



- (51) International Patent Classification:
G06F 17/10 (2006.01)
- (21) International Application Number:
PCT/US2013/044313
- (22) International Filing Date:
5 June 2013 (05.06.2013)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/655,835 5 June 2012 (05.06.2012) US
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

- (88) Date of publication of the international search report:
30 January 2014

(54) Title: RECONFIGURABLE VARIABLE LENGTH FIR FILTERS FOR OPTIMIZING PERFORMANCE OF DIGITAL REPEATER

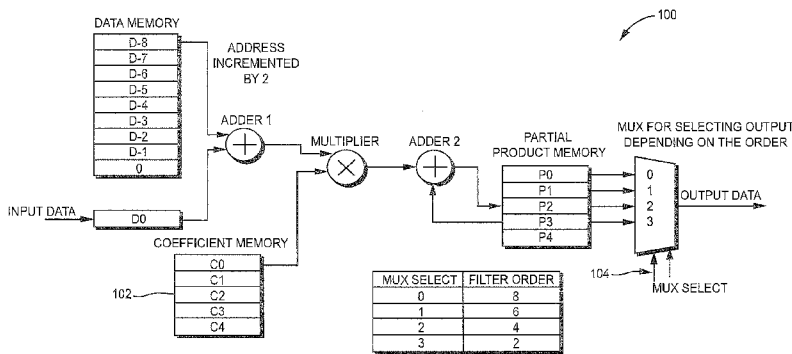


FIG. 6

(57) Abstract: The invention addresses the problem of parameter optimization for best filter performance and, in particular, the influence from the requirements on radio or fiber to radio repeaters utilizing those filters, that often proves to be conflicting for an FIR filter. The FIR filters are implemented in a programmable circuit and are not thereby restricted for use in communication repeaters although this particular usage may put the most serious restrictions on the filter performance. Within the imposed constraints, this disclosure illustrates a method to strike a middle ground while minimizing the trade-offs. The advantage of the concept presented allows the choice of a suitable filter pertaining to a particular traffic configuration, meaning a particular choice of individually filtered frequency bands set at different gain and intended to support a diversity of traffic formats. The disclosed approach banks on the reconfigurable variable length FIR filter architectures. Implementation architecture and results in brief are also presented.

WO 2013/184801 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US13/44313

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(8) - G06F 17/10 (2013.01)
 USPC - 708/320
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 IPC(8) Classification(s): G06F 17/10, 17/38 (2013.01)
 USPC Classification(s): 708/320, 300, 316, 523

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 MicroPatent (US-G, US-A, EP-A, EP-B, WO, JP-bib, DE-C,B, DE-A, DE-T, DE-U, GB-A, FR-A); ProQuest; IEEE/IEEExplore;
 Google/Google Scholar; IP.com; Search Terms Used: finite impulse response, FIR, filter, coefficient, memory, flash, store, reconfigure,
 configure, modify, adjust, adder, multiplier, multiplex, repeater

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0078403 A1 (SCHEUERMANN, W., et al.) April 22, 2004; figure 10; paragraphs [0009], [0084], [0085], [0088], [0167]	1, 5, 6, 7
Y		2-4, 8, 9
Y	US 2005/0283508 A1 (HENNEDY, M.) December 22, 2005; paragraphs [0049], [0055], [0060]	2-4
Y	US 6891482 B2 (CRAVEN, P., et al.) May 10, 2005; column 28, lines 32-35; column 28, lines 43-44	8
Y	WO 2010/003526 A1 (BRAZ, O., et al.) January 14, 2010; abstract	9

Further documents are listed in the continuation of Box C.

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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 03 December 2013 (03.12.2013)	Date of mailing of the international search report 13 DEC 2013
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