circle structure operation.

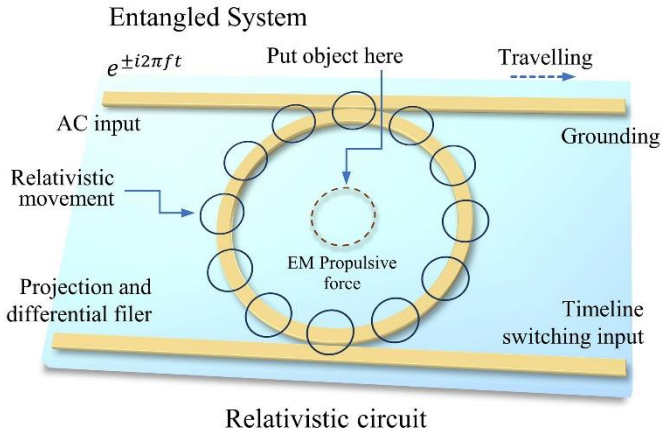


Figure 1: Relativistic circle structure and details.

2. Method and Results

From Figure 1, the design circuit using an add-drop multiplexer is given in general. The available material and appropriated hardware can be applied. The investigation can be explored in either simulation or experiment. In principle, there are various methods that can apply to move the medium along the circular pipe (waveguide), which depend on the used medium materials. From which the required matching between frequency and ring radius are the applied constrains. From the initial set up, it is given that the speed of particles along the circle is equal to the speed of light in the used medium. The operation is started by driving particles under the successive filtering until the Rabi oscillation has occurred. The measurement of the output waves at the center in terms of frequency is taken using the spectrum analyzer. The Rabi oscillation is the behavior of the two-level system that occurs when the speed of particles is equal to speed of light. The characteristics of the outputs are the second harmonic oscillation, form which there are two side peaks along with the center one. From this point, the increasing in the successive filtering frequency the increasing in particle warp speed is observed. There are various aspects can be investigated until the stopped state has occurred. But we will leave them to investigate later on. In this paper, the microwave substrate is the FR4, the ring radius was 25 mm, where the driven ac source frequency was 100 MHZ to 4 GHz. The warp speed generated by the successive filtering is calculated and discussed. The possible applications in terms of warp speed are given in Table 1. Some results obtained from both experiment using a microstrip add-drop filters are given in Figures 2-5.

In Figure 2 (a) Relationship between frequency and ring radius based on FR4 substrate. Electrical properties: the dielectric constant was 4.55, the height of the supporting base was

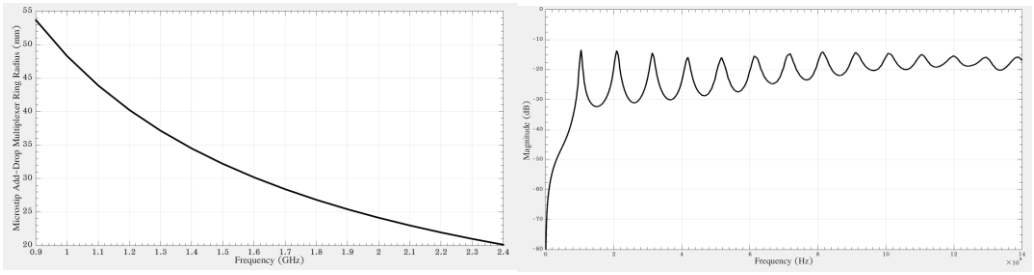
1.6 mm, and loos tangent was 0.02. The relationship of scattering parameters (S-parameter) comprised the coefficient of the coupling factor (at drop port) as S_{21} and the capability of voltage transferring from port 1 (Input port, V1) to port 2 (Drop port), as seen in equation (1).

$$S_{21} = 20\log\frac{V_2}{V_1} \quad (1)$$

The isolation (at add port) or S_{31} transferred voltage from input port to port 3 (add port) as seen in equation (2).

$$S_{31} = 20\log\frac{V_3}{V_1} \quad (2)$$

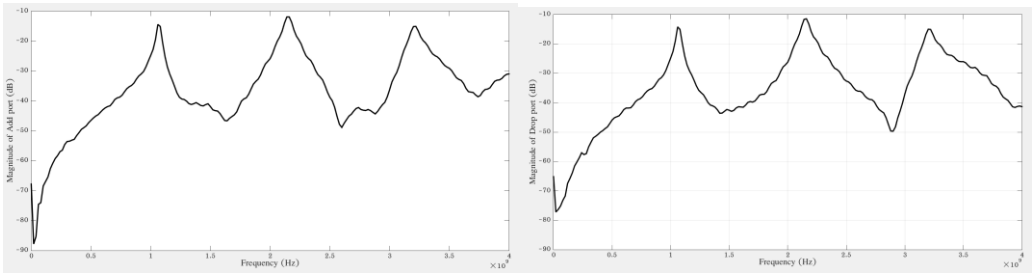
The frequency response of Rabi oscillation as shown in Figure 2 (b) in drop port from 0.1-14 GHz, respectively.



(a) (b)

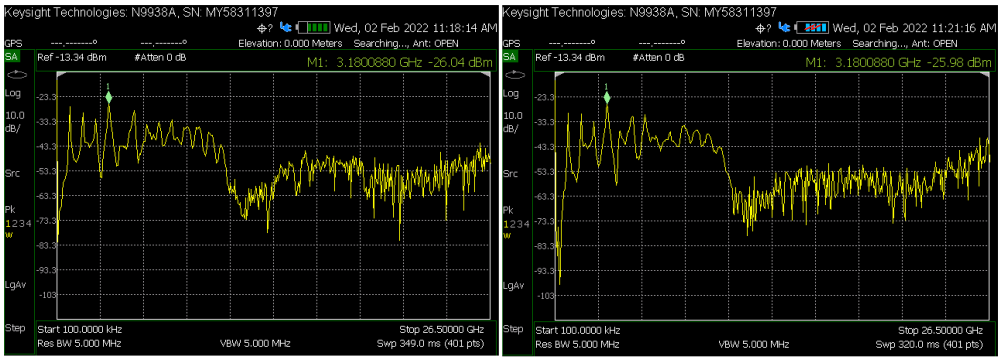
Figure 2: (a) Relationship between frequency and ring radius; (b) Rabi oscillation results from 0.1-14 GHz.

The result of measurement of Rabi oscillation using Network Analyzer calculate from 0.1-4 GHz. In Figure 3 (a) the Rabi oscillation frequency of the drop port (S21) form 100 MHz – 4 GHz, the magnitude of -14.20 dB, -12.25 dB and -17.31 dB at frequency of 1.01 GHz, 2.13 GHz, and 3.21 GHz, respectively. And in Figure 3 (a) the Rabi oscillation frequency of the add port form 100 MHz – 4 GHz, the magnitude of -14.32 dB, -12.23 dB and -17.42 dB at frequency of 1.02 GHz, 2.11 GHz, and 3.23 GHz, respectively.



(a) (b)

Figure 3: Rabi oscillation frequency (a) Add port and (b) drop port form 100 MHz to 4 GHz.



(a) (b)

Figure 4: Measurement result of coupling effects (a) Add port and (b) drop port form 100 MHz to 26.5 GHz.

Finally, the measurement result of coupling effects of particle travelling along the circular paths were measured by the spectrum analyzer that were calibrated form 100 MHz to 26.5 GHz. The drop port shown in Figure 4 (a) coupling effects and add port as in Figure 4 (b).

3. Mercury: A case study

To obtain the larger ring radius, therefore, a suitable material to address the driven frequency is required. The practical warp drive using the mercury material with the refractive index of 1.000291, ring radius of 9.55 meters is proposed. The driven ac source frequency of 5 MHz is applied into the system via the input port. The required warp speed and EM propulsive force can be obtained by the successive filtering frequency.

Relativistic Circle	
Rabi Radius Design	$\frac{c}{n} = 2\pi fr, \;\; r = \frac{3\times10^8}{2\pi fn},$ where $n = 1.000291, \;\; f = 5\times10^6$ Hz
Mercury Ring	$\frac{3\times10^8}{1.000291\times6.28\times5\times10^6} = 0.0955\times10^2 = 9.55$ meters. AC input is $e^{\pm i2\pi ft}$ into the input port

The initial applied AC frequency source is 5 MHz;

The successive filtering is applied to obtain the warp speed. The higher frequency the higher warp speed is obtained;

Warp speed $= \frac{v}{c} = 9.55\times2\pi f.$ f is obtained by the successive resonant frequency.

$\frac{EM \;\; Propulsive \;\; Force}{m} = 9.55\times\omega^2$. It can apply to drive the vehicle. The switching control is applied via the add port to the required timeline destination.

4. Discussion

From Table 1, the entangled circuit is formed by the microstrip add-drop multiplexer. When the particle speed on the microstrip circumference is equal to the speed of light, the Rabi oscillation under the successive filtering is observed. The time entanglement has been established, which can be applied to quantum technology in the form of electron plasma and density. The warp speed electron applications are also valid and used in all cases. The entangled electrons will be collapsed, and the timeline has occurred. It can be used for teleportation under the warp speed condition. The electromagnetic propulsive force and torque can also be formed at the center ring. With the continuous successive filtering, the coupling between particles on the circumference induces the coupling power at the center ring, where the weak, electromagnetic, and the strong coupling can occur, which are applied for high power applications. It is known as a white hole that can be applied for warp speed teleportation. However, it is the behavior on the timeline. The coupling power known as a black hole may have arisen randomly on another side. Eventually, the stopped state has arrived, wherein the Bose-Einstein is established, and the singularity is formed. The hibernation is also formed, which is formulated by the Maxwell- Boltzmann distribution. The circuit is returning to the initial setup. However, the vibration at the Bose-Einstein condensate

may go to another side of the initial state called a parallel world, which is a half of pi apart be the initial setting state.

Table 1. The potential application using the relativistic circle concept [2, 5, 6, 9, 10, 13-20].

List	Mathematical Model	Types of Application
1	$\omega_p = \sqrt{\frac{n_\varepsilon \varepsilon^2}{\varepsilon_0 m}}$; the plasma frequency generated by the wave-particle duality at the center ring	Relativistic electronics, warp speed sensors, wireless and wired devices [2, 5, 20]
2	$v = \omega r = 2\pi fr$; the warp speed can be calculated from the obtained frequency	Warp speed particles [2, 5, 20]
3	$\frac{F}{m} = (2\pi f)^2 r$; the required parameter is only frequency	EM propulsive force, warp speed [20]
4	$Torque = Fr$; r is the ring radius	Micro motor, micro robot, warp speed drug delivery [20]
5	$\sum_{i=1}^{n} \frac{1}{2} m(2\pi f)^2 = Nk_B[T_f - T_i]$; where T_f and T_i are the final and initial temperature, respectively	Warp speed temperature sensors, heating/cooling environment, hibernation, thermos-electric device [6, 20]
6	$\|\psi \geq \alpha \|0 \geq \beta \|1>$, where $\alpha = \cos\left(\frac{\theta}{2}\right)$, $\beta = e^{i\varphi} \sin\left(\frac{\theta}{2}\right)$; the entangled pair is obtained from the two side peaks of the Rabi oscillation before collapsing	Warp speed quantum bits, quantum gates, quantum communications, quantum sensors, quantum networks, quantum consciousness, humanoid brain [6]
7	$\left[e^{+i2\pi f(t+\Delta t)}.e^{-i2\pi f(t-\Delta t)}.e^{i2\pi ft}\right]$; the timeline can be formed after the entangled pair collapsing	Information teleportation, life teleportation, telepathy, telepathic medicine, telepathic telephone [20]
8	Bose-Einstein Condensate	Matter – dark matter separation, matter and anti-matter separation, fusion energy source [20]
9	Weak, EM, Strong effects within the relativistic circle	High power and energy sources [19]
10	Black hole, worm hole and singularity, parallel worlds	Energy source, security circuit and transportation in space [1, 2, 19]

5. Conclusion

We have demonstrated the microstrip add-drop multiplexer as an entangled circuit under successive filtering. Principally, the add-drop filter is namely a filtering device. The device size of the entangle ring has no limitation, which depends on the product between the driven frequency and ring radius with the selected material, which means that the ring radius can be the length from the micro size to the universe size. For instance, a gravity wave with a large ring radius can also be formed. A particle is a large object in space, the energy wave is formed at the center, therefore, there is electron oscillation in any place with metallic materials. Many applications of such a device can be tested, as shown in Table 1. One of the applications that will happen soon is the EM propulsive force for traveling in space and life teleportation.

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