

Title (en)

TRANSMITTER PREDISTORTION CIRCUIT AND METHOD THEREFOR

Title (de)

SENDER-VORVERZERRUNGSSCHALTUNG UND VERFAHREN DAFÜR

Title (fr)

CIRCUIT DE DISTORSION PREALABLE POUR EMETTEUR ET PROCEDE CORRESPONDANT

Publication

EP 1709729 A1 20061011 (EN)

Application

EP 05711985 A 20050124

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- US 2005002316 W 20050124
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- US 76676804 A 20040127
- US 76680104 A 20040127
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- US 1242704 A 20041214

Abstract (en)

[origin: TW200541280A] A digital communications transmitter (100) includes a digital linear-and-nonlinear predistortion section (200, 1800, 2800) to compensate for linear and nonlinear distortion introduced by transmitter-analog components (120). A direct-digital-downconversion section (300) generates a complex digital return-data stream (254) from the analog components (120) without introducing quadrature imbalance. A relatively low resolution exhibited by the return-data stream (254) is effectively increased through arithmetic processing. Distortion introduced by an analog-to-digital converter (304) may be compensated using a variety of adaptive techniques. Linear distortion is compensated using adaptive techniques with an equalizer (246) positioned in the forward-data stream (112). Nonlinear distortion is then compensated using adaptive techniques with a plurality of equalizers (226) that filter a plurality of orthogonal, higher-ordered-basis functions (214) generated from the forward-data stream (112). The filtered-basis functions are combined together and subtracted from the forward-data stream (112).

IPC 8 full level

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