CLAIMS

1. A recording circuit comprising:

a multiplexing circuit configured to receive a plurality of input signals and to produce a multiplexed output signal comprising the plurality of input signals; and

a plurality of sampling circuits electrically coupled in parallel to each other, each sampling circuit being configured to sample a portion of the multiplexed output signal corresponding to an input signal of the plurality of input signals and the sampling circuits configured to alternately produce an output signal corresponding to the sampled portion.

2. The recording circuit as claimed in claim 1, further comprising an analogue-to-digital converter configured to receive the output signal.

3. The recording circuit as claimed in claim 1 or 2, further comprising a plurality of buffers, each buffer being configured to supply an input signal of the plurality of input signals to the multiplexing circuit.

4. The recording circuit as claimed in any one of claims 1 to 3, wherein the number of the plurality of sampling circuits is less than the number of the plurality of input signals.

5. The recording circuit as claimed in any one of claims 1 to 4, wherein the recording circuit comprises two sampling circuits.

6. The recording circuit as claimed in any one of claims 1 to 4, wherein the recording circuit comprises three sampling circuits.

7. A method of controlling a recording circuit, the method comprising:

multiplexing a plurality of input signals to produce a multiplexed output signal;

sampling a portion of the multiplexed output signal corresponding to an input signal of the plurality of input signals via each sampling circuit of a plurality of sampling circuits electrically coupled in parallel to each other; and

producing alternately an output signal corresponding to the sampled portion from the sampling circuits.

8. The method as claimed in claim 7, further comprising converting the output signal to a digital signal.

9. The method as claimed in claim 8, wherein converting the output signal to a digital signal comprises converting over a time interval, T_{conv}, defined by

$$T_{conv} = \frac{1}{(2nf_{signal})},$$

where n is the number of the plurality of input signals, and

f_{signal} is a bandwidth of each input signal of the plurality of input signals.

10. The method as claimed in any one of claims 7 to 9, wherein the number of the plurality of sampling circuits is less than the number of the plurality of input signals.

11. The method as claimed in any one of claims 7 to 10, wherein the method comprises sampling the multiplexed output signal via two sampling circuits.

12. The method as claimed in any one of claims 7 to 10, wherein the method comprises sampling the multiplexed output signal via three sampling circuits.

13. The method as claimed in any one of claims 7 to 12, wherein sampling a portion of the multiplexed output signal comprises sampling over a time interval, T_{sample}, defined by

$$T_{sample} = \frac{(m-1)}{(2nf_{signal})},$$

where m is the number of the plurality of sampling circuits,

n is the number of the plurality of input signals, and

f_{signal} is a bandwidth of each input signal of the plurality of input signals.

We claim:

1. A recording circuit comprising:

a multiplexing circuit configured to receive a plurality of input signals and to produce a multiplexed output signal comprising the plurality of input signals; and

a plurality of sampling circuits electrically coupled in parallel to each other, each sampling circuit being configured to sample a portion of the multiplexed output signal corresponding to an input signal of the plurality of input signals and the sampling circuits configured to alternatively hold the sampled portion to alternately produce an output signal corresponding to the sampled portion.

2. The recording circuit as claimed in claim 1, further comprising an analogue-to-digital converter configured to receive the output signal.

3. The recording circuit as claimed in claim 1, further comprising a plurality of buffers, each buffer being configured to supply an input signal of the plurality of input signals to the multiplexing circuit.

4. The recording circuit as claimed in claim 1, wherein the number of the plurality of sampling circuits is less than the number of the plurality of input signals.

5. The recording circuit as claimed in claim 1, wherein the recording circuit comprises two sampling circuits.

6. The recording circuit as claimed in claim 1, wherein the recording circuit comprises three sampling circuits.

7. A method of controlling a recording circuit, the method comprising:

multiplexing a plurality of input signals to produce a multiplexed output signal;

sampling a portion of the multiplexed output signal corresponding to an input signal of the plurality of input signals via each sampling circuit of a plurality of sampling circuits electrically coupled in parallel to each other; and

holding alternately the sampled portion to produce alternately an output signal corresponding to the sampled portion from the sampling circuits.

8. The method as claimed in claim 7, further comprising converting the output signal to a digital signal.

9. The method as claimed in claim 8, wherein converting the output signal to a digital signal comprises converting over a time interval, T_{conv}, defined by

$$T_{conv} = \frac{1}{(2nf_{signal})},$$

where n is the number of the plurality of input signals, and

f_{signal} is a bandwidth of each input signal of the plurality of input signals.

10. The method as claimed in claim 7, wherein the number of the plurality of sampling circuits is less than the number of the plurality of input signals.

11. The method as claimed in claim 7, wherein the method comprises sampling the multiplexed output signal via two sampling circuits.

12. The method as claimed in claim 7, wherein the method comprises sampling the multiplexed output signal via three sampling circuits.

13. The method as claimed in claim 7, wherein sampling a portion of the multiplexed output signal comprises sampling over a time interval, T_{sample}, defined by

$$T_{sample} = \frac{(m-1)}{(2nf_{signal})},$$

where m is the number of the plurality of sampling circuits,

n is the number of the plurality of input signals, and

f_{signal} is a bandwidth of each input signal of the plurality of input signals.