



Closed Loop Radio Interference Cancelation

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OTHER INFORMATION

KEYWORDS

Full Duplex, Self Interference
Cancellation, analog, digital,
telecommunications

CATEGORIZED AS

- ▶ **Communications**
 - ▶ Internet
 - ▶ Networking
 - ▶ Other
 - ▶ Wireless

RELATED CASES

2013-666-0, 2011-465-0, 2011-466-0,
2013-901-0

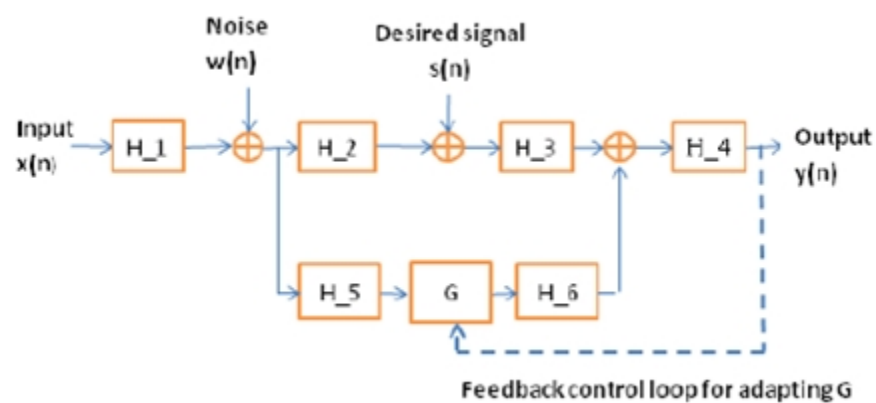
PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,621,221	04/11/2017	2013-666

BRIEF DESCRIPTION

A key challenge in utilizing full-duplex radio is self-interference cancellation (SIC). One component of SIC, transmission noise, severely limits full-duplex as no digital or hybrid methods has any built in mechanism to deal with transmission noise.

General Diagram



FULL DESCRIPTION

University of California researchers have developed a closed-loop, digitally controlled and analog interfaced method for cancelling interferences from a set of RF transmit chains to a set of RF receive chains. This novel analog-digital method is no longer limited by transmission noise. The invention can be used to recover a weak signal in the presence of a stronger signal. This method can be used in parallel or in serial for better combined effect. The final structure of the system is such that all interference and major noise sources have a zero or minimum net contribution to the received digital signals.

ADVANTAGES

- Adapts to any condition of the noise which is part of the signal driving the adaptive digital filter.
- Versatile method that can be applied to in various forms.
- Reduce interference at various stages in the receive chain.
- Maximum possible signal-to-noise ratio.

RELATED MATERIALS

- ▶ [Breaking the Barrier of Transmission Noise in Full-Duplex Radio](#) - 11/30/2013

RELATED TECHNOLOGIES

- ▶ [All-Analog Radio Interference Cancellation using CAPS Method](#)
- ▶ [Novel Solutions to Wireless Network Efficiency](#)

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