## CLAIMS

1. A single-pole-double-throw (SPDT) amplifier having two inputs and one output, the SPDT amplifier comprising:

two distributed switchable base lines, each of the two distributed switchable base lines coupled to the two inputs of the SPDT amplifier, and each of the two distributed switchable base lines including a switch array that includes a first switch S1 and a second switch S2; and

a two stage distributed amplifier connected between the distributed switchable base lines, and coupled to the output, wherein the switch arrays of the two distributed switchable base lines turn on and off to amplify periodically input signals at the two inputs.

2. The SPDT amplifier in accordance with Claim 1, wherein each of the two distributed switchable base lines includes transmission line TL1 and transmission line TL2, a portion of the input signals to the two inputs amplifies after passing through a first branch line section that includes TL1, and another portion of the input signals amplifies after passing through a second branch line section that includes TL1 + 2 x TL2.

3. The SPDT amplifier in accordance with Claim 2, wherein a length of the first branch line section and a length of the second branch line section are smaller than a quarter wavelength.

4. The SPDT amplifier in accordance with Claim 2 ~~3~~, wherein the first switch S1 connects to an input of TL1 of the first branch line section, and the second switch S2 connects between TL1 and TL2 of the second branch line section.

5. The SPDT amplifier in accordance with Claim 1, wherein a spacing between S1 and S2 is TL1 + TL2.

6. A receiver comprising:

the SPDT amplifier in accordance with Claim 1;

a plurality of Low Noise Amplifiers (LNAs) coupled to the SPDT amplifier; and

a differential detector coupled to the plurality of LNAs.

7. The receiver in accordance with Claim 6, wherein the plurality of LNAs is a cascaded four-stage LNA.

8. The receiver in accordance with Claim 6, wherein the receiver is a Dicke radiometer.

9. The receiver in accordance with Claim 6, configured to modulate an input signal received at the two inputs and maintain a low switch loss simultaneously.

10. A method for amplifying an input signal using a distributed switchable base line and a two-stage distributed amplifier, comprising:

amplifying a first portion of the input signal by the two-stage distributed amplifier after the input signal passes through a first portion of the distributed switchable base line that includes a first branch line section with transmission line TL1; and

amplifying a second portion of the input signal by the two-stage distributed amplifier after the input signal passes through an additional portion of the distributed switchable base line that includes a second branch line section with transmission lines of TL1 + 2 x TL2.