Claims

What is claimed is:

1. A system comprising:

a first device configured to ~~process a noisy signal based on~~ receive a vertically polarized signal ~~from an antenna, to receive~~ and a first noise ~~signal~~ component ~~based on~~ generated from a horizontally polarized signal, and to provide a first adaptive~~ly~~ cancellation of a portion of ~~first~~ vertically polarized noise ~~from~~ in the vertically polarized signal ~~based on the noisy vertically polarized signal~~, the first adaptive cancellation being based on the first noise ~~signal~~ component, ~~to generate~~ and the first adaptive cancellation generating a first ~~clean~~ adaptively canceled signal;

a second device configured to ~~process a noisy signal based on~~ receive the horizontally polarized signal ~~from the antenna, to receive~~ and a second noise ~~signal~~ component ~~based on~~ generated from the vertically polarized signal, and to generate a second adaptive~~ly~~ cancellation of a portion of ~~second~~ horizontally polarized noise ~~from~~ in the horizontally polarized signal ~~based on the noisy horizontally polarized signal~~, the second adaptive cancellation being based on the second noise ~~signal~~ component, ~~to generate~~ and the second adaptive cancellation generating a second ~~clean~~ adaptively canceled signal;

a single cable coupled to the first device and to the second device, the single cable adapted to facilitate transmission of the second noise component from the second device to the first device, and adapted to facilitate transmission of the first noise component from the first device to the second device~~;~~.

~~a first power splitter coupled to the first device and the single cable, the first power splitter configured to receive the first noise signal from the single cable, to provide the first noise signal to the first device, to receive the second noise signal from the first device, and to provide the second noise signal to the single cable; and~~

~~a second power splitter coupled to the second device and the single cable, the second power splitter configured to receive the second noise signal from the single cable, to provide the second noise signal to the second device, and to provide the first noise signal from the second device to the single cable.~~

2. The system of claim 1 ~~wherein~~ further comprising ~~the~~ a first power splitter coupled to the first device and to the single cable, the first power splitter configured to provide~~s~~ the first noise ~~signal~~ component to the first device over a first port and the first power splitter configured to

receive~~s~~ the second noise ~~signal~~ component from the first device over a second port, the first port ~~of the first power splitter~~ being at least partially isolated from the second port.

3. The system of claim 1 ~~wherein~~ further comprising ~~the~~ a first ~~and second~~ power splitter~~s~~ coupled to the first device and to the single cable, and a second power splitter coupled to the second device, one or more of the first power splitter and the second power splitter comprising a ~~are~~ reactive power splitter~~s~~.

4. The system of claim 1 wherein one or more of the first device and the second device~~s are~~ comprises a receiver~~s~~ coupled to an antenna configured to receive the signal.

5. The system of claim 1 wherein the first device is configured to ~~adaptively cancelling first noise from the noisy signal based on the vertically polarized signal comprises equalizing~~ equalize ~~the noisy signal based on~~ the vertically polarized noise ~~signal, the equalization being~~ based at least partially on the ~~first noise signal~~ second noise component to attenuate at least some of the portion of the ~~first~~ vertically polarized noise.

6. The system of claim 1 wherein the first device is configured to ~~adaptively cancelling first noise from the noisy signal based on the vertically polarized signal comprises attenuating~~ attenuate at least some of the ~~first~~ vertically polarized noise based at least partially on the first noise ~~signal~~ component.

7. The system of claim 1 wherein one or more of the ~~first and second~~ vertically polarized noise and the horizontally polarized noise ~~is caused by~~ results from cross polarization interference.

~~8. The system of claim 1 wherein the first noise signal based on the horizontally polarized signal and the second noise signal based on the vertically polarized signal comprises the first noise signal being based on the first clean signal and the second noise signal being based on the second clean signal.~~

~~9~~8. The system of claim 1 further comprising a combiner coupled to the first device, the combiner configured to ~~receive the first clean signal from the first device and the second clean signal from the second device and to~~ generate a combined signal based on the first adaptively canceled signal and the second adaptively canceled ~~clean~~ signal~~s~~.

~~10~~9. The system of claim 1 further comprising an orthogonal transducer coupled to an antenna, to the first device, and to the second device, the orthogonal transducer configured to: receive the vertically polarized signal and the horizontally polarized signal ~~from the antenna~~, ~~to~~ provide ~~the noisy signal based on~~ the vertically polarized signal to the first device, and ~~to~~ provide ~~the noisy signal based on~~ the horizontally polarized signal to the second device.

~~11~~10. The system of claim ~~10~~ 9 further comprising a waveguide filter configured to filter the vertically polarized signal and the horizontally polarized signal from the antenna and provide the filtered vertically polarized signal and the filtered horizontally polarized signal to the orthogonal transducer.

~~12~~11. A method comprising:

receiving, by a first device, ~~a noisy signal based on~~ a vertically polarized signal;

receiving, by the first device, a first noise ~~signal~~ component ~~based on~~ generated from a horizontally polarized signal, the first device receiving the first noise component through a single cable;

providing a first adaptive~~ly~~ cancell~~in~~gation, by the first device, of a portion of ~~first~~ vertically polarized noise from ~~the noisy signal based on~~ the vertically polarized signal, the adaptive cancellation being based on the first noise ~~signal~~ component, and the first adaptive cancellation generating ~~to generate~~ a first ~~clean~~ adaptively canceled signal;

receiving, by ~~the~~ a second device, a ~~noisy signal based on~~ second noise component generated from the vertically polarized signal, the second device receiving the second noise component through the single cable;

receiving, by the second device, ~~a second noisy signal based on~~ the horizontally polarized signal;

providing a second adaptive~~ly~~ cancell~~in~~gation, by the second device, ~~second noise from the noisy signal based on~~ of a portion of the horizontally polarized signal, the second adaptive cancellation being based on the second noise ~~signal~~ component, and the second adaptive cancellation generating ~~to generate~~ a second ~~clean~~ adaptively canceled signal~~;~~.

~~receiving, by a first power splitter, the first noise signal from a single cable;~~

~~providing, by the first power splitter, the first noise signal to the first device;~~

~~receiving, by the first power splitter, the second noise signal from the first device;~~

~~providing, by the first power splitter, the second noise signal to the single cable;~~

~~receiving, by a second power splitter, the second noise signal from a single cable;~~

providing, by the second power splitter, the second noise signal to the second device;

receiving, by the second power splitter, the first noise signal from the second device; and

providing, by the second power splitter, the first noise signal to the single cable.

1312. The method of claim 12 11 wherein further comprising providing, using a the first power splitter, provides the first noise signal component to the first device over a first port, and the first power splitter receives receiving, using the first power splitter, the second noise signal component from the first device over a second port, the first port of the first power splitter being at least partially isolated from the second port.

1413. The method of claim 12 wherein the first and second power splitters are comprises a reactive power splitters.

1514. The method of claim 12 11 wherein one or more of the first device and the second devices are comprises a receivers.

1615. The method of claim 12 11 wherein adaptively cancelling first noise from the noisy vertically polarized signal the first adaptive cancellation comprises equalizing the noisy vertically polarized signal noise based at least partially on the first noise signal the second noise component to attenuate at least some of the portion of the first vertically polarized noise.

1716. The method of claim 12 11 wherein the first device is configured to adaptively cancelling first noise from the noisy signal based on the vertically polarized signal comprises attenuating attenuate at least some of the first vertically polarized noise based at least partially on the first noise signal component.

1817. The method of claim 12 11 wherein one or more of the first and second vertically polarized noise and the horizontally polarized noise is caused by results from cross polarization interference.

19. The method of claim 12 wherein the first noise signal based on the noisy horizontally polarized signal and the second noise signal based on the noisy vertically polarized signal comprises the first noise signal being based on the first clean signal and the second clean signal.

2018. The method of claim 12 11 further comprising:

~~combining the first clean signal from the first device and the second clean signal from the second device; and~~

~~generating~~ a combined signal based on the first adaptively canceled signal and the second adaptively canceled ~~clean~~ signal~~s~~.

~~21~~19. The method of claim ~~12~~ 11 further comprising:

receiving, by an orthogonal transducer, the vertically polarized signal and the horizontally polarized signal ~~from the antenna~~;

providing ~~the noisy signal based on~~ the vertically polarized signal to the first device; and

providing ~~the noisy signal based on~~ the horizontally polarized signal to the second device.

~~22~~20. The method of claim ~~21~~ 19 further comprising:

filtering, by a waveguide filter, the vertically polarized signal and the horizontally polarized signal from the antenna; and

providing the filtered vertically polarized signal and the filtered horizontally polarized signal to the orthogonal transducer.

~~23~~21. A system comprising:

a first ~~device~~ transceiver means configured to ~~process a noisy signal based on~~ receive a vertically polarized signal ~~from an antenna, to receive~~ and a first noise ~~signal~~ component ~~based on~~ generated from a horizontally polarized signal, and to provide a first adaptive~~ly~~ cancellation of a portion of ~~first~~ vertically polarized noise ~~from~~ in the vertically polarized signal ~~based on the noisy vertically polarized signal~~, the first adaptive cancellation being based on the first noise ~~signal~~ component, and the first adaptive cancellation generating ~~to generate~~ a first ~~clean~~ adaptively canceled signal;

a second ~~device~~ transceiver means configured to ~~process a noisy signal based on~~ receive the horizontally polarized signal ~~from the antenna, to receive~~ and a second noise ~~signal~~ component ~~based on~~ generated from the vertically polarized signal, and to generate a second adaptive~~ly~~ cancellation of a portion of ~~second~~ horizontally polarized noise ~~from~~ in the horizontally polarized signal ~~based on the noisy horizontally polarized signal~~, the second adaptive cancellation being based on the second noise ~~signal~~ component, and the second adaptive cancellation generating ~~to generate~~ a second ~~clean~~ adaptively canceled signal;

a single cable coupled to the first transceiver means and to the second transceiver means, the single cable adapted to facilitate transmission of the second noise component from the second transceiver means to the first transceiver means, and adapted to facilitate transmission of the first noise component from the first transceiver means to the second transceiver means;.

~~a first means for receiving the first noise signal from the single cable, providing the first noise signal to the first device, receiving the second noise signal from the first device, and providing the second noise signal to the single cable; and~~

~~a second means for receiving the second noise signal from the single cable, providing the second noise signal to the second device, and providing the first noise signal from the second device to the single cable.~~