

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4981959

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	RELEASE OF SECURITY INTEREST
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
MORGAN STANLEY SENIOR FUNDING, INC.	05/29/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	MICROSEMI CORPORATION
<b>Street Address:</b>	ONE ENTERPRISE
<b>City:</b>	ALISO VIEJO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	92656
<b>Name:</b>	MICROSEMI SEMICONDUCTOR (U.S.), INC.
<b>Street Address:</b>	ONE ENTERPRISE
<b>City:</b>	ALISO VIEJO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	92656
<b>Name:</b>	MICROSEMI FREQUENCY AND TIME CORPORATION
<b>Street Address:</b>	ONE ENTERPRISE
<b>City:</b>	ALISO VIEJO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	92656
<b>Name:</b>	MICROSEMI COMMUNICATIONS, INC.
<b>Street Address:</b>	ONE ENTERPRISE
<b>City:</b>	ALISO VIEJO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	92656
<b>Name:</b>	MICROSEMI SOC CORP.
<b>Street Address:</b>	ONE ENTERPRISE
<b>City:</b>	ALISO VIEJO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	92656
<b>Name:</b>	MICROSEMI CORP. - POWER PRODUCTS GROUP
<b>Street Address:</b>	ONE ENTERPRISE
<b>City:</b>	ALISO VIEJO

PATENT

<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	92656
<b>Name:</b>	MICROSEMI CORP. - RF INTEGRATED SOLUTIONS
<b>Street Address:</b>	ONE ENTERPRISE
<b>City:</b>	ALISO VIEJO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	92656

**PROPERTY NUMBERS Total: 819**

<b>Property Type</b>	<b>Number</b>
Patent Number:	8446170
Patent Number:	5986322
Patent Number:	5744980
Patent Number:	5959466
Patent Number:	6150837
Patent Number:	6237124
Patent Number:	5821776
Patent Number:	5920109
Patent Number:	6038627
Patent Number:	6049487
Patent Number:	5936426
Patent Number:	5909049
Patent Number:	6285212
Patent Number:	6549035
Patent Number:	6794897
Patent Number:	6718477
Patent Number:	6976185
Patent Number:	7484113
Patent Number:	7941685
Patent Number:	6898777
Patent Number:	7557611
Patent Number:	6934927
Patent Number:	7279930
Patent Number:	6094350
Patent Number:	5849630
Patent Number:	6034570
Patent Number:	6078194
Patent Number:	6084478
Patent Number:	6115416

Property Type	Number
Patent Number:	6633605
Patent Number:	6204733
Patent Number:	6218905
Patent Number:	6223242
Patent Number:	6229344
Patent Number:	6229367
Patent Number:	6232844
Patent Number:	6263034
Patent Number:	6377575
Patent Number:	6801518
Patent Number:	6700886
Patent Number:	6473813
Patent Number:	6545567
Patent Number:	6559682
Patent Number:	6566904
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Patent Number:	6925218
Patent Number:	6633191
Patent Number:	6683896
Patent Number:	6694476
Patent Number:	6713749
Patent Number:	6738173
Patent Number:	6738922
Patent Number:	6810499
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Patent Number:	6844952
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Patent Number:	6873029
Patent Number:	6904061
Patent Number:	6933793
Patent Number:	6946948
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Patent Number:	6948109
Patent Number:	6967471
Patent Number:	6990162
Patent Number:	6998292
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Patent Number:	7123678

Property Type	Number
Patent Number:	7132849
Patent Number:	7142596
Patent Number:	7161901
Patent Number:	7164677
Patent Number:	7227878
Patent Number:	7230923
Patent Number:	7231008
Patent Number:	7301997
Patent Number:	7738547
Patent Number:	7003228
Patent Number:	7158567
Patent Number:	7305190
Patent Number:	7331816
Patent Number:	7342889
Patent Number:	7471751
Patent Number:	7486686
Patent Number:	7516897
Patent Number:	7545817
Patent Number:	7636352
Patent Number:	7657191
Patent Number:	7821290
Patent Number:	7839707
Patent Number:	7924910
Patent Number:	8774262
Patent Number:	8009569
Patent Number:	8179901
Patent Number:	8276047
Patent Number:	8887021
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Patent Number:	8284888
Patent Number:	8804892
Patent Number:	8363670
Patent Number:	8416902
Patent Number:	8571014
Patent Number:	8644350
Patent Number:	8681772
Patent Number:	8705603
Patent Number:	8798223

<b>Property Type</b>	<b>Number</b>
Patent Number:	8837467
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Patent Number:	8873588
Patent Number:	8923341
Patent Number:	8971352
Patent Number:	9014195
Patent Number:	9042366
Patent Number:	9094375
Patent Number:	9106388
Patent Number:	9040377
Patent Number:	6503786
Patent Number:	6939743
Patent Number:	6664594
Patent Number:	5929523
Patent Number:	6150246
Patent Number:	6388272
Patent Number:	6982440
Patent Number:	7508000
Patent Number:	7498651
Patent Number:	7569927
Patent Number:	7342262
Patent Number:	7579252
Patent Number:	7671410
Patent Number:	8110888
Patent Number:	7851881
Patent Number:	7956455
Patent Number:	8410601
Patent Number:	8034666
Patent Number:	8519410
Patent Number:	8476691
Patent Number:	8674439
Patent Number:	8436367
Patent Number:	8841718
Patent Number:	6842318
Patent Number:	6800916
Patent Number:	6853047
Patent Number:	7009831
Patent Number:	7164568

<b>Property Type</b>	<b>Number</b>
Patent Number:	7084486
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Patent Number:	7741706
Patent Number:	8058719
Patent Number:	7435993
Patent Number:	8269409
Patent Number:	9212992
Patent Number:	8094458
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Patent Number:	8102167
Patent Number:	8558518
Patent Number:	8345779
Patent Number:	8599937
Patent Number:	7782115
Patent Number:	7911255
Patent Number:	8143748
Patent Number:	8253400
Patent Number:	8253395
Patent Number:	8843331
Patent Number:	8456196
Patent Number:	8436662
Patent Number:	8675374
Patent Number:	8451626
Patent Number:	D634229
Patent Number:	8547274
Patent Number:	D618269
Patent Number:	8437566
Patent Number:	8712093
Patent Number:	7873182
Patent Number:	7601958
Patent Number:	D571244
Patent Number:	7781717
Patent Number:	8306272
Patent Number:	7858938
Patent Number:	8355538
Patent Number:	D662221
Patent Number:	D678792
Patent Number:	D663634

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<b>Patent Number:</b>	8456238
<b>Patent Number:</b>	6759907
<b>Patent Number:</b>	6788148
<b>Patent Number:</b>	6680991
<b>Patent Number:</b>	7915981
<b>Patent Number:</b>	7750764
<b>Patent Number:</b>	7804362
<b>Patent Number:</b>	8520390
<b>Patent Number:</b>	8274164
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<b>Patent Number:</b>	8018042
<b>Patent Number:</b>	8587107
<b>Patent Number:</b>	8237171
<b>Patent Number:</b>	9153516
<b>Patent Number:</b>	9128494
<b>Patent Number:</b>	7449841
<b>Patent Number:</b>	7852019
<b>Patent Number:</b>	8909312
<b>Patent Number:</b>	7573329
<b>Patent Number:</b>	7924092
<b>Patent Number:</b>	8368481
<b>Patent Number:</b>	8670726
<b>Patent Number:</b>	8947164
<b>Patent Number:</b>	9136802
<b>Patent Number:</b>	9154090
<b>Patent Number:</b>	9118281
<b>Patent Number:</b>	7208046
<b>Patent Number:</b>	8210120
<b>Patent Number:</b>	7524537
<b>Patent Number:</b>	7723162
<b>Patent Number:</b>	7718471
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<b>Patent Number:</b>	8064484
<b>Patent Number:</b>	8451867
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<b>Patent Number:</b>	7636022
<b>Patent Number:</b>	7894489

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Patent Number:	7876788
Patent Number:	7535931
Patent Number:	6370629
Patent Number:	6393126
Patent Number:	7535900
Patent Number:	6125125
Patent Number:	5751777
Patent Number:	5943381
Patent Number:	6166608
Patent Number:	7660332
Patent Number:	7382845
Patent Number:	6876242
Patent Number:	6943609
Patent Number:	6512803
Patent Number:	6842498
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Patent Number:	8107502
Patent Number:	8385212
Patent Number:	8274999
Patent Number:	8427963
Patent Number:	8594134
Patent Number:	8644348
Patent Number:	8600239
Patent Number:	9160473
Patent Number:	6215366
Patent Number:	6222424
Patent Number:	6255647
Patent Number:	6265945
Patent Number:	6320472
Patent Number:	7003438
Patent Number:	7778293
Patent Number:	9155062
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Patent Number:	6005901
Patent Number:	5963159
Patent Number:	6058161



<b>Property Type</b>	<b>Number</b>
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<b>Patent Number:</b>	6373912
<b>Patent Number:</b>	6269086
<b>Patent Number:</b>	6226356
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<b>Patent Number:</b>	6337877
<b>Patent Number:</b>	6219377
<b>Patent Number:</b>	6728370
<b>Patent Number:</b>	6144840
<b>Patent Number:</b>	6311079
<b>Patent Number:</b>	6046977
<b>Patent Number:</b>	6535550
<b>Patent Number:</b>	6519280
<b>Patent Number:</b>	6498807
<b>Patent Number:</b>	6501791
<b>Patent Number:</b>	6826155
<b>Patent Number:</b>	7605010
<b>Patent Number:</b>	6611564
<b>Patent Number:</b>	6424674
<b>Patent Number:</b>	7042923
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<b>Patent Number:</b>	6714589
<b>Patent Number:</b>	6865269
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<b>Patent Number:</b>	6778663
<b>Patent Number:</b>	6400195
<b>Patent Number:</b>	6661891
<b>Patent Number:</b>	7239695
<b>Patent Number:</b>	7190784
<b>Patent Number:</b>	7594026
<b>Patent Number:</b>	7996557

Property Type	Number
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Patent Number:	6930751
Patent Number:	7715162
Patent Number:	8035196
Patent Number:	8269265
Patent Number:	7254229
Patent Number:	7113590
Patent Number:	7260210
Patent Number:	7181002
Patent Number:	7453896
Patent Number:	6917207
Patent Number:	7047328
Patent Number:	7907381
Patent Number:	8090095
Patent Number:	8004122
Patent Number:	7821016
Patent Number:	8012775
Patent Number:	8160240
Patent Number:	6122313
Patent Number:	6047073
Patent Number:	5986290
Patent Number:	5991725
Patent Number:	5729483
Patent Number:	5751615
Patent Number:	5852661
Patent Number:	5640451
Patent Number:	5917734
Patent Number:	5900739
Patent Number:	5805021
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Patent Number:	5694466
Patent Number:	5809133
Patent Number:	5644634
Patent Number:	5588053
Patent Number:	6008856
Patent Number:	6108390
Patent Number:	5732251
Patent Number:	5815505

<b>Property Type</b>	<b>Number</b>
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Patent Number:	6125139
Patent Number:	6118384
Patent Number:	6307480
Patent Number:	5978688
Patent Number:	5732004
Patent Number:	6295011
Patent Number:	5878133
Patent Number:	5900749
Patent Number:	5796815
Patent Number:	6373925
Patent Number:	5887059
Patent Number:	5861774
Patent Number:	6075831
Patent Number:	5841385
Patent Number:	5838269
Patent Number:	6269160
Patent Number:	5809342
Patent Number:	5717154
Patent Number:	5689080
Patent Number:	5731760
Patent Number:	5790658
Patent Number:	5901225
Patent Number:	5982815
Patent Number:	5790817
Patent Number:	6011781
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Patent Number:	6374375
Patent Number:	5893028
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Patent Number:	6324504
Patent Number:	5818293
Patent Number:	6219824

<b>Property Type</b>	<b>Number</b>
Patent Number:	6285975
Patent Number:	5987010
Patent Number:	5872993
Patent Number:	7024357
Patent Number:	6404824
Patent Number:	6370555
Patent Number:	6385303
Patent Number:	6246756
Patent Number:	6012136
Patent Number:	6029239
Patent Number:	6372595
Patent Number:	5768700
Patent Number:	5629641
Patent Number:	5805031
Patent Number:	5942937
Patent Number:	6031473
Patent Number:	6192069
Patent Number:	5818378
Patent Number:	5969646
Patent Number:	6434188
Patent Number:	6339599
Patent Number:	6456602
Patent Number:	6449262
Patent Number:	6577598
Patent Number:	6651078
Patent Number:	6657496
Patent Number:	6842518
Patent Number:	6940969
Patent Number:	6925178
Patent Number:	5881129
Patent Number:	5854839
Patent Number:	6169425
Patent Number:	6333664
Patent Number:	8259908
Patent Number:	8379839
Patent Number:	8363822
Patent Number:	8325908
Patent Number:	8442213

<b>Property Type</b>	<b>Number</b>
<b>Patent Number:</b>	8406417
<b>Patent Number:</b>	8406414
<b>Patent Number:</b>	8705728
<b>Patent Number:</b>	9000807
<b>Patent Number:</b>	9103880
<b>Patent Number:</b>	7389487
<b>Patent Number:</b>	8990757
<b>Patent Number:</b>	8803548
<b>Patent Number:</b>	8868820
<b>Patent Number:</b>	8570819
<b>Patent Number:</b>	9159428
<b>Patent Number:</b>	9093517
<b>Patent Number:</b>	9147025
<b>Patent Number:</b>	9106232
<b>Patent Number:</b>	7027455
<b>Patent Number:</b>	7579868
<b>Patent Number:</b>	6268743
<b>Patent Number:</b>	6791353
<b>Patent Number:</b>	7382155
<b>Patent Number:</b>	7755386
<b>Patent Number:</b>	7977970
<b>Patent Number:</b>	8258811
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<b>Patent Number:</b>	6430088
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<b>Patent Number:</b>	7069419
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<b>Patent Number:</b>	7886130
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<b>Patent Number:</b>	7126842
<b>Patent Number:</b>	7672153
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<b>Patent Number:</b>	7288957
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<b>Property Type</b>	<b>Number</b>
Patent Number:	6356478
Patent Number:	6767769
Patent Number:	6809398
Patent Number:	6560743
Patent Number:	6772387
Patent Number:	7543216
Patent Number:	6731133
Patent Number:	6700404
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Patent Number:	6744278
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Patent Number:	7774665
Patent Number:	6825690
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Patent Number:	6885218
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Patent Number:	6891396
Patent Number:	7579869
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Patent Number:	6774667
Patent Number:	6867615
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Patent Number:	6891394
Patent Number:	7119573
Patent Number:	7545166
Patent Number:	6727726
Patent Number:	6765427

<b>Property Type</b>	<b>Number</b>
Patent Number:	6838902
Patent Number:	6980027
Patent Number:	7394289
Patent Number:	7310760
Patent Number:	7673194
Patent Number:	7426667
Patent Number:	6774672
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Patent Number:	6891769
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Patent Number:	6841846
Patent Number:	6853055
Patent Number:	6946726

Property Type	Number
Patent Number:	7170315
Patent Number:	7937601
Patent Number:	7613943
Patent Number:	7487376
Patent Number:	7034569
Patent Number:	7365565
Patent Number:	7603578
Patent Number:	7859302
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Patent Number:	7560954
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Patent Number:	7400185
Patent Number:	7538598
Patent Number:	7268585
Patent Number:	7634753
Patent Number:	7919979
Patent Number:	7352206
Patent Number:	7560952
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Patent Number:	7298178
Patent Number:	7501872
Patent Number:	7579895
Patent Number:	7129746
Patent Number:	7423451
Patent Number:	7616026
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Patent Number:	7521960
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Patent Number:	7112993
Patent Number:	7414428
Patent Number:	7099189



Property Type	Number
Patent Number:	7408815
Patent Number:	7558112
Patent Number:	7362610
Patent Number:	7623390
Patent Number:	7212030
Patent Number:	7394286
Patent Number:	7161841
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Patent Number:	7495473
Patent Number:	7492182
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Patent Number:	7414427
Patent Number:	7119398
Patent Number:	7911226
Patent Number:	7116181
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Patent Number:	7358601
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Property Type	Number
Patent Number:	7554860
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Patent Number:	7538379
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Patent Number:	7473960
Patent Number:	7573093
Patent Number:	7915665
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Patent Number:	7616508
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Patent Number:	7616025
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Patent Number:	7924051
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Patent Number:	7839681

<b>Property Type</b>	<b>Number</b>
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<b>Patent Number:</b>	9170774
<b>Patent Number:</b>	7924053
<b>Patent Number:</b>	7924052
<b>Patent Number:</b>	7816946
<b>Patent Number:</b>	7932745
<b>Patent Number:</b>	7659841
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<b>Patent Number:</b>	7929345
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<b>Patent Number:</b>	8191021
<b>Patent Number:</b>	8269203
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<b>Patent Number:</b>	8723151
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<b>Patent Number:</b>	7009422
<b>Patent Number:</b>	5894148
<b>Patent Number:</b>	5773862
<b>Patent Number:</b>	5761120
<b>Patent Number:</b>	6252273
<b>Patent Number:</b>	5838040
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<b>Patent Number:</b>	6137728
<b>Patent Number:</b>	6125059
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<b>Patent Number:</b>	8063516
<b>Patent Number:</b>	8350488

Property Type	Number
Patent Number:	8169252
Patent Number:	8263927
Patent Number:	8378586
Patent Number:	8363436
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Patent Number:	8482218
Patent Number:	8461764
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Patent Number:	8988056
Patent Number:	8754581
Patent Number:	8598795
Patent Number:	8842397
Patent Number:	8704596
Patent Number:	8941456
Patent Number:	8907568
Patent Number:	8755449
Patent Number:	5930121
Patent Number:	5923129
Patent Number:	5757173
Patent Number:	5982231
Patent Number:	6229388
Patent Number:	5943203
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Patent Number:	6198234
Patent Number:	6292378
Patent Number:	6946806
Patent Number:	6812776
Patent Number:	6556067
Patent Number:	6897709
Patent Number:	6876157
Patent Number:	6979959

<b>Property Type</b>	<b>Number</b>
Patent Number:	6870330
Patent Number:	6803825
Patent Number:	6965219
Patent Number:	7528582
Patent Number:	7759907
Patent Number:	8193779
Patent Number:	7102340
Patent Number:	6969958
Patent Number:	7038288
Patent Number:	7479401
Patent Number:	7005835
Patent Number:	6836103
Patent Number:	7242147
Patent Number:	7525255
Patent Number:	7183727
Patent Number:	7391172
Patent Number:	7525291
Patent Number:	7759906
Patent Number:	7102339
Patent Number:	7557517
Patent Number:	7468722
Patent Number:	8223117
Patent Number:	7112929
Patent Number:	7646152
Patent Number:	7755595
Patent Number:	7294971
Patent Number:	7560875
Patent Number:	7932683
Patent Number:	8222836
Patent Number:	7239087
Patent Number:	7061183
Patent Number:	7569998
Patent Number:	8358082
Patent Number:	7868603
Patent Number:	7906943
Patent Number:	8760894
Application Number:	62149855
Application Number:	13964692

<b>Property Type</b>	<b>Number</b>
Application Number:	13898827
Application Number:	14155752
Application Number:	14703710
Application Number:	13037058
Application Number:	14208513
Application Number:	14193772
Application Number:	14790248
Application Number:	14212508
Application Number:	14485833
Application Number:	14547336
Application Number:	14630901
Application Number:	14632860
Application Number:	14703720
Application Number:	14790982
Application Number:	14322953
Application Number:	14941991
Application Number:	14747758
Application Number:	14950114
Application Number:	62093697
Application Number:	62132333
Application Number:	14835928
Application Number:	13671480
Application Number:	14040320
Application Number:	13471195
Application Number:	14171698
Application Number:	14160449
Application Number:	14494438
Application Number:	14503082
Application Number:	14502877
Application Number:	62195271
Application Number:	14153948
Application Number:	14337865
Application Number:	14622309
Application Number:	14936716
Application Number:	14446115
Application Number:	14454134
Application Number:	14691132
Application Number:	14697836

Property Type	Number
Application Number:	62254490
Application Number:	14482595
Application Number:	14482527
Application Number:	11789455
Application Number:	14508655
Application Number:	14557729
Application Number:	62195776
Application Number:	13860875
Application Number:	62202902
Application Number:	62202905
Application Number:	62095163
Application Number:	14149370
Application Number:	14505688
Application Number:	62190282
Application Number:	62232480
Application Number:	62232489
Application Number:	14527795
Application Number:	14608242
Application Number:	14171843
Application Number:	14493411
Application Number:	14559135
Application Number:	14666326
Application Number:	62137377
Application Number:	14710611
Application Number:	14210913
Application Number:	14542844
Application Number:	14250059
Application Number:	14582147
Application Number:	14721920
Application Number:	62174299

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**ATTORNEY DOCKET NUMBER:** 35613/102

**NAME OF SUBMITTER:** BENJAMIN PETERSEN

**SIGNATURE:** /BENJAMIN PETERSEN/

**DATE SIGNED:** 05/29/2018

**Total Attachments: 73**

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**PATENT SECURITY AGREEMENT RELEASE**

THIS PATENT SECURITY AGREEMENT RELEASE (this “**Release**”) is made effective as of May 29, 2018, by Morgan Stanley Senior Funding, Inc. (“**Morgan Stanley**”), as collateral agent (in such capacity, the “**Collateral Agent**”) for the Secured Parties (as defined in the Guarantee and Collateral Agreement referred to below), in favor of Microsemi Corporation, Microsemi Semiconductor (U.S.), Inc., Microsemi Frequency and Time Corporation, Microsemi Communications, Inc., Microsemi SOC Corp., Microsemi Corp. – Power Products Group, and Microsemi Corp. – RF Integrated Solutions (collectively, the “**Grantors**”).

WHEREAS, the Grantors were party to that certain Guarantee and Collateral Agreement dated as of January 15, 2016 (the “**Guarantee and Collateral Agreement**”) in favor of the Collateral Agent and Morgan Stanley, as administrative agent (capitalized terms used but not otherwise defined herein shall have the meanings given to them in the Guarantee and Collateral Agreement);

WHEREAS, pursuant to the terms of the Guarantee and Collateral Agreement, the Grantors entered into that certain Patent Security Agreement, dated as of January 15, 2016 (the “**Patent Security Agreement**”);

WHEREAS, the Patent Security Agreement was recorded with the United States Patent and Trademark Office on February 3, 2016 at Reel 037691 and Frame 0697; and

WHEREAS, in accordance with the provisions of the Guarantee and Collateral Agreement and the Patent Security Agreement, the Collateral Agent now desires to release its security interest in and to the Collateral (as defined below).

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Collateral Agent hereby agrees as follows:

SECTION 1. Release of Grant of Security. The Collateral Agent hereby releases to the Grantors its security interest in all of the Grantors’ right, title and interest in and to the following (the “**Collateral**”):

- (i) all Patents of such Grantor, including, without limitation, the registered and applied-for Patents of such Grantor listed on Schedule 1 attached hereto; and
- (ii) to the extent not covered by clause (i), all Proceeds of any of the foregoing.

If and to the extent that the Collateral Agent has acquired any right, title or interest in and to the Collateral under the Patent Security Agreement, the Collateral Agent, without representation or warranty of any kind, hereby re-transfers, re-conveys and re-assigns such right, title or interest to the Grantors.

SECTION 2. Recordation. The Collateral Agent authorizes and requests that the Commissioner for Patents and any other applicable government officer record this Release.

SECTION 3. Governing Law. This Release shall be governed by, and construed in accordance with, the laws of the State of New York.

*[Signature Page Follows]*

IN WITNESS WHEREOF, the Collateral Agent has caused this Release to be executed by its duly authorized officer.

MORGAN STANLEY SENIOR FUNDING, INC.,  
as Collateral Agent

By:  .....

Name: Lisa Hanson

Title: Authorized Signatory

## PATENTS

## Issued Patents

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
PPGA RAM BLOCKS OPTIMIZED FOR USE AS REGISTER FILES	US	Issued	May 3, 2012	13463232	May 21, 2013	8446170	Microsemi SoC Corp.
REDUCED LEAKAGE ANTIFUSE STRUCTURE AND FABRICATION METHOD	US	Issued	Jun 6, 1995	08472050	Nov 16, 1999	5986322	Microsemi SoC Corp.
FLEXIBLE HIGH-PERFORMANCE STATIC RAM ARCHITECTURE FOR FIELD-PROGRAMMABLE GATE ARRAYS	US	Issued	Feb 16, 1996	08603597	Apr 28, 1998	5744980	Microsemi SoC Corp.
FIELD PROGRAMMABLE GATE ARRAY WITH MASK PROGRAMMED INPUT AND OUTPUT BUFFERS	US	Issued	Jan 31, 1997	08792482	Sep 28, 1999	5959466	Microsemi SoC Corp.
ENHANCED FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Feb 28, 1997	08807455	Nov 21, 2000	6150837	Microsemi SoC Corp.
CYCLIC REDUNDANCY CHECKING OF A FIELD PROGRAMMABLE GATE ARRAY HAVING A SRAM MEMORY ARCHITECTURE	US	Issued	Mar 16, 1998	09039924	May 22, 2001	6237124	Microsemi SoC Corp.

<sup>1</sup> Advanced Power Technology Inc. is the former name of Microsemi Corp. - Power Products Group; AML Communications, Inc. merged into Microsemi Corp. - RF Integrated Solutions; Legerty, Inc.; Zarlink Semiconductor (v.N.) Inc.; Centellax, Inc.; and Zarlink Semiconductor (U.S.) Inc. are former names of Microsemi Semiconductor (U.S.) Inc.; Actel Corporation is the former name of Microsemi SoC Corp.; Vitesse Semiconductor Corporation is the former name of Microsemi Communications, Inc.; Symmetricom, Inc. is the former name of Microsemi Frequency and Time Corporation.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
FIELD PROGRAMMABLE GATE ARRAY WITH MASK PROGRAMMED ANALOG FUNCTION CIRCUITS	US	Issued	Jan 31, 1997	087922902	Oct 13, 1998	5821776	Microsemi SoC Corp.
RAISED TUNGSTEN PLUG ANTIFUSE AND FABRICATION PROCESSES	US	Issued	Dec 23, 1996	087722241	Jul 6, 1999	5920109	Microsemi SoC Corp.
SRAM BUS ARCHITECTURE AND INTERCONNECT TO AN FPGA	US	Issued	Mar 16, 1998	09039923	Mar 14, 2000	6038627	Microsemi SoC Corp.
EMBEDDED STATIC RANDOM ACCESS MEMORY FOR FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Mar 16, 1998	09039891	Apr 11, 2000	6049487	Microsemi SoC Corp.
LOGIC FUNCTION MODULE FOR FIELD PROGRAMMABLE ARRAY	US	Issued	Feb 3, 1997	08794096	Aug 10, 1999	5936426	Microsemi SoC Corp.
ANTIFUSE PROGRAMMED PROM CELL	US	Issued	Feb 11, 1997	08797202	Jun 1, 1999	5909049	Microsemi SoC Corp.
BLOCK CONNECTOR SPLITTING IN LOGIC BLOCK OF FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Mar 6, 2000	09518973	Sep 4, 2001	6285212	Microsemi SoC Corp.
HIGH DENSITY ANTIFUSE BASED PARTITIONED FPGA ARCHITECTURE	US	Issued	Sep 15, 1998	09153828	Apr 15, 2003	6549035	Microsemi SoC Corp.
HIGH DENSITY ANTIFUSE BASED PARTITIONED FPGA ARCHITECTURE	US	Issued	Apr 11, 2003	10411627	Sep 21, 2004	6794897	Microsemi SoC Corp.
DELAY LOCK LOOP FOR AN FPGA ARCHITECTURE	US	Issued	Mar 6, 2000	09519311	Apr 6, 2004	6718477	Microsemi SoC Corp.
DELAY LOCK LOOP FOR AN FPGA ARCHITECTURE	US	Issued	Nov 25, 2003	10722636	Dec 13, 2005	6976185	Microsemi SoC Corp.
DELAY LOCK LOOP FOR AN FPGA ARCHITECTURE	US	Issued	Nov 20, 2006	11561695	Jan 27, 2009	7484113	Microsemi SoC Corp.
DELAY LOCK LOOP FOR AN FPGA ARCHITECTURE	US	Issued	Dec 17, 2008	12337201	May 10, 2011	7941685	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
BLOCK LEVEL ROUTING ARCHITECTURE IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Nov 5, 2002	10288778	May 24, 2005	6898777	Microsemi SoC Corp.
BLOCK LEVEL ROUTING ARCHITECTURE IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Feb 20, 2008	12034555	Jul 7, 2009	7557611	Microsemi SoC Corp.
TURN ARCHITECTURE FOR ROUTING RESOURCES IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Apr 30, 2003	10429003	Aug 23, 2005	6934927	Microsemi SoC Corp.
TURN ARCHITECTURE FOR ROUTING RESOURCES IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Aug 12, 2005	11202686	Oct 9, 2007	7279930	Microsemi SoC Corp.
FeedForward Amplifier Manufacturing Method	US	Issued	Jun 4, 1999	09326426	Jul 25, 2000	6094350	AML Communications, Inc.
Process For Forming Ohmic Contact For III-V Semiconductor Devices	US	Issued	Apr 28, 1992	07877253	Dec 15, 1998	5849630	Microsemi Communications, Inc.
Gallium Arsenide Voltage-Controlled Oscillator and Oscillator Delay Cell	US	Issued	Jan 14, 1999	09231101	Mar 7, 2000	6034570	Microsemi Communications, Inc.
Logic Gates for Reducing Power Consumption of Gallium Arsenide Integrated Circuits	US	Issued	Nov 13, 1995	08558108	Jun 20, 2000	6078194	Microsemi Communications, Inc.
Transimpedance Amplifier With Automatic Gain Control	US	Issued	Feb 23, 1999	09236426	Jul 4, 2000	6084478	Microsemi Communications, Inc.
Pulse Code Sequence Analyzer	US	Issued	Nov 13, 1998	09191783	Sep 5, 2000	6115416	Microsemi Communications, Inc.
Pulse Code Sequence Analyzer	US	Issued	Jun 13, 2000	09593264	Oct 14, 2003	6633605	Microsemi Communications, Inc.
Multiple-Phase-Interpolation LC Voltage-Controlled Oscillator	US	Issued	Jul 31, 1999	09364974	Mar 20, 2001	6204733	Microsemi Communications, Inc.
Common-Gate Transimpedance Amplifier With Dynamically Controlled Input Impedance	US	Issued	Feb 8, 1999	09246268	Apr 17, 2001	6218905	Microsemi Communications, Inc.
Linearly Expandable Self-Routing Crossbar Switch	US	Issued	Sep 28, 1998	09161923	Apr 24, 2001	6223242	Microsemi Communications, Inc.
Phase Selection Circuit	US	Issued	Mar 9, 1999	09265725	May 8, 2001	6229344	Microsemi Communications, Inc.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
Method And Apparatus For Generating A Time Delayed Signal With A Minimum Data Dependency Error Using An Oscillator	US	Issued	Aug 2, 1999	09365189	May 8, 2001	6229367	Microsemi Communications, Inc.
Controlled Orthogonal Current Oscillator with Ranging	US	Issued	May 28, 1999	09322738	May 15, 2001	6232844	Microsemi Communications, Inc.
Circuit And Technique For Digital Reduction Of Jitter Transfer	US	Issued	Mar 25, 1998	09047888	Jul 17, 2001	6263034	Microsemi Communications, Inc.
High Speed Cross Point Switch Routing Circuit With Word-Synchronous Serial Back Plane	US	Issued	Aug 5, 1998	09129662	Apr 23, 2002	6377575	Microsemi Communications, Inc.
High Speed Cross Point Switch Routing Circuit With Word-Synchronous Serial Back Plane	US	Issued	Feb 12, 2002	10074106	Oct 5, 2004	6801518	Microsemi Communications, Inc.
High Speed Cross Point Switch Routing Circuit With Word-Synchronous Serial Back Plane	US	Issued	Jan 14, 2002	10047166	Mar 2, 2004	6700886	Microsemi Communications, Inc.
MODULE BASED ADDRESS TRANSLATION	US	Issued	Aug 17, 1999	09376763	Oct 29, 2002	6473813	Microsemi Communications, Inc.
ARRANGEMENT AND TRANSACTION OFFLOADING IN A DIGITAL SYSTEM	US	Issued	Sep 17, 2001	09955563	Apr 8, 2003	6545567	Microsemi Communications, Inc.
PROGRAMMABLE ANALOG TAPPED DELAY LINE FILTER HAVING CASCADED DIFFERENTIAL DELAY CELLS	US	Issued	May 29, 2002	10159648	May 6, 2003	6559682	Microsemi Communications, Inc.
DUAL-MIXER LOSS OF SIGNAL DETECTION CIRCUIT	US	Issued	May 7, 2001	09850530	May 20, 2003	6566904	Microsemi Communications, Inc.
PAD CALIBRATION CIRCUIT WITH ON-CHIP RESISTOR	US	Issued	Nov 17, 2000	09715847	Jun 17, 2003	6580846	Microsemi Communications, Inc.
ACTIVELY-CONTROLLABLE OPTICAL SWITCHES BASED ON OPTICAL POSITION SENSING AND APPLICATIONS IN OPTICAL SWITCHING ARRAYS	US	Issued	May 17, 2002	10150531	Aug 2, 2005	6925218	Microsemi Communications, Inc.
CONTROL TECHNIQUES AND DEVICES FOR AN OPTICAL SWITCH ARRAY	US	Issued					



Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
CLOCK BUFFER WITH DC OFFSET SUPPRESSION	US	Issued	May 24, 2001	09865008	Oct 14, 2003	6633191	Microsemi Communications, Inc.
METHOD OF CONTROLLING THE TURN OFF CHARACTERISTICS OF A VCSEL DIODE	US	Issued	Mar 12, 2002	10096739	Jan 27, 2004	6683896	Microsemi Communications, Inc.
REED-SOLOMON ENCODER AND DECODER	US	Issued	Jun 2, 2000	09586524	Feb 17, 2004	6694476	Microsemi Communications, Inc.
MONOLITHIC LOSS-OF-SIGNAL DETECT CIRCUITRY	US	Issued	Oct 11, 2001	09976511	Mar 30, 2004	6713749	Microsemi Communications, Inc.
LIMITING AMPLIFIER MODULATOR DRIVER	US	Issued	Jun 26, 2001	09892807	May 18, 2004	6738173	Microsemi Communications, Inc.
CLOCK RECOVERY UNIT WHICH USES A DETECTED FREQUENCY DIFFERENCE SIGNAL TO HELP ESTABLISH PHASE LOCK BETWEEN A TRANSMITTED DATA SIGNAL AND A RECOVERED CLOCK SIGNAL	US	Issued	Oct 6, 2000	09680679	May 18, 2004	6738922	Microsemi Communications, Inc.
PRODUCT CODE BASED FORWARD ERROR CORRECTION SYSTEM	US	Issued	Jun 4, 2001	09874158	Oct 26, 2004	6810499	Microsemi Communications, Inc.
ADJUSTMENT OF A CLOCK DUTY CYCLE	US	Issued	Oct 29, 2002	10282398	Dec 21, 2004	6833743	Microsemi Communications, Inc.
ACTUATOR-CONTROLLED MIRROR WITH Z-STOP MECHANISM	US	Issued	Sep 18, 2001	09956609	Jan 18, 2005	6844952	Microsemi Communications, Inc.
MULTIPLE ELEMENT CONTROLLED OPTICAL COUPLING	US	Issued	Aug 16, 2002	10222341	Feb 1, 2005	6850661	Microsemi Communications, Inc.
SELF-ALIGNED BIPOLAR TRANSISTOR	US	Issued	Feb 10, 2003	10364075	Mar 29, 2005	6873029	Microsemi Communications, Inc.
TRANSPARENT TRANSPORT OVERHEAD MAPPING	US	Issued	Jun 14, 2001	09882582	Jun 7, 2005	6904061	Microsemi Communications, Inc.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
METHOD OF OVERTONE SELECTION AND LEVEL CONTROL IN AN INTEGRATED CIRCUIT CMOS NEGATIVE RESISTANCE OSCILLATOR TO ACHIEVE LOW JITTER	US	Issued	Nov 24, 2003	10721910	Aug 23, 2005	6933793	Microsemi Communications, Inc.
CROSSPOINT SWITCH WITH SWITCH MATRIX MODULE	US	Issued	Jun 6, 2001	09878054	Sep 20, 2005	6946948	Microsemi Communications, Inc.
CROSSPOINT SWITCH WITH SWITCH MATRIX MODULE	US	Issued	Sep 20, 2005	11231320	Jun 26, 2007	7236084	Microsemi Communications, Inc.
LOW-DENSITY PARITY CHECK FORWARD ERROR CORRECTION	US	Issued	Oct 24, 2001	10044413	Sep 20, 2005	6948109	Microsemi Communications, Inc.
SWITCHING MODE REGULATOR FOR SFP ETHERNET ADAPTOR	US	Issued	Jan 9, 2004	10754250	Nov 22, 2005	6967471	Microsemi Communications, Inc.
SCALABLE CLOCK DISTRIBUTION FOR MULTIPLE CRU ON THE SAME CHIP	US	Issued	Jan 7, 2002	10041888	Jan 24, 2006	6990162	Microsemi Communications, Inc.
APPARATUS AND METHOD FOR INTER-CHIP OR CHIP-TO SUBSTRATE CONNECTION WITH A SUB-CARRIER	US	Issued	Dec 2, 2002	10308458	Feb 14, 2006	6998292	Microsemi Communications, Inc.
ON-CHIP CALIBRATED SOURCE TERMINATION FOR VOLTAGE MODE DRIVER AND METHOD OF CALIBRATION THEREOF	US	Issued	Apr 11, 2003	10411993	Oct 10, 2006	7119611	Microsemi Communications, Inc.
RZ RECOVERY METHOD AND APPARATUS FOR CONFIGURING THE OPERATION OF AN INTEGRATED CIRCUIT	US	Issued	Feb 1, 2002	10066982	Oct 17, 2006	7123678	Microsemi Communications, Inc.
METHOD AND APPARATUS FOR CONFIGURING THE OPERATION OF AN INTEGRATED CIRCUIT	US	Issued	May 24, 2004	10852586	Nov 7, 2006	7132849	Microsemi Communications, Inc.
INTEGRATED CIRCUIT IMPLEMENTATION FOR POWER AND AREA EFFICIENT ADAPTIVE EQUALIZATION	US	Issued	Jun 17, 2004	10872307	Nov 28, 2006	7142596	Microsemi Communications, Inc.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
AUTOMATIC LOAD BALANCING IN SWITCH FABRICS	US	Issued	Dec 11, 2001	10020491	Jan 9, 2007	7161901	Microsemi Communications, Inc.
DATA SWITCHING SYSTEM	US	Issued	May 6, 2002	10138496	Jan 16, 2007	7164677	Microsemi Communications, Inc.
DIFFERENTIAL OPTO- ELECTRONICS TRANSMITTER	US	Issued	Jan 11, 2006	11330497	Jun 5, 2007	7227878	Microsemi Communications, Inc.
TIME BASED PACKET SCHEDULING AND SORTING SYSTEM	US	Issued	Mar 11, 2002	10096442	Jun 12, 2007	7230923	Microsemi Communications, Inc.
FAST LOCKING CLOCK AND DATA RECOVERY UNIT	US	Issued	Nov 15, 2002	10295276	Jun 12, 2007	7231008	Microsemi Communications, Inc.
METHOD AND APPARATUS FOR IMPROVED HIGH-SPEED ADAPTIVE EQUALIZATION	US	Issued	Sep 11, 2001	09955278	Nov 27, 2007	7301997	Microsemi Communications, Inc.
METHOD AND APPARATUS FOR IMPROVED HIGH-SPEED ADAPTIVE EQUALIZATION	US	Issued	Nov 20, 2007	11943569	Jun 15, 2010	7738547	Microsemi Communications, Inc.
METHOD AND APPARATUS FOR IMPROVED HIGH-SPEED ADAPTIVE EQUALIZATION	US	Issued	Sep 30, 2003	10677123	Feb 21, 2006	7003228	Microsemi Communications, Inc.
METHOD AND APPARATUS FOR IMPROVED HIGH-SPEED ADAPTIVE EQUALIZATION	US	Issued	Mar 26, 2004	10810271	Jan 2, 2007	7158567	Microsemi Communications, Inc.
OPTICAL DISPERSION CORRECTION IN TRANSMIPEADANCE AMPLIFIERS	US	Issued	May 6, 2004	10841948	Dec 4, 2007	7305190	Microsemi Communications, Inc.
HIGH-SPEED DATA INTERFACE FOR CONNECTING NETWORK DEVICES	US	Issued	Oct 31, 2006	11555168	Feb 19, 2008	7331816	Microsemi Communications, Inc.
MEANS AND A METHOD FOR SWITCHING DATA PACKETS OR FRAMES	US	Issued	Jul 14, 2003	10617884	Mar 11, 2008	7342889	Microsemi Communications, Inc.
POWER AND AREA EFFICIENT ADAPTIVE EQUALIZATION	US	Issued	Jun 17, 2004	10872108	Dec 30, 2008	7471751	Microsemi Communications, Inc.
METHOD AND APPARATUS FOR SCHEDULING DATA ON A MEDIUM	US	Issued	Feb 25, 2002	10081152	Feb 3, 2009	7486686	Microsemi Communications, Inc.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
DIGITAL AUTOMATIC POWER CONTROL LOOP FOR CONTINUOUS AND BURST MODE APPLICATIONS	US	Issued	Sep 7, 2005	11221609	Apr 14, 2009	7516897	Microsemi Communications, Inc.
DATA LOOP PORT ACCELERATION CIRCUIT	US	Issued	Dec 1, 2003	10724957	Jun 9, 2009	7545817	Microsemi Communications, Inc.
MAINTAINING FILTERING DATABASE CONSISTENCY	US	Issued	Aug 22, 2006	11508361	Dec 22, 2009	7636352	Microsemi Communications, Inc.
VARIABLE BANDWIDTH TRANSIMPEDANCE AMPLIFIER WITH ONE-WIRE INTERFACE	US	Issued	Feb 16, 2005	11060061	Feb 2, 2010	7657191	Microsemi Communications, Inc.
DIFFERENTIAL VOLTAGE MODE DRIVER AND DIGITAL IMPEDANCE CALIBRATION	US	Issued	Sep 26, 2008	12239418	Oct 26, 2010	7821290	Microsemi Communications, Inc.
FUSES FOR MEMORY REPAIR	US	Issued	Sep 9, 2008	12207321	Nov 23, 2010	7839707	Microsemi Communications, Inc.
ADAPTIVE EQUALIZATION WITH GROUP DELAY	US	Issued	Jan 4, 2005	11029297	Apr 12, 2011	7924910	Microsemi Communications, Inc.
ADAPTIVE EQUALIZATION WITH GROUP DELAY	US	Issued	Mar 25, 2011	13071935	Jul 8, 2014	8774262	Microsemi Communications, Inc.
SYSTEM AND A METHOD FOR MAINTAINING QUALITY OF SERVICE THROUGH A CONGESTED NETWORK	US	Issued	May 7, 2002	10139338	Aug 30, 2011	8009569	Microsemi Communications, Inc.
SYSTEM AND METHOD FOR SQUELCHING A RECOVERED CLOCK IN AN ETHERNET NETWORK	US	Issued	Feb 11, 2008	12029230	May 15, 2012	8179901	Microsemi Communications, Inc.
CONTINUOUSLY INTERLEAVED ERROR CORRECTION	US	Issued	Nov 13, 2008	12270774	Sep 25, 2012	8276047	Microsemi Communications, Inc.
CONTINUOUSLY INTERLEAVED ERROR CORRECTION	US	Issued	Sep 14, 2012	13618380	Nov 11, 2014	8887021	Microsemi Communications, Inc.
CONTINUOUSLY INTERLEAVED ERROR CORRECTION	US	Issued	Oct 28, 2014	14526148	Sep 8, 2015	9130594	Microsemi Communications, Inc.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
FREQUENCY AND PHASE ACQUISITION OF A CLOCK AND DATA RECOVERY CIRCUIT WITHOUT AN EXTERNAL REFERENCE CLOCK	US	Issued	Jan 14, 2010	12687410	Oct 9, 2012	8284888	Microsemi Communications, Inc.
FREQUENCY AND PHASE ACQUISITION OF A CLOCK AND DATA RECOVERY CIRCUIT WITHOUT AN EXTERNAL REFERENCE CLOCK	US	Issued	Sep 14, 2012	13619108	Aug 12, 2014	8804892	Microsemi Communications, Inc.
FRAMED FLOWS OVER PACKET-SWITCHED FABRICS	US	Issued	Apr 20, 2010	12763972	Jan 29, 2013	8363670	Microsemi Communications, Inc.
CLOCK AND DATA RECOVERY FOR BURST-MODE SERIAL SIGNALS	US	Issued	Jan 14, 2010	12687414	Apr 9, 2013	8416902	Microsemi Communications, Inc.
DISTRIBUTED PACKET-BASED TIMESTAMP ENGINE	US	Issued	Mar 2, 2011	13039199	Oct 29, 2013	8571014	Microsemi Communications, Inc.
PACKET-BASED TIMING MEASUREMENT	US	Issued	Nov 16, 2012	13679672	Feb 4, 2014	8644350	Microsemi Communications, Inc.
TIMING SYNCHRONIZATION FOR NETWORKS WITH RADIO LINKS	US	Issued	May 11, 2012	13470092	Mar 25, 2014	8681772	Microsemi Communications, Inc.
ADAPTIVE DATA RECOVERY SYSTEM WITH INPUT SIGNAL EQUALIZATION	US	Issued	Feb 5, 2009	12366544	Apr 22, 2014	8705603	Microsemi Communications, Inc.
CLOCK AND DATA RECOVERY UNIT WITHOUT AN EXTERNAL REFERENCE CLOCK	US	Issued	Dec 23, 2010	12977995	Aug 5, 2014	8798223	Microsemi Communications, Inc.
MULTI-RATE SERIALIZER/DESERIALIZER CIRCUIT WITH BROAD OPERATING FREQUENCY RANGE	US	Issued	Jan 14, 2010	12687419	Sep 16, 2014	8837467	Microsemi Communications, Inc.
PACKET PROTOCOL PROCESSING WITH PRECISION TIMING PROTOCOL SUPPORT	US	Issued	Jun 30, 2010	12828190	Sep 30, 2014	8848746	Microsemi Communications, Inc.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
NETWORK DISTRIBUTED PACKET-BASED SYNCHRONIZATION	US	Issued	May 11, 2012	13470197	Oct 28, 2014	8873588	Microsemi Communications, Inc.
METHOD FOR SWITCHING MASTER/SLAVE TIMING IN A 100BASE-T LINK WITHOUT TRAFFIC DISRUPTION	US	Issued	Jan 12, 2011	13005515	Dec 30, 2014	8923341	Microsemi Communications, Inc.
HIGH ACCURACY 1588 TIMESTAMPING OVER HIGH SPEED MULTI LANE DISTRIBUTION PHYSICAL CODE SUBLAYERS	US	Issued	Sep 30, 2013	14041626	Mar 3, 2015	8971352	Microsemi Communications, Inc.
PACKET FORWARDING METHOD AND SYSTEM	US	Issued	May 2, 2003	10429267	Apr 21, 2015	9014195	Microsemi Communications, Inc.
TIMESTAMP PREDICTOR FOR PACKETS OVER A SYNCHRONOUS PROTOCOL	US	Issued	Sep 30, 2010	12895467	May 26, 2015	9042366	Microsemi Communications, Inc.
WAN TRANSPORT OF FRAMES WITH MAC SECURITY	US	Issued	Nov 7, 2012	13671516	Jul 28, 2015	9094375	Microsemi Communications, Inc.
PARALLEL CRC COMPUTATION WITH DATA ENABLES	US	Issued	Dec 19, 2013	14135437	Aug 11, 2015	9106388	Microsemi Communications, Inc.
Low Loss SIC MOSFET	US	Issued	Nov 13, 2013	14079541	May 26, 2015	9040377	Microsemi Corporation
POWER MOS DEVICE WITH ASYMMETRICAL CHANNEL STRUCTURE FOR ENHANCED LINEAR OPERATION CAPABILITY	US	Issued	Aug 8, 2001	09925289	Jan 7, 2003	6503786	Microsemi Corporation
SPLIT GATE POWER MODULE AND METHOD FOR SUPPRESSING OSCILLATION THEREIN	US	Issued	Jan 27, 2003	10352314	Sep 6, 2005	6939743	Microsemi Corporation
POWER MOS DEVICE WITH ASYMMETRICAL CHANNEL STRUCTURE FOR ENHANCED LINEAR OPERATION CAPABILITY	US	Issued	Oct 9, 2002	10268274	Dec 16, 2003	6664594	Microsemi Corporation

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
OS RECTIFYING SCHOTTKY AND OHMIC JUNCTION AND W/W/CTIC OHMIC CONTACTS ON SiC	US	Issued	Mar 7, 1996	08612216	Jul 27, 1999	5929523	Microsemi Corporation
METHOD OF MAKING OS AND W/W/CTIC OHMIC AND RECTIFYING CONTACT ON SiC	US	Issued	Feb 19, 1999	09251897	Nov 21, 2000	6150246	Microsemi Corporation
W/W/CTAC OHMIC AND RECTIFYING CONTACTS ON SiC	US	Issued	Jul 27, 2000	09628978	May 14, 2002	6388272	Microsemi Corporation
SILICON CARBIDE SEMICONDUCTOR DEVICES WITH A REGROWN CONTACT LAYER	US	Issued	Jan 9, 2003	10339040	Jan 3, 2006	6982440	Microsemi Corporation
METHOD OF FABRICATING SELF-ALIGNED SILICON CARBIDE SEMICONDUCTOR DEVICES	US	Issued	Nov 24, 2004	10997057	Mar 24, 2009	7508000	Microsemi Corporation
JUNCTION TERMINATION STRUCTURES FOR WIDE-BANDGAP POWER DEVICES	US	Issued	Nov 23, 2005	11286144	Mar 3, 2009	7498651	Microsemi Corporation
RF POWER TRANSISTOR PACKAGE	US	Issued	Sep 21, 2005	11233180	Aug 4, 2009	7569927	Microsemi Corporation
SPLIT-GATE POWER MODULE FOR SUPPRESSING OSCILLATION THEREIN	US	Issued	Jun 3, 2005	11145042	Mar 11, 2008	7342262	Microsemi Corporation
SELF ALIGNED PROCESS FOR BJT FABRICATION	US	Issued	Sep 28, 2006	11536581	Aug 25, 2009	7579252	Microsemi Corporation
DESIGN AND FABRICATION OF RUGGED FRED. POWER MOSFET OR IGBT	US	Issued	Dec 21, 2006	11614897	Mar 2, 2010	7671410	Microsemi Corporation
EDGE TERMINATION FOR HIGH VOLTAGE SEMICONDUCTOR DEVICE	US	Issued	Sep 9, 2008	12206954	Feb 7, 2012	8110888	Microsemi Corporation
SCHOTTKY BARRIER DIODE EMPLOYING EMBEDDED JUNCTION BARRIER STRUCTURE	US	Issued	Feb 3, 2009	12365083	Dec 14, 2010	7851881	Microsemi Corporation

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
RF POWER TRANSISTOR PACKAGE	US	Issued	Jun 26, 2009	12492858	Jun 7, 2011	7956455	Microsemi Corporation
RF Package	US	Issued	Nov 3, 2010	12938974	Apr 2, 2013	8410601	Microsemi Corporation
Multi-Layer Thick film RF Package	US	Issued	Nov 8, 2010	12941401	Oct 11, 2011	8034666	Microsemi Corporation
Silicon Carbide Vertical-Sidewall Dual-Mesa Stratic Induction Transistor	US	Issued	Dec 13, 2011	13324601	Aug 27, 2013	8519410	Microsemi Corporation
High Reliability-High Voltage Junction Termination with Charge Dissipation Layer	US	Issued	Feb 18, 2011	13030907	Jul 2, 2013	8476691	Microsemi Corporation
Low Loss SIC MOSFET	US	Issued	Aug 1, 2011	13195632	Mar 18, 2014	8674439	Microsemi Corporation
SIC MOSFET with Increased SOA	US	Issued	Sep 13, 2011	13231877	May 7, 2013	8436367	Microsemi Corporation
PSEUDO SELF ALIGNED RADHARD MOSFET AND PROCESS OF MANUFACTURE	US	Issued	Jan 15, 2013	13742253	Sep 23, 2014	8841718	Microsemi Corporation
Low Leakage Input Protection Device and Scheme for Electrostatic Discharge	US	Issued	Mar 15, 2001	09808676	Jan 11, 2005	6842318	Microsemi Corporation
Implantable Cardiac Defibrillation with Control Circuit for Controlling a High Voltage Circuit Using a Low Voltage Circuit	US	Issued	Aug 28, 2003	10650546	Oct 5, 2004	6800916	Microsemi Corporation
Implantable Cardiac Defibrillation with Control Circuit for Controlling a High Voltage Circuit Using a Low Voltage Circuit	US	Issued	Aug 28, 2003	10650534	Feb 8, 2005	6853047	Microsemi Corporation
PIN or NIP Low Capacitance Transient Voltage Suppressors and Steering Diodes	US	Issued	Feb 27, 2004	10788536	Mar 7, 2006	7009831	Microsemi Corporation
Bi-Directional PIN or NIP Low Capacitance Transient Voltage Suppressors and Steering Diodes	US	Issued	Mar 3, 2005	11071513	Jan 16, 2007	7164568	Microsemi Corporation
Uni-Directional PIN or NIP Conducting Low Capacitance Transient Voltage Suppressors and Steering Diodes	US	Issued	Mar 3, 2005	11071128	Aug 1, 2006	7084486	Microsemi Corporation



<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
PN or NIP Low Capacitance Transient Voltage Suppressors and Steering Diodes	US	Issued	Feb 27, 2004	11071127	Mar 6, 2007	7187012	Microsemi Corporation
Plastic Surface Mount Large Area Power Device	US	Issued	Sep 29, 2006	11542090	Jun 22, 2010	7741706	Microsemi Corporation
Integrated Circuit with Flexible Planar Leads	US	Issued	Mar 27, 2007	11728624	Nov 15, 2011	8058719	Microsemi Corporation
High Temperature, High Voltage SiC Void-Less Electronic Package	US	Issued	Oct 9, 2007	11973573	Oct 14, 2008	7435993	Microsemi Corporation
Method of Fabricating a Light-Emitting Device (LED) Utilizing Powder/Pelletized Homogeneously Mixed Molding Compound	US	Issued	Mar 14, 2005	11079323	Sep 18, 2012	8269409	Microsemi Corporation
Solid-State Photodetector with Variable Spectral Response	US	Issued	Jul 16, 2013	13943305	Dec 15, 2015	9212992	Microsemi Corporation
Semiconductor Package With Embedded Magnetic Component and Method of Manufacture	US	Issued	Mar 23, 2009	12383468	Jan 10, 2012	8094458	Microsemi Corporation
Integrated Multi-Transformer	US	Issued	Mar 16, 2009	12404971	Jun 7, 2011	7956491	Microsemi Corporation
Phase-Cut Dimming Circuit	US	Issued	Mar 16, 2009	12404979	Jan 24, 2012	8102167	Microsemi Corporation
Methods and Apparatuses for Phase-Cut Dimming at Low Conduction Angles	US	Issued	Dec 27, 2011	13338049	Oct 15, 2013	8558518	Microsemi Corporation
Pulse Transformer Driver	US	Issued	Apr 1, 2009	12416363	Jan 1, 2013	8345779	Microsemi Corporation
Pulse Transformer Driver	US	Issued	Dec 18, 2012	13718131	Dec 3, 2013	8599937	Microsemi Corporation
Voltage Level Shifter	US	Issued	Apr 10, 2009	12422060	Aug 24, 2010	7782115	Microsemi Corporation
Voltage Level Shifter for Arbitrary Input Signals	US	Issued	Jul 21, 2010	12840996	Mar 22, 2011	7911255	Microsemi Corporation
Power Supply With Standby Power	US	Issued	May 27, 2009	12472539	Mar 27, 2012	8143748	Microsemi Corporation
Current Sensing for High Voltage Buck Converter	US	Issued	Aug 6, 2009	12536595	Aug 28, 2012	8253400	Microsemi Corporation
Bus Voltage Optimizer for Switched Power Converter	US	Issued	Aug 6, 2009	12536596	Aug 28, 2012	8253395	Microsemi Corporation
Light Emitting Diode Fault Monitoring	US	Issued	Aug 21, 2009	12545437	Sep 23, 2014	8843331	Microsemi Corporation
High-Speed Comparator	US	Issued	Jan 24, 2011	13012645	Jun 4, 2013	8456196	Microsemi Corporation
Junction Gate Driver with Tapped Inductor Current Source	US	Issued	May 10, 2011	13104809	May 7, 2013	8436662	Microsemi Corporation

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
Auto-Optimization Circuits and Methods for Cyclical Electronic Systems	US	Issued	Aug 3, 2011	13197596	Mar 18, 2014	8675374	Microsemi Corporation
Gate Driver Power and Timing Signal Transmission Through a Single Transformer	US	Issued	Aug 3, 2011	13197612	May 28, 2013	8451626	Microsemi Corporation
Security System Housing	US	Issued	Apr 15, 2008	29306747	Mar 15, 2011	D634229	Microsemi Corporation
Inclusion of Assessment Data in Millimeter Wave Concealed Object Detection Systems	US	Issued	Dec 18, 2008	12338780	Oct 1, 2013	8547274	Microsemi Corporation
Pedestal Mount for Security Camera (Design)	US	Issued	Apr 15, 2008	29306748	Jun 22, 2010	D618269	Microsemi Corporation
Software Methodology for Autonomous Concealed Object Detection and Threat	US	Issued	Dec 18, 2008	12338807	May 7, 2013	8437566	Microsemi Corporation
Millimeter Wave Imaging Method and System to Detect Concealed Objects	US	Issued	Jul 2, 2012	13540340	Apr 29, 2014	8712093	Microsemi Corporation
Multi-Camera Imaging System	US	Issued	Aug 8, 2007	11835905	Jan 18, 2011	7873182	Microsemi Corporation
Passive Broadband Illuminator	US	Issued	Aug 8, 2007	11835930	Oct 13, 2009	7601958	Microsemi Corporation
GEN-1 - Security Housing Appearance (Design)	US	Issued	Aug 8, 2007	29283233	Jun 17, 2008	D571244	Microsemi Corporation
Real Time Video Playback	US	Issued	Apr 28, 2008	12110508	Aug 24, 2010	7781717	Microsemi Corporation
Range and Motion Algorithms	US	Issued	Jun 2, 2008	12131539	Nov 6, 2012	8306272	Microsemi Corporation
EDS Outdoor Structure	US	Issued	Jun 9, 2008	12135698	Dec 28, 2010	7858938	Microsemi Corporation
System and Method for Overlaying Computer Generated Highlights in a Display of Millimeter Wave Imagery	US	Issued	Feb 13, 2012	13372253	Jan 15, 2013	8355538	Microsemi Corporation
SafeScreen Design Patent	US	Issued	Feb 18, 2011	US29385710	Jun 19, 2012	D662221	Microsemi Corporation
Mobile Security System Housing	US	Issued	Nov 30, 2010	US29379049	Mar 26, 2013	D678792	Microsemi Corporation
Handheld Scanner Design Patent (All Clear)	US	Issued	Feb 18, 2011	US29385707	Jul 17, 2012	D663634	Microsemi Corporation

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
TAPERED ATTENUATOR NETWORK FOR MITIGATING EFFECTS OF DIRECT CURRENT (DC) BIAS INDUCTOR SELF-RESONANCE IN TRAVELLING WAVE AMPLIFIERS	US	Issued	Mar 30, 2012	13436802	Jun 4, 2013	8456238	Microsemi Corporation
DISTRIBUTED LEVEL - SHIFTING NETWORK FOR CASCADING BROADBAND AMPLIFIERS	US	Issued	Jan 24, 2003	10351602	Jul 6, 2004	6759907	Microsemi Corporation
VOLTAGE-LIMITED DISTRIBUTED CURRENT SOURCE FOR ULTRA-BROADBAND IMPEDANCE TERMINATION	US	Issued	Mar 5, 2003	10382714	Sep 7, 2004	6788148	Microsemi Corporation
DETECTION OF FREQUENCY DIFFERENCES BETWEEN SIGNALS	US	Issued	Oct 1, 2002	10263066	Jan 20, 2004	6680991	Microsemi Corporation
Coaxial to Microstrip Transitions and Manufacturing Method	US	Issued	May 27, 2010	12788328	Mar 29, 2011	7915981	Microsemi Corporation
Coaxial to Microstrip Transitions and Manufacturing Method	US	Issued	Feb 27, 2008	12038546	Jul 6, 2010	7750764	Microsemi Corporation
Distributed Amplifier with Negative Feedback	US	Issued	Feb 23, 2009	12391144	Sep 28, 2010	7804362	Microsemi Corporation
Mechanical Isolation and Thermal Conductivity for an Electro-Magnetic Device	US	Issued	Mar 29, 2011	13074031	Aug 27, 2013	8520390	Microsemi Corporation
Less Expensive High Power Plastic Surface Mount Package	US	Issued	Nov 6, 2009	12590377	Sep 25, 2012	8274164	Microsemi Corporation
Flexible Diode Package and Method of Manufacturing	US	Issued	Oct 27, 2009	12589682	Aug 23, 2011	8003446	Microsemi Corporation
Integrated Circuit with Flexible Planar Leads	US	Issued	Dec 5, 2008	12315741	Sep 13, 2011	8018042	Microsemi Corporation
Silicon Carbide Semiconductor	US	Issued	Feb 9, 2010	12658328	Nov 19, 2013	8587107	Microsemi Corporation
High Voltage High Package Pressure Semiconductor Package	US	Issued	Feb 9, 2010	12658576	Aug 7, 2012	8237171	Microsemi Corporation
VOIDLESSLY ENCAPSULATED SEMICONDUCTOR DIE PACKAGE	US	Issued	Apr 22, 2014	14258775	Oct 6, 2015	9153516	Microsemi Corporation

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
APPARATUS AND METHOD FOR ASSESSING VOLUMETRIC MOISTURE CONTENT AND CONTROLLING AN IRRIGATOR	US	Issued	Oct 31, 2012	13665871	Sep 8, 2015	9128494	Microsemi Corporation
Charge Limited High Voltage Switch Circuits - (Square Drive)	US	Issued	Apr 19, 2007	11737172	Nov 11, 2008	7449841	Microsemi Corporation
Using a Triangular Waveform to Synchronize the Operation of an Electronic Circuit	US	Issued	Dec 13, 2007	11955477	Dec 14, 2010	7852019	Microsemi Corporation
A Signal Acquisition Circuit for Detecting a Wanted Signal in the Presence of an Unwanted Signal	US	Issued	May 17, 2011	13109364	Dec 9, 2014	8909312	Microsemi Corporation
System and Method for IM3 Reduction and Cancellation in Amplifiers	US	Issued	Feb 9, 2007	11673422	Aug 11, 2009	7573329	Microsemi Corporation
Inter-Stage Matching Network to Enhance Common Mode Stability	US	Issued	Oct 22, 2007	12446311	Apr 12, 2011	7924092	Microsemi Corporation
RF Switchable BALUN	US	Issued	Oct 13, 2010	12903387	Feb 5, 2013	8368481	Microsemi Corporation
ARCHITECTURE FOR COEXISTENCE OF MULTIPLE BAND RADIOS	US	Issued	Apr 13, 2011	13085509	Mar 11, 2014	8670726	Microsemi Corporation
INTEGRATED TECHNIQUE FOR ENHANCED POWER AMPLIFIER FORWARD POWER DETECTION	US	Issued	May 14, 2013	13894221	Feb 3, 2015	8947164	Microsemi Corporation
INTEGRATED START-UP BIAS BOOST FOR DYNAMIC ERROR VECTOR MAGNITUDE ENHANCEMENT	US	Issued	Nov 26, 2013	14090401	Sep 15, 2015	9136802	Microsemi Corporation
INTEGRATED START-UP BIAS BOOST FOR DYNAMIC ERROR VECTOR MAGNITUDE ENHANCEMENT	US	Issued	May 15, 2013	13895236	Oct 6, 2015	9154090	Microsemi Corporation
INTEGRATED START-UP BIAS BOOST FOR DYNAMIC ERROR VECTOR MAGNITUDE ENHANCEMENT	US	Issued	May 17, 2013	13897192	Aug 25, 2015	9118281	Microsemi Corporation
SPRAY COATING APPARATUS AND FIXTURES (WHT-001)	US	Issued	Jan 10, 2003	10339800	Apr 24, 2007	7208046	Microsemi Corporation

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
SYSTEMS AND METHODS FOR BUILDING TAMPER RESISTANT COATINGS (WHT-003)	US	Issued	Sep 14, 2004	10941628	Jul 3, 2012	8210120	Microsemi Corporation
SPRAY COATING APPARATUS AND FIXTURES (WHT-004)	US	Issued	May 13, 2004	10845746	Apr 28, 2009	7524537	Microsemi Corporation
METHOD FOR PRODUCING SHOCK AND TAMPER RESISTANT MICROELECTRONIC DEVICES (WHT-006)	US	Issued	Nov 19, 2007	11942572	May 25, 2010	7723162	Microsemi Corporation
Method and Apparatus for Stacked Die Package with Insulated Wire Bonds	US	Issued	Nov 12, 2008	12269798	May 18, 2010	7718471	Microsemi Corporation
Method and Apparatus for Stacked Die Package with Insulated Wire Bonds	US	Issued	Mar 25, 2010	12731420	May 10, 2011	7939928	Microsemi Corporation
Memory Module	US	Issued	May 23, 2003	10445283	Sep 13, 2005	6943454	Microsemi Corporation
ENHANCED CLOCK CONTROL IN PACKET NETWORKS	US	Issued	Jan 31, 2007	11669882	Nov 22, 2011	8064484	Microsemi Frequency and Time Corporation
NETWORK TIME PROTOCOL PRECISION TIMESTAMPING SERVICE	US	Issued	May 16, 2007	11749666	May 28, 2013	8451867	Microsemi Frequency and Time Corporation
Precision Reference Generation System and Method	US	Issued	Jun 5, 1998	09092452	Apr 23, 2002	6377585	Microsemi Frequency and Time Corporation
Adaptive play-out buffers and clock operation in packet networks	US	Issued	Jun 12, 2006	11451652	Dec 22, 2009	7636022	Microsemi Frequency and Time Corporation
ADAPTIVE PLAY-OUT BUFFERS AND ADAPTIVE CLOCK OPERATION IN PACKET NETWORKS	US	Issued	Jun 12, 2006	11451653	Feb 22, 2011	7894489	Microsemi Frequency and Time Corporation
Precise Network Time Transfer	US	Issued	Apr 17, 2001	09837793	Jan 10, 2006	6985499	Microsemi Frequency and Time Corporation
Network Time Transfer	US	Issued	Apr 5, 2005	11098960	Jan 25, 2011	7876788	Microsemi Frequency and Time Corporation
TWO-WAY TIMING PROTOCOL	US	Issued	Jul 14, 2004	10891411	May 19, 2009	7535931	Microsemi Frequency and Time Corporation

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
Controlling Access to Stored Information Based on Geographical Location and Data and Time	US	Issued	Oct 29, 1998	09182342	Apr 9, 2002	6370629	Microsemi Frequency and Time Corporation
System and Methods for Generating Trusted and Authenticatable Time Stamps for Electronic Documents	US	Issued	Feb 22, 2000	09510408	May 21, 2002	6393126	Microsemi Frequency and Time Corporation
MULTIPLE TRANSMISSION BANDWIDTH STREAMS WITH DIFFERENTIATED QUALITY OF SERVICE	US	Issued	Jan 16, 2004	10759391	May 19, 2009	7535900	Microsemi Frequency and Time Corporation
Synchronization of TDMA Cell Sites	US	Issued	Oct 15, 1997	08950429	Sep 26, 2000	6125125	Microsemi Frequency and Time Corporation
Multiple Input Frequency Locked Loop	US	Issued	May 3, 1996	08642814	May 12, 1998	5751777	Microsemi Frequency and Time Corporation
Multiple Input Frequency Locked Loop	US	Issued	May 2, 1997	08850149	Aug 24, 1999	5943381	Microsemi Frequency and Time Corporation
Thermo-electric Cooled Oven Controlled Crystal	US	Issued	Oct 21, 1998	09176128	Dec 26, 2000	6166608	Microsemi Frequency and Time Corporation
Supporting synchronization status messages on building integrated timing supply synchronization supply unit remote shelves	US	Issued	Jan 23, 2003	10349576	Feb 9, 2010	7660332	Microsemi Frequency and Time Corporation
DISTRIBUTION OF SYNCHRONIZATION IN AN ETHERNET LOCAL AREA NETWORK ENVIRONMENT	US	Issued	Dec 16, 2002	10320312	Jun 3, 2008	7382845	Microsemi Frequency and Time Corporation
SYNCHRONIZATION MODULE	US	Issued	Feb 19, 2004	10782313	Apr 5, 2005	6876242	Microsemi Frequency and Time Corporation
Stratum Clock State Machine Multiplexer Switching	US	Issued	Feb 19, 2004	10782441	Sep 13, 2005	6943609	Microsemi Frequency and Time Corporation
Global positioning system receiver capable of functioning in the presence of Interference	US	Issued	Mar 9, 2001	09802484	Jan 28, 2003	6512803	Microsemi Frequency and Time Corporation
Global positioning system receiver Interference Detection	US	Issued	Nov 14, 2002	10294227	Jan 11, 2005	6842498	Microsemi Frequency and Time Corporation
Pilot tracking for synchronization using correlation between digital signal and locally generated version of PN signal	US	Issued	Apr 20, 2000	09553735	Oct 31, 2006	7130332	Microsemi Frequency and Time Corporation

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
Method and Apparatus For Monitoring Packet Networks	US	Issued	Sep 11, 2009	12558297	Jan 31, 2012	8107502	Microsemi Frequency and Time Corporation
Method and Apparatus for Finding Latency Floor in Packet Networks	US	Issued	Dec 7, 2009	12632643	Feb 26, 2013	8385212	Microsemi Frequency and Time Corporation
Method and System for Analyzing and Qualifying Packet Networks	US	Issued	Jul 2, 2010	12830268	Sep 25, 2012	8274999	Microsemi Frequency and Time Corporation
METHOD AND SYSTEM FOR ANALYZING AND QUALIFYING ROUTES IN PACKET NETWORKS	US	Issued	Jul 2, 2010	12830270	Apr 23, 2013	8427963	Microsemi Frequency and Time Corporation
PRECISION TIME TRANSFER OVER OPTICAL FIBER	US	Issued	Jul 13, 2010	12835586	Nov 26, 2013	8594134	Microsemi Frequency and Time Corporation
METHOD FOR GENERATING A ROBUST TIMING CORRECTION IN TIMING TRANSFER SYSTEMS	US	Issued	Apr 20, 2011	13091097	Feb 4, 2014	8644348	Microsemi Frequency and Time Corporation
Precise clock synchronization over optical fiber	US	Issued	Dec 1, 2011	13309500	Dec 3, 2013	8600239	Microsemi Frequency and Time Corporation
ASYMMETRY CORRECTION FOR PRECISE CLOCK SYNCHRONIZATION OVER OPTICAL FIBER	US	Issued	Mar 13, 2013	13800446	Oct 13, 2015	9160473	Microsemi Frequency and Time Corporation
Metallic cell for optically activated atomic frequency standards	US	Issued	May 5, 1999	09306670	Apr 10, 2001	6215366	Microsemi Frequency and Time Corporation
Optically pumped atomic frequency standard	US	Issued	Nov 18, 1999	09443022	Apr 24, 2001	6222424	Microsemi Frequency and Time Corporation
Atomic frequency standard based on coherent state preparation	US	Issued	Mar 9, 1999	09265351	Jul 3, 2001	6255647	Microsemi Frequency and Time Corporation
Atomic frequency standard based upon coherent population trapping	US	Issued	Oct 25, 1999	09427397	Jul 24, 2001	6265945	Microsemi Frequency and Time Corporation
Atomic frequency standard	US	Issued	Jan 26, 1999	09237585	Nov 20, 2001	6320472	Microsemi Frequency and Time Corporation
Apparatus for correcting for the effects of laser noise	US	Issued	Aug 13, 2003	10640139	Feb 21, 2006	7003438	Microsemi Frequency and Time Corporation
Determining and setting the frequency modulation index of a laser in a CPT frequency standard	US	Issued	Jun 18, 2004	10560462	Aug 17, 2010	7778293	Microsemi Frequency and Time Corporation

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
DISTRIBUTION OF LOCATION INFORMATION	US	Issued	Feb 24, 2014	14188398	Oct 6, 2015	9155062	Microsemi Frequency and Time Corporation
LIGHT STABILIZATION FOR OPTICALLY EXCITABLE ATOMIC MEDIUM	US	Issued	Sep 3, 2003	10654155	Aug 9, 2005	6927636	Microsemi Frequency and Time Corporation
MINIATURE GAS CELL WITH FOLDED OPTICS	US	Issued	Sep 2, 2003	10653376	Jun 20, 2006	7064835	Microsemi Frequency and Time Corporation
ARRANGEMENT FOR ASYNCHRONOUS DECIMATION USING A FREQUENCY RATIO ESTIMATOR AND METHOD THEREOF	US	Issued	Feb 27, 1997	08807836	Dec 21, 1999	6005901	Microsemi Semiconductor (U.S.) Inc.
ARRANGEMENT AND METHOD FOR CONTROLLING GAIN OF ANALOG TO DIGITAL CONVERTERS	US	Issued	Dec 5, 1997	08985586	Oct 5, 1999	5963159	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR PROGRAMMABLE TELEPHONE SUBSCRIBER LINE TEST	US	Issued	Jun 20, 1997	08879986	May 2, 2000	6058161	Microsemi Semiconductor (U.S.) Inc.
TELEPHONE SUBSCRIBER LINE DIAGNOSTICS SYSTEM AND METHOD	US	Issued	Jun 20, 1997	08880007	Sep 21, 1999	5956386	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR PROGRAMMABLE TELEPHONE SUBSCRIBER LINE TEST IN RING MODE	US	Issued	Jun 20, 1997	08880008	Nov 7, 2000	6144722	Microsemi Semiconductor (U.S.) Inc.
DEVICE AND METHOD FOR DETERMINING CHARACTERISTICS OF A DIGITAL SUBSCRIBER LINE	US	Issued	Jul 28, 2000	09627680	Feb 28, 2006	7006445	Microsemi Semiconductor (U.S.) Inc.
PHASE-LOCKED LOOP ARRANGEMENT WITH FAST LOCK MODE	US	Issued	Jun 16, 1997	08876816	Apr 16, 2002	6373912	Microsemi Semiconductor (U.S.) Inc.
ARRANGEMENT AND METHOD FOR SELECTABLE TIME/FREQUENCY DIVISION MULTIPLEX COMMUNICATION	US	Issued	Feb 27, 1998	09031896	Jul 31, 2001	6269086	Microsemi Semiconductor (U.S.) Inc.



Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
METHOD AND APPARATUS FOR POWER REGULATION OF DIGITAL DATA TRANSMISSION	US	Issued	Jun 12, 1998	09097031	May 1, 2001	6226356	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR DETECTING AND MEASURING FOREIGN VOLTAGES	US	Issued	Aug 4, 1998	09128579	Mar 12, 2002	6356624	Microsemi Semiconductor (U.S.) Inc.
Method and Apparatus for Scaling Modem Transfer Capacity in a Multi-Channel Communications System	US	Issued	Aug 27, 1998	09141216	Jan 8, 2002	6337877	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR GENERATING TONES IN A MULTI-TONE MODEM	US	Issued	Jun 29, 1998	09106993	Apr 17, 2001	6219377	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR IMPEDANCE MATCHING WIRELESS TELEPHONY RING DETECTION METHOD FOR EXTENDED BATTERY LIFE	US	Issued	Mar 15, 1999	09268011	Apr 27, 2004	6728370	Microsemi Semiconductor (U.S.) Inc.
WIRELESS TELEPHONY RING DETECTION METHOD FOR EXTENDED BATTERY LIFE	US	Issued	Apr 13, 1998	09059115	Nov 7, 2000	6144840	Microsemi Semiconductor (U.S.) Inc.
WIRELESS TELEPHONY RING DETECTION METHOD FOR EXTENDED BATTERY LIFE	US	Issued	May 15, 2000	09570644	Oct 30, 2001	6311079	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR DETECTING SIGNAL MISALIGNMENT	US	Issued	Sep 23, 1998	09159028	Apr 4, 2000	6046977	Microsemi Semiconductor (U.S.) Inc.
TRANSCIEVER WITH VARIABLE WIDTH CYCLIC PREFIX	US	Issued	Mar 2, 1999	09257674	Mar 18, 2003	6535550	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR INSERTING IDLE SYMBOLS	US	Issued	Mar 2, 1999	09260251	Feb 11, 2003	6519280	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR TRANSMITTING DATA FROM A PLURALITY OF USERS IN A MULTI-TONE MODEM COMMUNICATION SYSTEM	US	Issued	Jul 21, 1999	09357724	Dec 24, 2002	6498807	Microsemi Semiconductor (U.S.) Inc.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
METHOD AND APPARATUS FOR ALLOCATING TONES TO A PLURALITY OF USERS IN A MULTI-TONE MODEM COMMUNICATIONS SYSTEM	US	Issued	Jul 21, 1999	09359343	Dec 31, 2002	6501791	Microsemi Semiconductor (U.S.) Inc.
APPARATUS AND METHOD FOR FACILITATING STANDARDIZED TESTING OF SIGNAL LINES	US	Issued	Jul 28, 1999	09362456	Nov 30, 2004	6826155	Microsemi Semiconductor (U.S.) Inc.
An Integrated Silicon Optical Isolator	US	Issued	May 19, 2008	12122771	Oct 20, 2009	7605010	Microsemi Semiconductor (U.S.) Inc.
METHOD FOR CONSERVING POWER IN TRANSCIEVERS	US	Issued	Feb 1, 1999	09243391	Aug 26, 2003	6611564	Microsemi Semiconductor (U.S.) Inc.
MULTI-TONE TRANSCIEVER FOR MULTIPLE USERS	US	Issued	Jan 22, 1999	09236122	Jul 23, 2002	6424674	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR FREQUENCY HOPPING IN A SPREAD SPECTRUM DIGITAL CORDLESS TELEPHONE SYSTEM	US	Issued	Jul 27, 1999	09361893	May 9, 2006	7042923	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR DC FEED CONTROL	US	Issued	Oct 20, 1999	09420713	Dec 30, 2003	6671373	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR INTRA-BUNDLE SIGNALING	US	Issued	Jul 29, 1999	09363441	Sep 2, 2003	6614879	Microsemi Semiconductor (U.S.) Inc.
COMMUNICATION DEVICE WITH PRIMITIVE SYNCHRONIZATION SIGNAL	US	Issued	Jan 4, 2000	09477200	Mar 30, 2004	6714589	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR SWITCH HOOK DETECTION	US	Issued	Apr 26, 2000	09558187	Mar 8, 2005	6865269	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR HANDLING VOICE AND DATA SIGNALS	US	Issued	Dec 29, 2000	09751417	Jan 24, 2006	6990191	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR DC FEED	US	Issued	Dec 29, 2000	09752160	Dec 8, 2009	7630490	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR RINGING	US	Issued	Dec 29, 2000	09752167	Oct 12, 2010	7813500	Microsemi Semiconductor (U.S.) Inc.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
METHOD AND APPARATUS FOR RINGING	US	Issued	Sep 10, 2010	12879968	Feb 5, 2013	8369510	Microsemi Semiconductor (U.S.) Inc.
CURRENT SENSING ECHO CANCELLATION DEVICE	US	Issued	Feb 6, 2002	10068780	May 8, 2007	7215764	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR SENSING CURRENT	US	Issued	Mar 17, 2000	09527768	Aug 17, 2004	6778663	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR CONTROLLING RESET OPERATIONS	US	Issued	Aug 21, 2000	09642710	Jun 4, 2002	6400195	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR DETECTING AN ACTIVATION TONE	US	Issued	Feb 4, 2000	09498435	Dec 9, 2003	6661891	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR DETECTING LINE CARD THRESHOLD	US	Issued	Dec 29, 2000	09753343	Jul 3, 2007	7239695	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR ADAPTIVE DC LEVEL CONTROL	US	Issued	Dec 29, 2000	09751421	Mar 13, 2007	7190784	Microsemi Semiconductor (U.S.) Inc.
Method and Apparatus for Multi-PHY Communication without an ATM BUS Master	US	Issued	Apr 25, 2001	09844747	Sep 22, 2009	7594026	Microsemi Semiconductor (U.S.) Inc.
Method and Apparatus for Multi-PHY Communication without an ATM BUS Master	US	Issued	Aug 24, 2009	12546486	Aug 9, 2011	7996557	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR PHANTOM BATTERY FEED	US	Issued	Mar 7, 2003	10384300	Oct 18, 2005	6956945	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR REDUCING FALSEHOOK DETECTION	US	Issued	Jan 11, 2001	09758893	Aug 16, 2005	6930751	Microsemi Semiconductor (U.S.) Inc.
An Optically Triggered Electro-Static Discharge Protection Circuit	US	Issued	Mar 12, 2008	12046683	May 11, 2010	7715162	Microsemi Semiconductor (U.S.) Inc.
Method of Counter-Doping Collector Regions in Bipolar Transistors	US	Issued	Apr 2, 2008	12061264	Oct 11, 2011	8035196	Microsemi Semiconductor (U.S.) Inc.
A Trench Capacitor for High Voltage Processes and Method of Manufacturing the Same	US	Issued	Jul 14, 2008	12172532	Sep 18, 2012	8269265	Microsemi Semiconductor (U.S.) Inc.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
METHOD AND APPARATUS FOR AN ACTIVE IMPEDANCE FEEDBACK	US	Issued	Mar 7, 2003	10384304	Aug 7, 2007	7254229	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR A DIFFERENTIAL FEEDBACK IN AN ACTIVE IMPEDENCE FEEDBACK CIRCUIT	US	Issued	Mar 7, 2003	10384299	Sep 26, 2006	7113590	Microsemi Semiconductor (U.S.) Inc.
UNBALANCED SLIC WITH BUILT-IN RING CIRCUIT	US	Issued	Mar 7, 2003	10384302	Aug 21, 2007	7260210	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR A SINGLE POWER SUPPLY FOR DUAL POWER MODE	US	Issued	Mar 7, 2003	10384296	Feb 20, 2007	7181002	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR LONGITUDINAL BALANCE CALIBRATION	US	Issued	Nov 19, 2003	10717365	Nov 18, 2008	7453896	Microsemi Semiconductor (U.S.) Inc.
DOUBLE TIME-CONSTANT FOR ELECTROSTATIC DISCHARGE CLAMPING	US	Issued	Dec 22, 2003	10745382	Jul 12, 2005	6917207	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR ACCESSING MEMORIES HAVING A TIME-VARIANT RESPONSE OVER A PCI BUS BY USING TWO-STAGE DMA TRANSFERS	US	Issued	Jul 13, 2001	09904748	May 16, 2006	7047328	Microsemi Semiconductor (U.S.) Inc.
PROTECTION CIRCUIT FOR A SUBSCRIBER LINE INTERFACE CIRCUIT	US	Issued	Mar 12, 2008	12046642	Mar 15, 2011	7907381	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR POWER-MODE CONTROL	US	Issued	Jan 9, 2007	11621426	Jan 3, 2012	8090095	Microsemi Semiconductor (U.S.) Inc.
Bootstrap Supply for Switched Mode Power Converter	US	Issued	Aug 13, 2008	12190907	Aug 23, 2011	8004122	Microsemi Semiconductor (U.S.) Inc.
Light Activated Silicon Controlled Switch	US	Issued	Apr 2, 2008	12061085	Oct 26, 2010	7821016	Microsemi Semiconductor (U.S.) Inc.
Light Activated Silicon Controlled Switch	US	Issued	Sep 15, 2010	12882640	Sep 6, 2011	8012775	Microsemi Semiconductor (U.S.) Inc.
Echo Cancellation Balance Using Noise Generator and Average Power Detection	US	Issued	May 28, 2008	12127818	Apr 17, 2012	8160240	Microsemi Semiconductor (U.S.) Inc.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
SELF-CONTAINED SELF-TESTING DATA MODULATOR	US	Issued	Jun 5, 1995	08463683	Sep 19, 2000	61222313	Microsemi Semiconductor (U.S.) Inc.
DIGITAL WAVETABLE AUDIO SYNTHESIZER WITH DELAY-BASED EFFECTS PROCESSING	US	Issued	Nov 2, 1994	08334462	Apr 4, 2000	6047073	Microsemi Semiconductor (U.S.) Inc.
SILICON CONTROLLED RECTIFIER WITH REDUCED SUBSTRATE CURRENT	US	Issued	Dec 19, 1997	08994481	Nov 16, 1999	5986290	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR ENHANCED SPEECH QUALITY IN VOICE STORAGE AND RETRIEVAL SYSTEMS	US	Issued	Mar 7, 1995	08399497	Nov 23, 1999	5991725	Microsemi Semiconductor (U.S.) Inc.
IMPLEMENTATION OF A DIGITAL INTERPOLATION FILTER AND METHOD	US	Issued	Nov 14, 1995	08557592	Mar 17, 1998	5729483	Microsemi Semiconductor (U.S.) Inc.
IMPLEMENTATION OF A DIGITAL DECIMATION FILTER AND METHOD	US	Issued	Nov 14, 1995	08557511	May 12, 1998	5751615	Microsemi Semiconductor (U.S.) Inc.
ADAPTIVE ECHO CANCELLATION USED WITH ECHO SUPPRESSION TO REDUCE SHORT AND LONG DURATION ECHOES	US	Issued	Feb 17, 1995	08390320	Dec 22, 1998	5852661	Microsemi Semiconductor (U.S.) Inc.
POWER CROSS DETECTION USING LOOP CURRENT AND VOLTAGE	US	Issued	Apr 10, 1996	08630329	Jun 17, 1997	5640451	Microsemi Semiconductor (U.S.) Inc.
PARALLEL DECIMATOR METHOD AND APPARATUS	US	Issued	Sep 24, 1996	08710321	Jun 29, 1999	5917734	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR ENTERING A TEST MODE OF AN EXTERNALLY NON-PROGRAMMABLE DEVICE	US	Issued	Sep 24, 1996	08710937	May 4, 1999	5900739	Microsemi Semiconductor (U.S.) Inc.
HIGH SWING LOW POWER GENERAL PURPOSE OPERATIONAL AMPLIFIER	US	Issued	Feb 13, 1996	08600843	Sep 8, 1998	5805021	Microsemi Semiconductor (U.S.) Inc.
HIGH SWING LOW POWER OUTPUT STAGE FOR AN OPERATIONAL AMPLIFIER	US	Issued	Feb 13, 1996	08600841	Apr 14, 1998	5739721	Microsemi Semiconductor (U.S.) Inc.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
DTMF DETECTOR SYSTEM AND METHOD WHICH PERFORMS IMPROVED TWIST COMPUTATION AND THRESHOLDING	US	Issued	Jan 18, 1996	08588407	Dec 2, 1997	5694466	Microsemi Semiconductor (U.S.) Inc.
DTMF DETECTOR SYSTEM AND METHOD WHICH PERFORMS FREQUENCY DOMAIN ENERGY CALCULATIONS WITH IMPROVED PERFORMANCE	US	Issued	May 24, 1996	08653283	Sep 15, 1998	5809133	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR DUAL TONE MULTIFREQUENCY DETECTION USING VARIABLE FRAME WIDTHS	US	Issued	Nov 29, 1995	08563973	Jul 1, 1997	5644634	Microsemi Semiconductor (U.S.) Inc.
DTMF DETECTOR SYSTEM AND METHOD WHICH PERFORMS STATIC AND DYNAMIC THRESHOLDING	US	Issued	Jan 11, 1996	08585530	Dec 24, 1996	5588053	Microsemi Semiconductor (U.S.) Inc.
METHOD OF USING AN AUDIO TRANSMISSION SIGNAL TO TRANSMIT VIDEO DATA	US	Issued	Aug 21, 1997	08915667	Dec 28, 1999	6008856	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR ENCODING OF OUTPUT SYMBOL SIZE	US	Issued	Aug 21, 1997	08915690	Aug 22, 2000	6108390	Microsemi Semiconductor (U.S.) Inc.
DSP WITH REGISTER FILE AND MULTI-FUNCTION INSTRUCTION SEQUENCER FOR VECTOR PROCESSING BY MACU	US	Issued	May 6, 1996	08643342	Mar 24, 1998	5732251	Microsemi Semiconductor (U.S.) Inc.
COMBINED ANALOG AND DIGITAL COMMUNICATIONS DEVICE	US	Issued	Aug 13, 1996	08696201	Sep 29, 1998	5815505	Microsemi Semiconductor (U.S.) Inc.
STROBED COMPARATOR FOR A LARGE COMMON MODE RANGE	US	Issued	Jun 21, 1996	08668414	Sep 16, 1997	5668486	Microsemi Semiconductor (U.S.) Inc.
NARROWBAND DIGITAL CORDLESS TELEPHONE	US	Issued	Dec 6, 1996	08760883	Sep 26, 2000	6125139	Microsemi Semiconductor (U.S.) Inc.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
INTEGRATED CIRCUIT RESET INCORPORATING BATTERY MONITOR AND WATCHDOG TIMER/BATTERY MONITOR WITH SOFTWARE TRIM	US	Issued	Jul 6, 1998	09110798	Sep 12, 2000	6118384	Microsemi Semiconductor (U.S.) Inc.
INTEGRATED CIRCUIT RESET INCORPORATING BATTERY MONITOR AND WATCHDOG TIMER/BATTERY MONITOR WITH SOFTWARE TRIM	US	Issued	Aug 1, 1997	08914017	Oct 23, 2001	6307480	Microsemi Semiconductor (U.S.) Inc.
APPARATUS AND METHOD FOR PROTOCOL INTERFACE	US	Issued	Oct 4, 1996	08726268	Nov 2, 1999	5978688	Microsemi Semiconductor (U.S.) Inc.
DSP ARCHITECTURE FOR A FIR-TYPE FILTER AND METHOD	US	Issued	Nov 14, 1995	08555685	Mar 24, 1998	5732004	Microsemi Semiconductor (U.S.) Inc.
DSP ARCHITECTURE FOR A FIR-TYPE FILTER AND METHOD	US	Issued	Aug 29, 1997	08919958	Sep 25, 2001	6295011	Microsemi Semiconductor (U.S.) Inc.
DIGITAL DIRECT CURRENT FEED CONTROL FOR A COMMUNICATION SYSTEM	US	Issued	Aug 21, 1996	08699049	Mar 2, 1999	5878133	Microsemi Semiconductor (U.S.) Inc.
THRESHOLD VOLTAGE LEVEL GENERATOR FOR TIME DIVISION DUPLEX COMMUNICATIONS	US	Issued	May 14, 1997	08856358	May 4, 1999	5900749	Microsemi Semiconductor (U.S.) Inc.
COMMUNICATIONS DEVICE WITH IMPROVED RING SIGNAL DETECTION	US	Issued	Dec 5, 1996	08760818	Aug 18, 1998	5796815	Microsemi Semiconductor (U.S.) Inc.
TELEPHONE CALLING PARTY ANNOUNCEMENT SYSTEM AND METHOD	US	Issued	Sep 24, 1997	08936155	Apr 16, 2002	6373925	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR PERFORMING ECHO CANCELLATION IN A COMMUNICATIONS NETWORK EMPLOYING A MIXED MODE LMS ADAPTIVE BALANCE FILTER	US	Issued	Jan 30, 1996	08594018	Mar 23, 1999	5887059	Microsemi Semiconductor (U.S.) Inc.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
APPARATUS AND METHOD FOR AUTOMATED TESTING OF A PROGRAMMABLE ANALOG GAIN STAGE	US	Issued	Dec 16, 1996	08771337	Jan 19, 1999	5861774	Microsemi Semiconductor (U.S.) Inc.
FIFO AND SYSTEM SYNCHRONIZATION SYSTEM AND METHOD	US	Issued	Sep 4, 1997	08923321	Jun 13, 2000	6075831	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR PERFORMING COMBINED DIGITAL/ANALOG AUTOMATIC GAIN CONTROL FOR IMPROVED CLIPPING SUPPRESSION	US	Issued	Sep 12, 1996	08712773	Nov 24, 1998	5841385	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR PERFORMING AUTOMATIC GAIN CONTROL WITH GAIN SCHEDULING AND ADJUSTMENT AT ZERO CROSSING FOR REDUCING DISTORTION	US	Issued	Sep 12, 1996	08712870	Nov 17, 1998	5838269	Microsemi Semiconductor (U.S.) Inc.
COMMUNICATIONS DEVICE INCLUDING AN IMPROVED CPE ALERTING SIGNAL (CAS) DETECTION SYSTEM	US	Issued	Apr 20, 1998	09062894	Jul 31, 2001	6269160	Microsemi Semiconductor (U.S.) Inc.
COMPUTER SYSTEM AND METHOD FOR GENERATING DELAY-BASED AUDIO EFFECTS IN A WAVETABLE MUSIC SYNTHESIZER WHICH STORES WAVETABLE DATA IN SYSTEM MEMORY	US	Issued	Mar 25, 1996	08623850	Sep 15, 1998	5809342	Microsemi Semiconductor (U.S.) Inc.
Computer System and Method for Performing Wavetable Music Synthesis which Stores Wavetable Data in System Memory Employing a High Priority I/O BUS Request Mechanism for Improved Audio Fidelity	US	Issued	Mar 25, 1996	08622472	Feb 10, 1998	5717154	Microsemi Semiconductor (U.S.) Inc.



Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
COMPUTER SYSTEM AND METHOD FOR PERFORMING WAVETABLE MUSIC SYNTHESIS WHICH STORES WAVETABLE DATA IN SYSTEM MEMORY WHICH MINIMIZES AUDIO INFIDELITY DUE TO WAVETABLE DATA ACCESS LATENCY	US	Issued	Mar 25, 1996	08622761	Nov 18, 1997	5689080	Microsemi Semiconductor (U.S.) Inc.
APPARATUS FOR PREVENTING ACCIDENTAL OR INTENTIONAL FUSE BLOWING	US	Issued	May 31, 1996	08652640	Mar 24, 1998	5731760	Microsemi Semiconductor (U.S.) Inc.
HIGH PERFORMANCE ECHO CANCELLER FOR HIGH SPEED MODEM	US	Issued	Oct 28, 1996	08739009	Aug 4, 1998	5790658	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR PERFORMING SOFTWARE PATCHES IN EMBEDDED SYSTEMS	US	Issued	Dec 5, 1996	08759611	May 4, 1999	5901225	Microsemi Semiconductor (U.S.) Inc.
CIRCUIT FOR SETTING A DEVICE INTO A TEST MODE BY CHANGING A FIRST PORT TO A FIXED CLOCK AND A SECOND PORT TO A NON-FIXED CLOCK	US	Issued	Jul 1, 1996	08675297	Nov 9, 1999	5982815	Microsemi Semiconductor (U.S.) Inc.
CONFIGURABLE DIGITAL WIRELESS AND WIRED COMMUNICATIONS SYSTEM ARCHITECTURE FOR IMPLEMENTING BASEBAND FUNCTIONALITY	US	Issued	Sep 25, 1996	08719799	Aug 4, 1998	5790817	Microsemi Semiconductor (U.S.) Inc.
MULTIPOINT ACCESS PROTOCOL UTILIZING A POINT-TO-POINT METHODOLOGY	US	Issued	Mar 19, 1997	08820526	Jan 4, 2000	6011781	Microsemi Semiconductor (U.S.) Inc.
ELECTRONIC SYSTEM HAVING A MULTISTAGE LOW NOISE OUTPUT BUFFER SYSTEM	US	Issued	Aug 26, 1997	08919126	Mar 14, 2000	6037810	Microsemi Semiconductor (U.S.) Inc.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
MONITORING LINE CONDITIONS IN THE DATA TRANSMISSION MODE	US	Issued	May 9, 1997	08853300	Apr 16, 2002	6374375	Microsemi Semiconductor (U.S.) Inc.
INTERMEDIATE FREQUENCY GAIN STAGE WITH RECTIFIER	US	Issued	Jan 8, 1997	08780691	Apr 6, 1999	5893028	Microsemi Semiconductor (U.S.) Inc.
DIRECT CURRENT FEED WITH LINE STATUS CHANGE ADAPTATION IN A COMMUNICATION SYSTEM	US	Issued	Jun 6, 1997	08870895	Jul 20, 1999	5926544	Microsemi Semiconductor (U.S.) Inc.
SILENT POLARITY REVERSAL IN A COMMUNICATION SYSTEM	US	Issued	Jun 6, 1997	08870894	Oct 19, 1999	5970099	Microsemi Semiconductor (U.S.) Inc.
RING TRIP DETECTION IN A COMMUNICATION SYSTEM	US	Issued	Jun 6, 1997	08870893	Apr 17, 2001	6219417	Microsemi Semiconductor (U.S.) Inc.
SWITCH HOOK STATUS DETERMINATION IN A COMMUNICATION SYSTEM	US	Issued	Jun 6, 1997	08870892	Jan 23, 2001	6178241	Microsemi Semiconductor (U.S.) Inc.
DETECTION OF TONAL SIGNALS	US	Issued	Jan 20, 1998	09008967	Oct 19, 1999	5970447	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR BIT INTERLEAVING OF FULL-RATE SPEECH DATA	US	Issued	Jun 12, 1997	08873625	Aug 8, 2000	6101465	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR BIT INTERLEAVING OF FULL-RATE SPEECH DATA	US	Issued	May 26, 2000	09580654	Nov 27, 2001	6324504	Microsemi Semiconductor (U.S.) Inc.
HIGH SPEED ANALOG FLIP-FLOP WITH EMBEDDED LOGIC AND PHASE-LOCKED-LOOP CIRCUIT EMPLOYING THE SAME	US	Issued	Feb 26, 1997	08806289	Oct 6, 1998	5818293	Microsemi Semiconductor (U.S.) Inc.
INTEGRATED CIRCUIT HAVING A PROGRAMMABLE INPUT/OUTPUT PROCESSOR THAT IS USED FOR INCREASING THE FLEXIBILITY OF COMMUNICATIONS	US	Issued	Sep 4, 1998	09148103	Apr 17, 2001	6219824	Microsemi Semiconductor (U.S.) Inc.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
SYSTEM AND METHOD FOR DETECTING FLOATING NODES WITHIN A SIMULATED INTEGRATEDCIRCUIT	US	Issued	Mar 31, 2000	09540191	Sep 4, 2001	6285975	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR PROVIDING FDD AND TDD MODES OF OPERATION FOR A WIRELESS COMMUNICATIONS DEVICE	US	Issued	May 15, 1997	08856541	Nov 16, 1999	5987010	Microsemi Semiconductor (U.S.) Inc.
COMMUNICATIONS SYSTEM WITH MULTIPLE, SIMULTANEOUS ACCESSES TO A MEMORY	US	Issued	Dec 1, 1997	08980579	Feb 16, 1999	5872993	Microsemi Semiconductor (U.S.) Inc.
STONE DETECTOR WITH NOISE DETECTION AND DYNAMIC THRESHOLDING FOR ROBUST PERFORMANCE	US	Issued	Mar 22, 2004	10805917	Apr 4, 2006	7024357	Microsemi Semiconductor (U.S.) Inc.
APPARATUS AND METHOD TO REDUCE POWER AMPLIFIER NOISE GENERATION IN A MULTIPLEXED COMMUNICATION SYSTEM	US	Issued	Dec 16, 1998	09212744	Jun 11, 2002	6404824	Microsemi Semiconductor (U.S.) Inc.
METHOD AND SYSTEM FOR IMPROVED DETECTION OF ANALOG SIGNALS	US	Issued	Sep 25, 1998	09160485	Apr 9, 2002	6370555	Microsemi Semiconductor (U.S.) Inc.
SYSTEM AND METHOD FOR IDENTIFYING AND ANNOUNCING A CALLER AND A CALLEE OF AN INCOMING TELEPHONE CALL	US	Issued	Nov 13, 1997	08969780	May 7, 2002	6385303	Microsemi Semiconductor (U.S.) Inc.
METHOD AND SYSTEM TO METER AND CONTROL USAGE OF TELEPHONE SYSTEMS	US	Issued	Mar 17, 1999	09270707	Jun 12, 2001	6246756	Microsemi Semiconductor (U.S.) Inc.
A COMMUNICATIONS SYSTEM WITH A CONFIGURABLE DATA TRANSFER ARCHITECTURE	US	Issued	Dec 1, 1997	08980578	Jan 4, 2000	6012136	Microsemi Semiconductor (U.S.) Inc.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
CONFIGURING A COMMUNICATIONS SYSTEM WITH A CONFIGURABLE DATA TRANSFER ARCHITECTURE	US	Issued	Dec 1, 1997	08980580	Feb 22, 2000	6029239	Microsemi Semiconductor (U.S.) Inc.
LATERAL BIPOLAR JUNCTION TRANSISTOR WITH REDUCED PARASITIC CURRENT LOSS	US	Issued	May 3, 2000	09563979	Apr 16, 2002	6372595	Microsemi Semiconductor (U.S.) Inc.
HIGH CONVERSION GAIN CMOS MIXER	US	Issued	Mar 14, 1996	08615734	Jun 16, 1998	5768700	Microsemi Semiconductor (U.S.) Inc.
DIFFERENTIAL CMOS CURRENT AMPLIFIER WITH CONTROLLED BANDWIDTH AND COMMON MODE DISTORTION	US	Issued	Feb 6, 1996	08595870	May 13, 1997	5629641	Microsemi Semiconductor (U.S.) Inc.
TRANSISTOR RATIO CONTROLLED CMOS TRANSMISSION LINE EQUALIZER	US	Issued	Sep 3, 1996	08706885	Sep 8, 1998	5805031	Microsemi Semiconductor (U.S.) Inc.
SIGNAL DETECTION CIRCUIT USING A PLURALITY OF DELAY STAGES WITH EDGE DETECTION LOGIC	US	Issued	Nov 19, 1997	08974672	Aug 24, 1999	5942937	Microsemi Semiconductor (U.S.) Inc.
DIGITAL COMMUNICATIONS USING SERIALIZED DELAY LINES	US	Issued	Nov 17, 1997	08972227	Feb 29, 2000	6031473	Microsemi Semiconductor (U.S.) Inc.
CIRCUIT AND METHODOLOGY FOR TRANSFERRING SIGNALS BETWEEN SEMICONDUCTOR DEVICES	US	Issued	Nov 3, 1997	08962667	Feb 20, 2001	6192069	Microsemi Semiconductor (U.S.) Inc.
CABLE LENGTH ESTIMATION CIRCUIT USING DATA SIGNAL EDGE RATE DETECTION AND ANALOG TO DIGITAL CONVERSION	US	Issued	Jun 10, 1997	08872272	Oct 6, 1998	5818378	Microsemi Semiconductor (U.S.) Inc.
APPARATUS AND METHOD FOR DECODING DIFFERENTIAL MULTI-LEVEL DATA WITH ADAPTIVE THRESHOLD CONTROL	US	Issued	Mar 25, 1998	09047439	Oct 19, 1999	5969646	Microsemi Semiconductor (U.S.) Inc.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
DIFFERENTIAL ENCODING ARRANGEMENT FOR A DISCRETE MULTI-TONE TRANSMISSION SYSTEM	US	Issued	Apr 7, 1999	09286989	Aug 13, 2002	6434188	Microsemi Semiconductor (U.S.) Inc.
COLLISION HANDLING SCHEME FOR DISCRETE MULTI-TONE DATA COMMUNICATIONS NETWORK	US	Issued	Apr 7, 1999	09286987	Jan 15, 2002	6339599	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR ACHIEVING FREQUENCY DIVERSITY BY USE OF MULTIPLE IMAGES	US	Issued	Apr 7, 1999	09286992	Sep 24, 2002	6456602	Microsemi Semiconductor (U.S.) Inc.
METHOD AND APPARATUS FOR FREQUENCY SHIFTING WITH A CLOCK SIGNAL	US	Issued	Apr 7, 1999	09286993	Sep 10, 2002	6449262	Microsemi Semiconductor (U.S.) Inc.
METHODS AND APPARATUS FOR CHANNEL ADAPTATION IN A DMT BASED SYSTEM	US	Issued	Apr 7, 1999	09286996	Jun 10, 2003	6577598	Microsemi Semiconductor (U.S.) Inc.
METHOD FOR DETERMINING A DECIMATION PATTERN IN A NETWORK COMMUNICATIONS RECEIVER	US	Issued	Feb 23, 2000	09510775	Nov 18, 2003	6651078	Microsemi Semiconductor (U.S.) Inc.
AMPLIFIER CIRCUIT WITH REGENERATIVE BIASING	US	Issued	Nov 19, 2001	10001274	Dec 2, 2003	6657496	Microsemi Semiconductor (U.S.) Inc.
FREQUENCY DEPENDENT IMPEDANCE SYNTHESIS FOR DSL INTERFACE CIRCUITS	US	Issued	Dec 13, 2001	10017883	Jan 11, 2005	6842518	Microsemi Semiconductor (U.S.) Inc.
CAPACITOR CANCELLATION METHOD AND APPARATUS	US	Issued	Dec 13, 2001	10020379	Sep 6, 2005	6940969	Microsemi Semiconductor (U.S.) Inc.
RETURNING RINGING SIGNALS THROUGH THE TIP AMPLIFIER OF SUBSCRIBER-LINE INTERFACE CIRCUITRY	US	Issued	Aug 22, 2003	10646624	Aug 2, 2005	6925178	Microsemi Semiconductor (U.S.) Inc.
SELF-MONITORING LINE INTERFACE CIRCUIT	US	Issued	Aug 7, 1996	08693428	Mar 9, 1999	5881129	Microsemi Semiconductor (U.S.) Inc.
DUAL VOLTAGE, SELF-MONITORING LINE CIRCUIT	US	Issued	Aug 7, 1996	08693426	Dec 29, 1998	5854839	Microsemi Semiconductor (U.S.) Inc.
VOLTAGE SENSING CURRENT FOLDBACK SWITCH CIRCUIT	US	Issued	Sep 29, 1998	09162662	Jan 2, 2001	6169425	Microsemi Semiconductor (U.S.) Inc.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
LOW OPERATING POWER, HIGH VOLTAGE RINGING SWITCH CIRCUIT	US	Issued	Aug 22, 2000	09643253	Dec 25, 2001	6333664	Microsemi Semiconductor (U.S.) Inc.
Method and Apparatus for Metallic Line Testing of a Subscriber Line	US	Issued	Nov 3, 2008	12263628	Sep 4, 2012	8259908	Microsemi Semiconductor (U.S.) Inc.
Method and Apparatus for Controlling Ringing Voltage	US	Issued	Aug 7, 2009	12537914	Feb 19, 2013	8379839	Microsemi Semiconductor (U.S.) Inc.
Method and Apparatus for Battery Switching During Ringing	US	Issued	Aug 7, 2009	12537937	Jan 29, 2013	8363822	Microsemi Semiconductor (U.S.) Inc.
Method and Apparatus for Detecting Ring Trip Precursors	US	Issued	Aug 7, 2009	12537926	Dec 4, 2012	8325908	Microsemi Semiconductor (U.S.) Inc.
Method and Apparatus for Shared Positive Protection	US	Issued	Aug 31, 2009	12550782	May 14, 2013	8442213	Microsemi Semiconductor (U.S.) Inc.
Overvoltage Protection with Power Sink	US	Issued	Aug 31, 2009	12550816	Mar 26, 2013	8406417	Microsemi Semiconductor (U.S.) Inc.
Method and Apparatus for Dynamically Scheduling Ringing Signals	US	Issued	Oct 9, 2009	12576941	Mar 26, 2013	8406414	Microsemi Semiconductor (U.S.) Inc.
Shared Protection Scheme for Multiple Variable Batteries	US	Issued	Sep 20, 2010	12885906	Apr 22, 2014	8705728	Microsemi Semiconductor (U.S.) Inc.
ON-CHIP PULSE GENERATOR FOR DETECTING FAULTS IN AN FPGA	US	Issued	Jul 2, 2013	13933332	Apr 7, 2015	9000807	Microsemi SoC Corp.
ON-CHIP PROBE CIRCUIT FOR DETECTING FAULTS IN AN FPGA	US	Issued	Jul 2, 2013	13933353	Aug 11, 2015	9103880	Microsemi SoC Corp.
DEDICATED INTERFACE ARCHITECTURE FOR A HYBRID INTEGRATED CIRCUIT	US	Issued	Apr 28, 1998	09069054	Jun 17, 2008	7389487	Microsemi SoC Corp.
DEDICATED INTERFACE ARCHITECTURE FOR A HYBRID INTEGRATED CIRCUIT	US	Issued	May 2, 2008	12114143	Mar 24, 2015	8990757	Microsemi SoC Corp.
Apparatus and Methods for a Tamper Resistant Bus for Secure Lock Bit Transfer	US	Issued	Apr 19, 2012	13450765	Aug 12, 2014	8803548	Microsemi SoC Corp.
BLOCK RAM DESIGNED FOR EFFICIENT GANGING	US	Issued	Oct 31, 2011	13285210	Oct 21, 2014	8868820	Microsemi SoC Corp.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
Non-Volatile Memory Array Architecture Optimized for Hi-Reliability and Commercial Market	US	Issued	Mar 9, 2012	13416192	Oct 29, 2013	8570819	Microsemi SoC Corp.
Auto-Retresh Method for Sonos Non-Volatile Memory Array	US	Issued	Aug 29, 2013	14013339	Oct 13, 2015	9159428	Microsemi SoC Corp.
TID Hardened and Single-Even Transient Single-Event Latchup Resistant MOS Transistors and Fabrication Process	US	Issued	Mar 4, 2014	14196667	Jul 28, 2015	9093517	Microsemi SoC Corp.
METHOD FOR EFFICIENT FPGA PACKING	US	Issued	Jul 10, 2014	14327842	Sep 29, 2015	9147025	Microsemi SoC Corp.
SONOS FPGA ARCHITECTURE HAVING FAST DATA ERASE AND DISABLE FEATURE	US	Issued	Sep 10, 2014	14481943	Aug 11, 2015	9106232	Microsemi SoC Corp.
Serial data transmitters	US	Issued	Feb 5, 2002	10068593	Apr 11, 2006	7027455	Zarlink Semiconductor (V.N.) Inc.
TURN ARCHITECTURE FOR ROUTING RESOURCES IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Aug 22, 2007	11843575	Aug 25, 2009	7579868	Microsemi SoC Corp.
BLOCK SYMMETRIZATION IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Mar 6, 2000	09518974	Jul 31, 2001	6268743	Microsemi SoC Corp.
ENHANCED FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Sep 25, 2000	09819084	Sep 14, 2004	6791353	Microsemi SoC Corp.
ENHANCED FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Aug 10, 2004	10916214	Jun 3, 2008	7382155	Microsemi SoC Corp.
ENHANCED FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Apr 29, 2008	12111660	Jul 13, 2010	7755386	Microsemi SoC Corp.
ENHANCED FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Jun 4, 2010	12794279	Jul 12, 2011	7977970	Microsemi SoC Corp.
ENHANCED FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Jun 10, 2011	13158019	Sep 4, 2012	8258811	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
SRAM BUS ARCHITECTURE AND INTERCONNECT TO AN FPGA	US	Issued	Apr 4, 2003	10406860	Sep 28, 2004	6799240	Microsemi SoC Corp.
SRAM BUS ARCHITECTURE AND INTERCONNECT TO AN FPGA	US	Issued	Mar 16, 2004	10802577	May 30, 2006	7054967	Microsemi SoC Corp.
SRAM BUS ARCHITECTURE AND INTERCONNECT TO AN FPGA	US	Issued	Mar 20, 2007	11688688	Oct 28, 2008	7444456	Microsemi SoC Corp.
EMBEDDED STATIC RANDOM ACCESS MEMORY FOR FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Feb 23, 2000	09513248	Aug 6, 2002	6430088	Microsemi SoC Corp.
FIELD PROGRAMMABLE GATE ARRAY AND MICROCONTROLLER SYSTEM-ON-A-CHIP	US	Issued	Sep 2, 2000	09654237	Jun 15, 2004	6751723	Microsemi SoC Corp.
FIELD PROGRAMMABLE GATE ARRAY AND MICROCONTROLLER SYSTEM-ON-A-CHIP	US	Issued	Apr 8, 2004	10821533	Jun 27, 2006	7069419	Microsemi SoC Corp.
FIELD PROGRAMMABLE GATE ARRAY AND MICROCONTROLLER SYSTEM-ON-A-CHIP	US	Issued	Jul 22, 2005	11187068	Apr 7, 2009	7516303	Microsemi SoC Corp.
FIELD PROGRAMMABLE GATE ARRAY AND MICROCONTROLLER SYSTEM-ON-A-CHIP	US	Issued	Dec 29, 2008	12345409	Feb 8, 2011	7886130	Microsemi SoC Corp.
PROGRAMMING CIRCUITRY FOR CONFIGURABLE FPGA I/O	US	Issued	Dec 21, 2000	09748745	Jan 13, 2004	6678848	Microsemi SoC Corp.
DEGLITCHING CIRCUITS FOR A STATIC RANDOM ACCESS MEMORY BASED PROGRAMMABLE ARCHITECTURE	US	Issued	Aug 6, 2003	10636346	Jan 24, 2006	6990010	Microsemi SoC Corp.



Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
DEGLITCHING CIRCUITS FOR A RADIATION-HARDENED STATIC RANDOM ACCESS MEMORY BASED PROGRAMMABLE ARCHITECTURE	US	Issued	Dec 30, 2005	11323417	Oct 24, 2006	7126842	Microsemi SoC Corp.
DEGLITCHING CIRCUITS FOR A RADIATION-HARDENED STATIC RANDOM ACCESS MEMORY BASED PROGRAMMABLE ARCHITECTURE	US	Issued	Jul 14, 2008	12172860	Mar 2, 2010	7672153	Microsemi SoC Corp.
APPARATUS AND METHOD OF ERROR DETECTION AND CORRECTION IN A RADIATION-HARDENED STATIC RANDOM ACCESS MEMORY FIELD-PROGRAMMABLE GATE ARRAY	US	Issued	Dec 30, 2002	10335234	Jan 4, 2005	6838899	Microsemi SoC Corp.
APPARATUS AND METHOD OF ERROR DETECTION AND CORRECTION IN A RADIATION-HARDENED STATIC RANDOM ACCESS MEMORY FIELD-PROGRAMMABLE GATE ARRAY	US	Issued	Dec 28, 2006	11617559	Oct 30, 2007	7288957	Microsemi SoC Corp.
APPARATUS AND METHOD OF ERROR DETECTION AND CORRECTION IN A RADIATION-HARDENED STATIC RANDOM ACCESS MEMORY FIELD-PROGRAMMABLE GATE ARRAY	US	Issued	Sep 21, 2007	11859497	Oct 28, 2008	7443191	Microsemi SoC Corp.
RADIATION TOLERANT FLASH FPGA	US	Issued	Dec 14, 2000	09737643	Nov 27, 2001	6324102	Microsemi SoC Corp.
FLASH BASED CONTROL FOR FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Dec 21, 2000	09748648	Mar 12, 2002	6356478	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
METAL-TO-METAL ANTI-FUSE EMPLOYING CARBON-CONTAINING ANTI-FUSE MATERIAL	US	Issued	Apr 1, 2003	10405860	Jul 27, 2004	6767769	Microsemi SoC Corp.
METAL-TO-METAL ANTI-FUSE STRUCTURE AND FABRICATION METHOD	US	Issued	Dec 14, 2000	09737642	Oct 26, 2004	6809398	Microsemi SoC Corp.
CYCLIC REDUNDANCY CHECKING OF A FIELD PROGRAMMABLE GATE ARRAY HAVING A SRAM MEMORY ARCHITECTURE	US	Issued	Dec 11, 2000	09734784	May 6, 2003	6560743	Microsemi SoC Corp.
CYCLIC REDUNDANCY CHECKING OF A FIELD PROGRAMMABLE GATE ARRAY HAVING A SRAM MEMORY ARCHITECTURE	US	Issued	Jan 22, 2003	10351099	Aug 3, 2004	6772387	Microsemi SoC Corp.
CYCLIC REDUNDANCY CHECKING OF A FIELD PROGRAMMABLE GATE ARRAY HAVING A SRAM MEMORY ARCHITECTURE	US	Issued	Oct 17, 2006	11550336	Jun 2, 2009	7543216	Microsemi SoC Corp.
ROUTING STRUCTURES FOR A TILEABLE FIELD-PROGRAMMABLE GATE ARRAY ARCHITECTURE	US	Issued	Feb 15, 2002	10077190	May 4, 2004	6731133	Microsemi SoC Corp.
TILEABLE FIELD-PROGRAMMABLE GATE ARRAY ARCHITECTURE	US	Issued	Jan 30, 2002	10066398	Mar 2, 2004	6700404	Microsemi SoC Corp.
TILEABLE FIELD-PROGRAMMABLE GATE ARRAY ARCHITECTURE	US	Issued	Apr 30, 2003	10429002	May 3, 2005	6888375	Microsemi SoC Corp.
TILEABLE FIELD-PROGRAMMABLE GATE ARRAY ARCHITECTURE	US	Issued	Feb 11, 2005	11056957	Mar 21, 2006	7015719	Microsemi SoC Corp.
TILEABLE FIELD-PROGRAMMABLE GATE ARRAY ARCHITECTURE	US	Issued	Apr 30, 2003	10429004	Mar 22, 2005	6870396	Microsemi SoC Corp.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
A BUILT-IN-SELF-TEST METHOD FOR ROUTING TRACKS OF FPGA	US	Issued	Jan 30, 2002	10066539	Sep 16, 2008	7426665	Microsemi SoC Corp.
REUSE OF BODY SCAN CHAIN FOR USER LOGIC SCAN CHAIN	US	Issued	Feb 7, 2002	10071262	Nov 22, 2005	6968487	Microsemi SoC Corp.
PROGRAMMABLE MULTI-STANDARD I/O ARCHITECTURE FOR FPGAS	US	Issued	Dec 31, 1998	09224929	Jun 5, 2001	6242943	Microsemi SoC Corp.
PROGRAMMABLE MULTI-STANDARD I/O ARCHITECTURE FOR FPGAS	US	Issued	Dec 13, 2001	10024661	Jul 13, 2004	6762621	Microsemi SoC Corp.
PROGRAMMABLE MULTI-STANDARD I/O ARCHITECTURE FOR FPGAS	US	Issued	Dec 18, 2000	09738508	May 21, 2002	6392437	Microsemi SoC Corp.
PROGRAMMABLE MULTI-STANDARD I/O ARCHITECTURE FOR FPGAS	US	Issued	Sep 17, 2002	10246094	Jun 21, 2005	6909306	Microsemi SoC Corp.
TILABLE FIELD-PROGRAMMABLE GATE ARRAY ARCHITECTURE	US	Issued	Jan 31, 2002	10061951	Jun 1, 2004	6744278	Microsemi SoC Corp.
AN APPARATUS FOR INTERFACING AND TESTING A PHASE LOCKED LOOP IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Sep 3, 2002	10235245	Oct 7, 2008	7434080	Microsemi SoC Corp.
AN APPARATUS FOR INTERFACING AND TESTING A PHASE LOCKED LOOP IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Aug 26, 2008	12198249	Aug 10, 2010	7774665	Microsemi SoC Corp.
CLOCK TREE NETWORK IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	May 28, 2003	10448258	Nov 30, 2004	6825690	Microsemi SoC Corp.
CLOCK TREE NETWORK IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Aug 11, 2004	10916926	May 23, 2006	7049846	Microsemi SoC Corp.
CLOCK TREE NETWORK IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Apr 18, 2008	12105524	Jun 9, 2009	7545168	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
PARALLEL PROGRAMMABLE ANTIFUSE FIELD PROGRAMMABLE GATE ARRAY DEVICE (FPGA) AND A METHOD FOR PROGRAMMING AND TESTING AN ANTIFUSE FPGA	US	Issued	Oct 8, 2002	10267917	Apr 26, 2005	6885218	Microsemi SoC Corp.
PARALLEL PROGRAMMABLE ANTIFUSE FIELD PROGRAMMABLE GATE ARRAY DEVICE (FPGA) AND A METHOD FOR PROGRAMMING AND TESTING AN ANTIFUSE FPGA	US	Issued	Aug 13, 2007	11837700	Jun 16, 2009	7549138	Microsemi SoC Corp.
A REPEATABLE BLOCK PRODUCING A NON-UNIFORM ROUTING ARCHITECTURE IN A FIELD PROGRAMMABLE GATE ARRAY HAVING SEGMENTED TRACKS	US	Issued	Dec 27, 2002	10330672	May 10, 2005	6891396	Microsemi SoC Corp.
A REPEATABLE BLOCK PRODUCING A NON-UNIFORM ROUTING ARCHITECTURE IN A FIELD PROGRAMMABLE GATE ARRAY HAVING SEGMENTED TRACKS	US	Issued	Jun 2, 2008	12131258	Aug 25, 2009	7579869	Microsemi SoC Corp.
MULTI-LEVEL ROUTING ARCHITECTURE IN A FIELD PROGRAMMABLE GATE ARRAY HAVING TRANSMITTERS AND RECEIVERS	US	Issued	Dec 18, 2002	10323613	Sep 20, 2005	6946871	Microsemi SoC Corp.
MULTI-LEVEL ROUTING ARCHITECTURE IN A FIELD PROGRAMMABLE GATE ARRAY HAVING TRANSMITTERS AND RECEIVERS	US	Issued	Sep 13, 2006	11531375	Oct 7, 2008	7432733	Microsemi SoC Corp.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
A CARRY CHAIN FOR USE BETWEEN LOGIC MODULES IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Oct 2, 2002	10264288	Jun 15, 2004	6750674	Microsemi SoC Corp.
METHOD AND APPARATUS FOR A FLEXIBLE CHARGE/PUMP THEME FOR FPGAS	US	Issued	May 9, 2002	10143721	Aug 10, 2004	6774667	Microsemi SoC Corp.
DEDICATED INPUT/OUTPUT FIRST IN/FIRST OUT MODULE FOR A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	May 30, 2003	10452764	Mar 15, 2005	6867615	Microsemi SoC Corp.
DEDICATED INPUT/OUTPUT FIRST IN/FIRST OUT MODULE FOR A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Feb 11, 2005	11056983	Dec 27, 2005	6980028	Microsemi SoC Corp.
A FIELD-PROGRAMMABLE GATE ARRAY LOW VOLTAGE DIFFERENTIAL SIGNALING DRIVER UTILIZING TWO COMPLIMENTARY OUTPUT BUFFERS	US	Issued	Jun 4, 2002	10163096	May 10, 2005	6891394	Microsemi SoC Corp.
A FIELD-PROGRAMMABLE GATE ARRAY LOW VOLTAGE DIFFERENTIAL SIGNALING DRIVER UTILIZING TWO COMPLIMENTARY OUTPUT BUFFERS	US	Issued	May 5, 2005	11123734	Oct 10, 2006	7119573	Microsemi SoC Corp.
A FIELD-PROGRAMMABLE GATE ARRAY LOW VOLTAGE DIFFERENTIAL SIGNALING DRIVER UTILIZING TWO COMPLIMENTARY OUTPUT BUFFERS	US	Issued	Apr 25, 2008	12109487	Jun 9, 2009	7545166	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
A FIELD PROGRAMMABLE GATE ARRAY ARCHITECTURE INCLUDING A BUFFER MODULE AND METHOD OF DISTRIBUTING BUFFER MODULES IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Nov 12, 2002	10293895	Apr 27, 2004	6727726	Microsemi SoC Corp.
METHOD AND APPARATUS FOR BOOTSTRAPPING A PROGRAMMABLE ANTIFUSE CIRCUIT	US	Issued	Aug 8, 2002	10216332	Jul 20, 2004	6765427	Microsemi SoC Corp.
SYNCHRONOUS FIRST-IN/FIRST-OUT BLOCK MEMORY FOR A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	May 28, 2003	10448259	Jan 4, 2005	6838902	Microsemi SoC Corp.
SYNCHRONOUS FIRST-IN/FIRST-OUT BLOCK MEMORY FOR A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Sep 22, 2004	10948010	Dec 27, 2005	6980027	Microsemi SoC Corp.
SYNCHRONOUS FIRST-IN/FIRST-OUT BLOCK MEMORY FOR A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Apr 18, 2007	11737030	Jul 1, 2008	7394289	Microsemi SoC Corp.
APPARATUS AND METHOD FOR INITIALIZING AN INTEGRATED CIRCUIT DEVICE AND ACTIVATING A FUNCTION OF THE DEVICE ONCE AN INPUT POWER SUPPLY HAS REACHED A THRESHOLD VOLTAGE	US	Issued	Dec 11, 2002	10318281	Dec 18, 2007	7310760	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
APPARATUS AND METHOD FOR INITIALIZING AN INTEGRATED CIRCUIT DEVICE AND ACTIVATING A FUNCTION OF THE DEVICE ONCE AN INPUT POWER SUPPLY HAS REACHED A THRESHOLD VOLTAGE	US	Issued	Aug 24, 2007	11844569	Mar 2, 2010	7673194	Microsemi SoC Corp.
APPARATUS AND METHOD FOR INITIALIZING AN INTEGRATED CIRCUIT DEVICE AND ACTIVATING A FUNCTION OF THE DEVICE ONCE AN INPUT POWER SUPPLY HAS REACHED A THRESHOLD VOLTAGE	US	Issued	Aug 24, 2007	11844581	Sep 16, 2008	7426667	Microsemi SoC Corp.
FIELD-PROGRAMMABLE GATE ARRAY ARCHITECTURE	US	Issued	Dec 30, 2002	10334339	Aug 10, 2004	6774672	Microsemi SoC Corp.
FIELD-PROGRAMMABLE GATE ARRAY FREEWAY ARCHITECTURE	US	Issued	Dec 30, 2002	10334338	Aug 10, 2004	6774669	Microsemi SoC Corp.
INTRA-TILE BUFFER SYSTEM FOR A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Dec 30, 2002	10334340	Aug 10, 2004	6774670	Microsemi SoC Corp.
INTER-TILE BUFFER SYSTEM FOR A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Dec 30, 2002	10334393	Oct 5, 2004	6800884	Microsemi SoC Corp.
METHOD AND APPARATUS FOR STORING A VALIDATION NUMBER IN A FIELD-PROGRAMMABLE ARRAY	US	Issued	Apr 2, 1999	09285563	Sep 3, 2002	6446242	Microsemi SoC Corp.
INTEGRATED CIRCUIT THAT INCLUDES A FIELD-PROGRAMMABLE GATE ARRAY AND A HARD GATE ARRAY HAVING THE SAME UNDERLYING STRUCTURE	US	Issued	May 25, 1999	09318198	Apr 3, 2001	6211697	Microsemi SoC Corp.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
ENCRYPTION FOR A STREAM FILE IN AN FPGA INTEGRATED CIRCUIT	US	Issued	Sep 13, 2001	09953580	Jul 7, 2009	7558967	Actel Corporation
THREE INPUT FIELD PROGRAMMABLE GATE ARRAY LOGIC CIRCUIT CONFIGURABLE AS A THREE INPUT LOOK UP TABLE, A D-LATCH OR A D FLIP-FLOP	US	Issued	May 1, 2002	10137729	Aug 17, 2004	6777977	Microsemi SoC Corp.
THREE INPUT FIELD PROGRAMMABLE GATE ARRAY LOGIC CIRCUIT CONFIGURABLE AS A THREE INPUT LOOK UP TABLE, A D-LATCH OR A D FLIP-FLOP	US	Issued	Mar 11, 2008	12046160	Jan 13, 2009	7477071	Microsemi SoC Corp.
BLOCK CONNECTOR SPLITTING IN LOGIC BLOCK OF A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Jun 12, 2001	09880679	Sep 23, 2003	6624657	Microsemi SoC Corp.
BLOCK CONNECTOR SPLITTING IN LOGIC BLOCK OF A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Jun 26, 2003	10608454	Jan 4, 2005	6838903	Microsemi SoC Corp.
BLOCK SYMMETRIZATION IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Jun 12, 2001	09880629	Jan 20, 2004	6680624	Microsemi SoC Corp.
BLOCK SYMMETRIZATION IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Sep 24, 2003	10670883	Mar 1, 2005	6861869	Microsemi SoC Corp.
BLOCK SYMMETRIZATION IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	May 15, 2007	11748865	Jun 10, 2008	7385421	Microsemi SoC Corp.
BLOCK SYMMETRIZATION IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	May 30, 2008	12130876	Jul 7, 2009	7557612	Microsemi SoC Corp.
MEMORY CLEAR METHOD AND APPARATUS WITH MONITORING MEMORY CELLS	US	Issued	Feb 15, 2002	10077188	Mar 11, 2003	6531891	Microsemi SoC Corp.



Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
MEMORY CLEAR METHOD AND APPARATUS WITH MONITORING MEMORY CELLS	US	Issued	Apr 21, 2004	10829596	Aug 30, 2005	6937063	Microsemi SoC Corp.
MEMORY CLEAR METHOD AND APPARATUS WITH MONITORING MEMORY CELLS	US	Issued	Oct 24, 2006	11552482	Jan 27, 2009	7482835	Microsemi SoC Corp.
AN AMORPHOUS CARBON METAL-TO-METAL ANTIFUSE WITH ADHESION PROMOTING LAYERS	US	Issued	Dec 27, 2002	10331144	Nov 15, 2005	6965156	Microsemi SoC Corp.
PROGRAMMING METHODS FOR AN AMORPHOUS CARBON METAL-TO-METAL ANTIFUSE	US	Issued	Dec 20, 2002	10327675	Apr 27, 2004	6728126	Microsemi SoC Corp.
RADIATION TOLERANT SRAM BIT	US	Issued	Jan 5, 2004	10752222	Mar 20, 2007	7193885	Microsemi SoC Corp.
RADIATION TOLERANT SRAM BIT	US	Issued	Mar 10, 2008	12045424	Feb 3, 2009	7486538	Microsemi SoC Corp.
RADIATION TOLERANT SRAM BIT	US	Issued	Dec 29, 2008	12345388	Aug 3, 2010	7768810	Microsemi SoC Corp.
LOW-CAPACITANCE INPUT/OUTPUT AND ESD PROTECTION CIRCUIT	US	Issued	Jul 11, 2003	10619172	Mar 28, 2006	7019368	Microsemi SoC Corp.
LOW-CAPACITANCE INPUT/OUTPUT AND ESD PROTECTION CIRCUIT	US	Issued	Feb 21, 2007	11677441	Jan 27, 2009	7482218	Microsemi SoC Corp.
TRANSISTOR HAVING FULLY-DEPLETED JUNCTIONS TO REDUCE CAPACITANCE AND INCREASE RADIATION IMMUNITY IN AN INTEGRATED CIRCUIT	US	Issued	Jul 28, 2003	10629337	Oct 10, 2006	7119393	Microsemi SoC Corp.
FLASH/DYNAMIC RANDOM ACCESS MEMORY FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Jul 17, 2003	10623111	May 10, 2005	6891769	Microsemi SoC Corp.
FLASH/DYNAMIC RANDOM ACCESS MEMORY FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Jan 3, 2007	11619547	Mar 3, 2009	7499360	Microsemi SoC Corp.

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METHODS OF REDUNDANCY IN A FLOATING TRAP MEMORY ELEMENT BASED FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Jun 10, 2003	10459412	Nov 29, 2005	6970383	Microsemi SoC Corp.
AN ANTIFUSE STRUCTURE AND A METHOD OF FORMING AN ANTIFUSE STRUCTURE	US	Issued	Jul 22, 2003	10625491	Jan 11, 2005	6841846	Microsemi SoC Corp.
SEMICONDUCTOR PACKAGE WITH ENHANCED RADIATION SHIELDING	US	Issued	Nov 26, 2003	10724531	Feb 8, 2005	6853055	Microsemi SoC Corp.
CHIP CARRIER SUBSTRATE WITH A LAND GRID ARRAY AND EXTERNAL BOND TERMINALS	US	Issued	Nov 26, 2003	10724530	Sep 20, 2005	6946726	Microsemi SoC Corp.
PROGRAMMABLE LOGIC BASED SYSTEM ON A CHIP	US	Issued	May 10, 2004	10843701	Jan 30, 2007	7170315	Microsemi SoC Corp.
PROGRAMMABLE LOGIC BASED SYSTEM ON A CHIP	US	Issued	Aug 5, 2009	12535814	May 3, 2011	7937601	Microsemi SoC Corp.
PROGRAMMABLE LOGIC BASED SYSTEM ON A CHIP	US	Issued	Oct 31, 2007	11931772	Nov 3, 2009	7613943	Microsemi SoC Corp.
PROGRAMMABLE LOGIC BASED SYSTEM ON A CHIP	US	Issued	Oct 31, 2007	11932462	Feb 3, 2009	7487376	Microsemi SoC Corp.
POWER MANAGEMENT INTEGRATED CIRCUIT DEVICE INCLUDING PROGRAMMABLE LOGIC	US	Issued	May 19, 2004	10850054	Apr 25, 2006	7034569	Microsemi SoC Corp.
POWER MANAGEMENT INTEGRATED CIRCUIT DEVICE INCLUDING PROGRAMMABLE LOGIC	US	Issued	Jan 31, 2006	11345549	Apr 29, 2008	7365565	Microsemi SoC Corp.
POWER MANAGEMENT INTEGRATED CIRCUIT DEVICE INCLUDING PROGRAMMABLE LOGIC	US	Issued	Jan 8, 2009	12350419	Oct 13, 2009	7603578	Microsemi SoC Corp.
POWER MANAGEMENT INTEGRATED CIRCUIT DEVICE INCLUDING PROGRAMMABLE LOGIC	US	Issued	Sep 8, 2009	12555492	Dec 28, 2010	7859302	Microsemi SoC Corp.

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POWER MANAGEMENT INTEGRATED CIRCUIT DEVICE INCL UDI NG PROGRAMMABLE LOGIC	US	Issued	Oct 31, 2007	119322661	Sep 2, 2008	7421605	Microsemi SoC Corp.
POWER MANAGEMENT INTEGRATED CIRCUIT DEVICE INCL UDI NG PROGRAMMABLE LOGIC	US	Issued	Oct 31, 2007	119322710	Feb 17, 2009	7492183	Microsemi SoC Corp.
POWER MANAGEMENT INTEGRATED CIRCUIT DEVICE INCL UDI NG PROGRAMMABLE LOGIC	US	Issued	Oct 31, 2007	119322778	Feb 17, 2009	7493506	Microsemi SoC Corp.
TEMPERATURE CONTROL INTEGRATED CIRCUIT DEVICE INCL UDI NG PROGRAMMABLE LOGIC	US	Issued	May 19, 2004	10850568	Aug 14, 2007	7256610	Microsemi SoC Corp.
TEMPERATURE CONTROL INTEGRATED CIRCUIT DEVICE INCL UDI NG PROGRAMMABLE LOGIC	US	Issued	Jul 9, 2007	11774676	Nov 4, 2008	7446560	Microsemi SoC Corp.
TEMPERATURE CONTROL INTEGRATED CIRCUIT DEVICE INCL UDI NG PROGRAMMABLE LOGIC	US	Issued	Jul 24, 2008	12178874	Jul 14, 2009	7560954	Microsemi SoC Corp.
REPROGRAMMABLE METAL- TO-METAL ANTI FUSE EMPLOYING CARBON- CONTAINING ANTI FUSE MATERIAL	US	Issued	Feb 20, 2004	10784903	Dec 2, 2008	7459763	Microsemi SoC Corp.
CIRCUIT AND METHOD FOR SUPPLYING PROGRAMMING POTENTIAL AT VOLTAGES LARGER THAN BV DSS OF PROGRAMMING TRANSISTORS	US	Issued	Jun 27, 2007	11769169	Jul 15, 2008	7400185	Microsemi SoC Corp.
CIRCUIT AND METHOD FOR SUPPLYING PROGRAMMING POTENTIAL AT VOLTAGES LARGER THAN BV DSS OF PROGRAMMING TRANSISTORS	US	Issued	Jul 14, 2008	12172675	May 26, 2009	7538598	Microsemi SoC Corp.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
SYSTEM FOR SIGNAL ROUTING LINE AGGREGATION IN A FIELD-PROGRAMMABLE GATE ARRAY	US	Issued	Dec 29, 2004	11027789	Sep 11, 2007	7268585	Microsemi SoC Corp.
SYSTEM FOR SIGNAL ROUTING LINE AGGREGATION IN A FIELD-PROGRAMMABLE GATE ARRAY	US	Issued	May 7, 2007	11745134	Dec 15, 2009	7634753	Microsemi SoC Corp.
METHOD FOR PROGRAMMING A NON-VOLATILE FIELD PROGRAMMABLE GATED ARRAY INCLUDING A NON-VOLATILE USER MEMORY	US	Issued	Jan 20, 2006	11336396	Apr 5, 2011	7919979	Microsemi SoC Corp.
INTEGRATED CIRCUIT DEVICE HAVING STATE-SAVING AND INITIALIZATION FEATURE	US	Issued	May 28, 2004	10857472	Apr 1, 2008	7352206	Microsemi SoC Corp.
INTEGRATED CIRCUIT DEVICE HAVING STATE-SAVING AND INITIALIZATION FEATURE	US	Issued	Feb 8, 2008	12028615	Jul 14, 2009	7560952	Microsemi SoC Corp.
CLOCK-GENERATOR ARCHITECTURE FOR A PROGRAMMABLE-LOGIC-BASED SYSTEM ON A CHIP	US	Issued	Jul 29, 2004	10903473	Sep 5, 2006	7102391	Microsemi SoC Corp.
CLOCK-GENERATOR ARCHITECTURE FOR A PROGRAMMABLE-LOGIC-BASED SYSTEM ON A CHIP	US	Issued	Jun 29, 2006	11427717	Nov 20, 2007	7298178	Microsemi SoC Corp.
CLOCK-GENERATOR ARCHITECTURE FOR A PROGRAMMABLE-LOGIC-BASED SYSTEM ON A CHIP	US	Issued	Oct 12, 2007	11871741	Mar 10, 2009	7501872	Microsemi SoC Corp.
CLOCK-GENERATOR ARCHITECTURE FOR A PROGRAMMABLE-LOGIC-BASED SYSTEM ON A CHIP	US	Issued	Oct 31, 2007	11932807	Aug 25, 2009	7579895	Microsemi SoC Corp.
SYSTEM-ON-A-CHIP INTEGRATED CIRCUIT INCLUDING DUAL-FUNCTION ANALOG AND DIGITAL INPUTS	US	Issued	Jun 25, 2004	10877043	Oct 31, 2006	7129746	Microsemi SoC Corp.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
SYSTEM-ON-A-CHIP INTEGRATED CIRCUIT INCLUDING DUAL-FUNCTION ANALOG AND DIGITAL INPUTS	US	Issued	Oct 23, 2006	11551857	Sep 9, 2008	7423451	Microsemi SoC Corp.
SYSTEM-ON-A-CHIP INTEGRATED CIRCUIT INCLUDING DUAL-FUNCTION ANALOG AND DIGITAL INPUTS	US	Issued	Jul 21, 2008	12176560	Nov 10, 2009	7616026	Microsemi SoC Corp.
NON-VOLATILE MEMORY ARCHITECTURE FOR PROGRAMMABLE-LOGIC BASED SYSTEM ON A CHIP	US	Issued	Jul 22, 2004	10898149	Sep 5, 2006	7102384	Microsemi SoC Corp.
NON-VOLATILE MEMORY ARCHITECTURE FOR PROGRAMMABLE-LOGIC BASED SYSTEM ON A CHIP	US	Issued	Jul 26, 2006	11460055	Jun 10, 2008	7385418	Microsemi SoC Corp.
NON-VOLATILE MEMORY ARCHITECTURE FOR PROGRAMMABLE-LOGIC BASED SYSTEM ON A CHIP	US	Issued	Jun 2, 2008	12131377	Mar 9, 2010	7675320	Microsemi SoC Corp.
INTEGRATED CIRCUIT INCLUDING PROGRAMMABLE LOGIC AND EXTERNAL- DEVICE CHIP-ENABLE OVERRIDE CONTROL	US	Issued	Jun 25, 2004	10877045	Apr 18, 2006	7030649	Microsemi SoC Corp.
INTEGRATED CIRCUIT INCLUDING PROGRAMMABLE LOGIC AND EXTERNAL- DEVICE CHIP-ENABLE OVERRIDE CONTROL	US	Issued	Oct 31, 2007	11932901	Apr 21, 2009	7521960	Microsemi SoC Corp.
FACE-TO-FACE BONDED I/O CIRCUIT DIE AND FUNCTIONAL LOGIC CIRCUIT DIE SYSTEM	US	Issued	Sep 29, 2004	10955929	Dec 2, 2008	7459772	Microsemi SoC Corp.
NON-VOLATILE MEMORY CONFIGURATION SCHEME FOR VOLATILE-MEMORY-BASED PROGRAMMABLE CIRCUITS IN AN PGA	US	Issued	Dec 23, 2004	11021472	Sep 26, 2006	7112993	Microsemi SoC Corp.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
NON-VOLATILE MEMORY CONFIGURATION SCHEME FOR VOLATILE-MEMORY-BASED PROGRAMMABLE CIRCUITS IN AN FPGA	US	Issued	Aug 21, 2006	11465899	Aug 19, 2008	7414428	Microsemi SoC Corp.
PROGRAMMABLE LOGIC CELL USING A NON-VOLATILE PROGRAMMABLE ELEMENT TO CONTROL A VOLATILE PROGRAMMABLE ELEMENT IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Oct 5, 2004	10959404	Aug 29, 2006	7099189	Microsemi SoC Corp.
PROGRAMMABLE LOGIC CELL USING A NON-VOLATILE PROGRAMMABLE ELEMENT TO CONTROL A VOLATILE PROGRAMMABLE ELEMENT IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Apr 26, 2007	11740458	Aug 5, 2008	7408815	Microsemi SoC Corp.
PROGRAMMABLE LOGIC CELL USING A NON-VOLATILE PROGRAMMABLE ELEMENT TO CONTROL A VOLATILE PROGRAMMABLE ELEMENT IN A FIELD PROGRAMMABLE GATE ARRAY	US	Issued	Jul 15, 2008	12173117	Jul 7, 2009	7558112	Microsemi SoC Corp.
PROGRAMMING METHOD FOR NON-VOLATILE MEMORY AND NON-VOLATILE MEMORY-BASED PROGRAMMABLE LOGIC DEVICE	US	Issued	Dec 27, 2005	11319751	Apr 22, 2008	7362610	Microsemi SoC Corp.
PROGRAMMING METHOD FOR NON-VOLATILE MEMORY AND NON-VOLATILE MEMORY-BASED PROGRAMMABLE LOGIC DEVICE	US	Issued	Feb 1, 2008	12024867	Nov 24, 2009	7623390	Microsemi SoC Corp.
FIELD PROGRAMMABLE GATE ARRAY LONG LINE ROUTING NETWORK	US	Issued	Dec 31, 2004	11028471	May 1, 2007	7212030	Microsemi SoC Corp.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
FIELD PROGRAMMABLE GATE ARRAY LONG LINE ROUTTING NETWORK	US	Issued	Mar 28, 2007	11692717	Jul 1, 2008	7394286	Microsemi SoC Corp.
METHOD FOR ERASING PROGRAMMABLE INTERCONNECT CELLS FOR FIELD PROGRAMMABLE GATE ARRAYS USING REVERSE BIAS VOLTAGE	US	Issued	Jun 29, 2005	11171489	Jan 9, 2007	7161841	Microsemi SoC Corp.
METHOD FOR ERASING PROGRAMMABLE INTERCONNECT CELLS FOR FIELD PROGRAMMABLE GATE ARRAYS USING REVERSE BIAS VOLTAGE	US	Issued	Dec 6, 2006	11567625	Sep 22, 2009	7593268	Microsemi SoC Corp.
NON-VOLATILE LOOK-UP TABLE FOR AN FPGA	US	Issued	Dec 29, 2004	11026336	Oct 31, 2006	7129748	Microsemi SoC Corp.
NON-VOLATILE LOOK-UP TABLE FOR AN FPGA	US	Issued	Oct 30, 2007	11929287	Oct 28, 2008	7443198	Microsemi SoC Corp.
NON-VOLATILE LOOK-UP TABLE FOR AN FPGA	US	Issued	Oct 23, 2006	11551973	Jan 22, 2008	7321237	Microsemi SoC Corp.
NON-VOLATILE LOOK-UP TABLE FOR AN FPGA	US	Issued	Sep 20, 2007	11858341	May 26, 2009	7538576	Microsemi SoC Corp.
NON-VOLATILE LOOK-UP TABLE FOR AN FPGA	US	Issued	Sep 20, 2007	11858330	Feb 24, 2009	7495473	Microsemi SoC Corp.
NON-VOLATILE LOOK-UP TABLE FOR AN FPGA	US	Issued	Sep 20, 2007	11858322	Feb 17, 2009	7492182	Microsemi SoC Corp.
INTEGRATED MULTI-FUNCTION ANALOG CIRCUIT INCLUDING VOLTAGE, CURRENT, AND TEMPERATURE MONITOR AND GATE-DRIVER CIRCUIT BLOCKS	US	Issued	Dec 17, 2004	11016699	Nov 21, 2006	7138824	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
INTEGRATED MULTI-FUNCTION ANALOG CIRCUIT INCLUDING VOLTAGE, CURRENT, AND TEMPERATURE MONITOR AND GATE-DRIVER CIRCUIT BLOCKS	US	Issued	Nov 21, 2006	11562049	Aug 19, 2008	7414427	Microsemi SoC Corp.
POWER-UP AND POWER-DOWN CIRCUIT FOR SYSTEM-ON-A-CHIP INTEGRATED CIRCUIT	US	Issued	Dec 22, 2004	11021092	Oct 10, 2006	7119398	Microsemi SoC Corp.
POWER-UP AND POWER-DOWN CIRCUIT FOR SYSTEM-ON-A-CHIP INTEGRATED CIRCUIT	US	Issued	Aug 25, 2006	11467279	Mar 22, 2011	7911226	Microsemi SoC Corp.
VOLTAGE- AND TEMPERATURE-COMPENSATED RC OSCILLATOR CIRCUIT	US	Issued	Dec 21, 2004	11022331	Oct 3, 2006	7116181	Microsemi SoC Corp.
VOLTAGE- AND TEMPERATURE-COMPENSATED RC OSCILLATOR CIRCUIT	US	Issued	Aug 25, 2006	11467475	Oct 21, 2008	7439818	Microsemi SoC Corp.
ESD PROTECTION STRUCTURE FOR I/O PAD SUBJECT TO BOTH POSITIVE AND NEGATIVE VOLTAGES	US	Issued	Dec 29, 2004	11027788	Nov 4, 2008	7446378	Microsemi SoC Corp.
ESD PROTECTION STRUCTURE FOR I/O PAD SUBJECT TO BOTH POSITIVE AND NEGATIVE VOLTAGES	US	Issued	Jul 24, 2008	12179243	Feb 9, 2010	7659585	Microsemi SoC Corp.
ARCHITECTURE FOR FACE-TO-FACE BONDING BETWEEN SUBSTRATE AND MULTIPLE DAUGHTER CHIPS	US	Issued	Jun 29, 2005	11171488	Apr 15, 2008	7358601	Microsemi SoC Corp.
NON-VOLATILE PROGRAMABLE MEMORY CELL FOR PROGRAMMABLE LOGIC ARRAY	US	Issued	Sep 21, 2005	11233396	Jul 17, 2007	7245535	Microsemi SoC Corp.



<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
NON-VOLATILE PROGRAMMABLE MEMORY CELL FOR PROGRAMMABLE LOGIC ARRAY	US	Issued	Jun 13, 2007	11762451	Sep 15, 2009	7590000	Microsemi SoC Corp.
NON-VOLATILE PROGRAMMABLE MEMORY CELL AND ARRAY FOR PROGRAMMABLE LOGIC ARRAY	US	Issued	Jun 13, 2005	11152018	May 6, 2008	7368789	Microsemi SoC Corp.
NON-VOLATILE PROGRAMMABLE MEMORY CELL AND ARRAY FOR PROGRAMMABLE LOGIC ARRAY	US	Issued	Sep 30, 2010	12894441	Jan 21, 2014	8633548	Microsemi SoC Corp.
ISOLATED-NITRIDE-REGION NON-VOLATILE MEMORY CELL AND FABRICATION METHOD	US	Issued	Jun 13, 2005	11152019	Aug 3, 2010	7768056	Microsemi SoC Corp.
ISOLATED-NITRIDE-REGION NON-VOLATILE MEMORY CELL AND FABRICATION METHOD	US	Issued	Jun 25, 2010	12823369	Mar 22, 2011	7910436	Microsemi SoC Corp.
METHOD FOR SECURE DELIVERY OF CONFIGURATION DATA FOR PROGRAMMABLE LOGIC DEVICE	US	Issued	Jul 19, 2005	11185427	Aug 25, 2009	7581117	Microsemi SoC Corp.
INTEGRATED CIRCUIT WAFER WITH INNER-DIE METAL INTERCONNECT LINES TRAVERSING SCRIBE-LINE BOUNDARIES	US	Issued	Apr 3, 2007	11695992	May 18, 2010	7718512	Microsemi SoC Corp.
NON-VOLATILE TWO-TRANSISTOR PROGRAMMABLE LOGIC CELL AND ARRAY LAYOUT	US	Issued	Jun 15, 2005	11155005	Oct 23, 2007	7285818	Microsemi SoC Corp.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
NON-VOLATILE TWO-TRANSISTOR PROGRAMMABLE LOGIC CELL AND ARRAY LAYOUT	US	Issued	Dec 21, 2007	11962615	Mar 10, 2009	7501681	Microsemi SoC Corp.
NON-VOLATILE TWO-TRANSISTOR PROGRAMMABLE LOGIC CELL AND ARRAY LAYOUT	US	Issued	Jan 26, 2009	12359481	Mar 1, 2011	7898018	Microsemi SoC Corp.
NON-VOLATILE TWO-TRANSISTOR PROGRAMMABLE LOGIC CELL AND ARRAY LAYOUT	US	Issued	Mar 1, 2011	13037507	Sep 4, 2012	8258567	Microsemi SoC Corp.
APPARATUS AND METHOD FOR REDUCING LEAKAGE OF UNUSED BUFFERS IN AN INTEGRATED CIRCUIT	US	Issued	Jul 19, 2005	11185426	Dec 9, 2008	7463061	Microsemi SoC Corp.
ADDRESS TRANSITION DETECTOR FOR NON-VOLATILE MEMORY DEVICE	US	Issued	Aug 3, 2007	11833833	May 12, 2009	7532035	Microsemi SoC Corp.
BITLINE PRE-SETTLEMENT FOR NON-VOLATILE MEMORY SENSING SCHEME	US	Issued	Nov 16, 2005	11281253	Mar 11, 2008	7342832	Microsemi SoC Corp.
NON-VOLATILE MEMORY INTEGRATED CIRCUIT HAVING ASSEMBLY BUFFER AND BITLINE DRIVER, AND METHOD OF OPERATION THEREOF	US	Issued	Sep 21, 2007	11859073	Jun 30, 2009	7554860	Microsemi SoC Corp.
VOLATILE DATA STORAGE IN A NON-VOLATILE MEMORY CELL	US	Issued	Sep 26, 2007	11861504	Aug 11, 2009	7573746	Microsemi SoC Corp.
NON-VOLATILE TWO-TRANSISTOR PROGRAMMABLE CELL AND ARRAY WITH WELL ISOLATION	US	Issued	Dec 16, 2005	11303865	May 26, 2009	7538379	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
NON-VOLATILE TWO-TRANSISTOR PROGRAMMABLE CELL AND ARRAY WITH WELL ISOLATION	US	Issued	Oct 29, 2007	11927237	May 26, 2009	7538382	Microsemi SoC Corp.
NON-VOLATILE TWO-TRANSISTOR PROGRAMMABLE CELL AND ARRAY WITH WELL ISOLATION	US	Issued	Oct 29, 2007	11927265	Jan 6, 2009	7473960	Microsemi SoC Corp.
NON-VOLATILE TWO-TRANSISTOR PROGRAMMABLE CELL AND ARRAY WITH WELL ISOLATION	US	Issued	Oct 29, 2007	11927282	Aug 11, 2009	7573093	Microsemi SoC Corp.
NON-VOLATILE TWO-TRANSISTOR PROGRAMMABLE CELL AND ARRAY WITH WELL ISOLATION	US	Issued	Apr 2, 2009	12417189	Mar 29, 2011	7915665	Microsemi SoC Corp.
RECONFIGURABLE DELTA SIGMA ANALOG DIGITAL CONVERTER AND CUSTOMIZED DIGITAL FILTERS WITH EMBEDDED NON-VOLATILE MEMORY AND PROGRAMMABLE LOGIC	US	Issued	Jan 29, 2008	12022064	Nov 10, 2009	7616143	Microsemi SoC Corp.
SECURE, RELIABILITY-ENHANCING PROGRAMMING METHOD FOR NON-VOLATILE FPGA	US	Issued	Aug 10, 2006	11463846	Nov 10, 2009	7616508	Microsemi SoC Corp.
SECURE, RELIABILITY-ENHANCING PROGRAMMING METHOD FOR NON-VOLATILE FPGA	US	Issued	Sep 29, 2009	12569084	Feb 8, 2011	7885122	Microsemi SoC Corp.
NON-VOLATILE MEMORY WITH SOURCE-SIDE COLUMN SELECT	US	Issued	Dec 20, 2007	11961134	Apr 21, 2009	7522453	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
MIXED-SIGNAL SYSTEM ON A CHIP HAVING INTEGRATED SIMULTANEOUS MULTIPLE SAMPLE AND HOLD CIRCUITS AND EMBEDDED ANALOG COMPARATORS	US	Issued	Dec 19, 2006	11612771	Jul 15, 2008	7400283	Microsemi SoC Corp.
MIXED-SIGNAL SYSTEM ON A CHIP HAVING INTEGRATED SIMULTANEOUS MULTIPLE SAMPLE AND HOLD CIRCUITS AND EMBEDDED ANALOG COMPARATORS	US	Issued	Jun 13, 2008	12139354	Feb 23, 2010	7667631	Microsemi SoC Corp.
ISOLATION SCHEME FOR STATIC AND DYNAMIC PARTIAL PROGRAMMING OF FPGA	US	Issued	Jan 30, 2008	12022921	Jun 16, 2009	7548095	Microsemi SoC Corp.
EFFICIENT SEGMENTATION OF FLASH MEMORY ARRAY FOR FPGA	US	Issued	Dec 20, 2007	11961203	Apr 13, 2010	7697330	Microsemi SoC Corp.
FPGA ARCHITECTURE WITH TWO-LEVEL CLUSTER INPUT INTERCONNECT SCHEME WITHOUT BANDWIDTH LIMITATION	US	Issued	Sep 14, 2007	11855974	Aug 5, 2008	7408383	Microsemi SoC Corp.
FPGA ARCHITECTURE WITH TWO-LEVEL CLUSTER INPUT INTERCONNECT SCHEME WITHOUT BANDWIDTH LIMITATION	US	Issued	Jul 15, 2008	12173225	Jun 9, 2009	7545169	Microsemi SoC Corp.
METHOD OF COMPENSATING FOR DISPARATE SIGNAL RISE AND FALL TIMES BY USING POLARITY SELECTION TO IMPROVE TIMING AND POWER IN AN INTEGRATED CIRCUIT	US	Issued	Apr 2, 2010	12753247	Aug 28, 2012	8255854	Microsemi SoC Corp.
STAGGERED I/O GROUPS	US	Issued	Jun 19, 2008	12142118	Apr 26, 2011	7932744	Microsemi SoC Corp.
RAD TOLERANT 8T FLASH BASED FPGA	US	Issued	May 21, 2008	12124661	Aug 3, 2010	7768317	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
ERROR DETECTING AND CORRECTING FPGA ARCHITECTURE	US	Issued	Jul 27, 2007	11829335	May 3, 2011	7937647	Microsemi SoC Corp.
REDUCED-EDGE RADIATION TOLERANT FLOATING-GATE TRANSISTOR CELL FOR PROGRAMMABLE LOGIC DEVICE OR MEMORY	US	Issued	Aug 22, 2008	12196978	Mar 15, 2011	7906805	Microsemi SoC Corp.
VERSATILE ADDER CIRCUIT FOR PROGRAMMABLE LOGIC DEVICE	US	Issued	Apr 11, 2008	12101589	Aug 10, 2010	7772879	Microsemi SoC Corp.
VERSATILE ADDER CIRCUIT FOR PROGRAMMABLE LOGIC DEVICE	US	Issued	Jun 25, 2010	12823266	Dec 27, 2011	8085064	Microsemi SoC Corp.
PROGRAMMABLE LOGIC DEVICE ADAPTED TO ENTER A LOW-POWER MODE	US	Issued	Oct 30, 2007	11928428	Nov 10, 2009	7616025	Microsemi SoC Corp.
PROGRAMMABLE LOGIC DEVICE ADAPTED TO ENTER A LOW-POWER MODE	US	Issued	Oct 30, 2007	11928445	Feb 8, 2011	7886261	Microsemi SoC Corp.
ON-CHIP MICROCONTROLLER	US	Issued	Jan 31, 2008	12023299	Mar 23, 2010	7683660	Microsemi SoC Corp.
ON-CHIP MICROCONTROLLER	US	Issued	Feb 5, 2010	12701068	Apr 12, 2011	7924051	Microsemi SoC Corp.
HIGH VOLTAGE DUAL POLARITY IO P-WELL PUMP ESD PROTECTION SCHEME	US	Issued	Feb 8, 2008	12028692	Dec 15, 2009	7633731	Microsemi SoC Corp.
FLEXIBLE CARRY SCHEME FOR FIELD PROGRAMMABLE GATE ARRAYS	US	Issued	Dec 21, 2007	11962922	Feb 16, 2010	7663400	Microsemi SoC Corp.
FLEXIBLE CARRY SCHEME FOR FIELD PROGRAMMABLE GATE ARRAYS	US	Issued	Dec 23, 2009	12645863	Jan 18, 2011	7872497	Microsemi SoC Corp.
PVT DELAY LINE	US	Issued	Jul 17, 2008	12175399	Apr 20, 2010	7701246	Microsemi SoC Corp.
PVT DELAY LINE	US	Issued	Mar 3, 2010	12716469	Nov 29, 2011	8067959	Microsemi SoC Corp.
SINGLE EVENT TRANSIENT MITIGATION AND MEASUREMENT IN INTEGRATED CIRCUITS	US	Issued	Jan 12, 2009	12352512	Aug 10, 2010	7772874	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
SINGLE EVENT TRANSIENT MITIGATION AND MEASUREMENT IN INTEGRATED CIRCUITS	US	Issued	Jul 1, 2010	12828821	Feb 8, 2011	7884636	Microsemi SoC Corp.
INPUT FLIP-FLOP PACKING WITH LOGIC IN CLUSTERED FPGA ARCHITECTURE	US	Issued	Jan 28, 2009	12360971	Apr 20, 2010	7701250	Microsemi SoC Corp.
INPUT FLIP-FLOP PACKING WITH LOGIC IN CLUSTERED FPGA ARCHITECTURE	US	Issued	Mar 4, 2010	12717315	May 17, 2011	7944238	Microsemi SoC Corp.
PUSH-PULL FLASH CELL FOR FPGAS	US	Issued	Dec 12, 2008	12334059	Nov 23, 2010	7839681	Microsemi SoC Corp.
FAST CARRY LOOKAHEAD CIRCUIT	US	Issued	Jan 30, 2008	12022721	Aug 14, 2012	8244791	Microsemi SoC Corp.
FAST CARRY LOOKAHEAD CIRCUIT	US	Issued	Jun 12, 2012	13494850	Oct 27, 2015	9170774	Microsemi SoC Corp.
CLUSTERED FPGA ARCHITECTURE	US	Issued	Jan 30, 2009	12362844	Apr 12, 2011	7924053	Microsemi SoC Corp.
CLUSTERED FIELD PROGRAMMABLE GATE ARRAY ARCHITECTURE	US	Issued	Jan 29, 2009	12361835	Apr 12, 2011	7924052	Microsemi SoC Corp.
INVERTING FLIP-FLOP FOR USE IN AN FPGA	US	Issued	Jan 28, 2009	12360948	Oct 19, 2010	7816946	Microsemi SoC Corp.
INVERTING FLIP-FLOP FOR USE IN AN FPGA	US	Issued	Sep 10, 2010	12879306	Apr 26, 2011	7932745	Microsemi SoC Corp.
QUADRATIC AND CUBE COMPENSATION OF SIGMA-DELTA D/A AND A/D CONVERTERS	US	Issued	Aug 7, 2008	12187541	Feb 9, 2010	7659841	Microsemi SoC Corp.
SPLIT GATE FPGA CELLS	US	Issued	Jul 22, 2008	12177680	Apr 6, 2010	7692972	Microsemi SoC Corp.
FPGA PROVIDING SOFT WAKE-UP LOGIC	US	Issued	Dec 19, 2008	12340358	Feb 8, 2011	7884640	Microsemi SoC Corp.
PROGRAMMABLE WAKE-UP PINS	US	Issued	Dec 19, 2008	12340440	Oct 18, 2011	8040151	Microsemi SoC Corp.
CIRCUIT AND METHOD FOR TESTING FPGA ROUTING SWITCHES	US	Issued	Sep 5, 2008	12205656	Sep 28, 2010	7804321	Microsemi SoC Corp.

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
CIRCUIT AND METHOD FOR TESTING FPGA ROUTING SWITCHES	US	Issued	Aug 20, 2010	12860004	Apr 5, 2011	7919977	Microsemi SoC Corp.
SPLIT GATE FLASH BASED FPGA	US	Issued	Feb 13, 2009	12371483	Feb 21, 2012	8120955	Microsemi SoC Corp.
SIMULTANEOUS NFG AND PFG PROGRAMMING	US	Issued	Dec 23, 2008	12343308	Apr 19, 2011	7929345	Microsemi SoC Corp.
PUSH-PULL FPGA CONFIGURATION CELL	US	Issued	Jul 1, 2010	12828606	Nov 27, 2012	8320178	Microsemi SoC Corp.
DISAGGREGATED STAR PLATFORM MANAGEMENT BUS ARCHITECTURE SYSTEM	US	Issued	Aug 9, 2006	11502324	Aug 18, 2009	7577139	Microsemi SoC Corp.
METHOD OF SET MITIGATION	US	Issued	Jan 29, 2009	12361955	May 29, 2012	8191021	Microsemi SoC Corp.
RESISTIVE RANDOM ACCESS MEMORY	US	Issued	Jul 1, 2010	12829300	Sep 18, 2012	8269203	Microsemi SoC Corp.
RESISTIVE RANDOM ACCESS MEMORY	US	Issued	Jul 1, 2010	12829311	Apr 9, 2013	8415650	Microsemi SoC Corp.
FRONT TO BACK RESISTIVE RANDOM ACCESS MEMORY CELLS	US	Issued	Mar 15, 2013	13840815	May 13, 2014	8723151	Microsemi SoC Corp.
BACK TO BACK RESISTIVE RANDOM ACCESS MEMORY CELLS	US	Issued	May 9, 2014	14274417	Mar 17, 2015	8981328	Microsemi SoC Corp.
LAYOUTS FOR RESISTIVE RAM CELLS	US	Issued	Feb 12, 2015	14621139	Sep 29, 2015	9147836	Microsemi SoC Corp.
RESISTIVE RANDOM ACCESS MEMORY	US	Issued	Jul 1, 2010	12829305	Sep 18, 2012	8269204	Microsemi SoC Corp.
METHOD AND APPARATUS FOR UNIVERSAL PROGRAM CONTROLLED BUS	US	Issued	Apr 11, 2003	10412975	Aug 24, 2004	6781410	Microsemi SoC Corp.
METHOD AND APPARATUS FOR UNIVERSAL PROGRAM CONTROLLED BUS	US	Issued	Mar 25, 2004	10811422	Dec 13, 2005	6975138	Microsemi SoC Corp.
SCALABLE MULTIPLE LEVEL TAB ORIENTED INTERCONNECT ARCHITECTURE	US	Issued	Dec 5, 2001	10021744	Mar 7, 2006	7009422	Microsemi SoC Corp.

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
FLOATING GATE FPGA CELL WITH COUNTER-DOPED SELECT DEVICE	US	Issued	Aug 9, 1996	08708074	Apr 13, 1999	5894148	Microsemi SoC Corp.
FLOATING GATE FPGA CELL WITH SEPERATED SELECT DEVICE	US	Issued	Aug 27, 1996	08704853	Jun 30, 1998	5773862	Microsemi SoC Corp.
FLOATING GATE FPGA CELL WITH SELECT DEVICE ON DRAIN	US	Issued	Aug 27, 1996	08703683	Jun 2, 1998	5761120	Microsemi SoC Corp.
NON-VOLATILE REPROGRAMMABLE INTERCONNECT CELL WITH FN	US	Issued	Aug 24, 1998	09138838	Jun 26, 2001	6252273	Microsemi SoC Corp.
NON-VOLATILE REPROGRAMMABLE INTERCONNECT CELL WITH FN TUNNELING IN SENSE	US	Issued	Mar 31, 1997	08829374	Nov 17, 1998	5838040	Microsemi SoC Corp.
BURIED BITLINE PROGRAMMABLE ASIC CELL	US	Issued	Dec 4, 1998	09205876	Jun 6, 2000	6072720	Microsemi SoC Corp.
NONVOLATILE REPROGRAMMABLE INTERCONNECT CELL WITH PROGRAMMABLE BURIED SOURCE/DRAIN IN SENSE TRANSISTOR	US	Issued	Dec 4, 1998	09205678	Oct 24, 2000	6137728	Microsemi SoC Corp.
METHOD OF PROGRAMMING NON-VOLATILE MEMORY CELLS	US	Issued	May 14, 1999	09311975	Sep 26, 2000	6125059	Microsemi SoC Corp.
Fine Tuned Multiple Output Converter	US	Issued	Dec 21, 2008	12340717	Mar 15, 2011	7906868	Microsemi Corporation
Single LED String Backlit Portable Computer	US	Issued	Feb 5, 2009	12365901	Aug 30, 2011	8008864	Microsemi Corporation
Four Quadrant MOSFET Based Switch	US	Issued	Jan 5, 2010	12652045	Nov 22, 2011	8063516	Microsemi Corporation
Integrated CCFL Backlight Control System (LIPS)	US	Issued	Jun 15, 2010	12815441	Jan 8, 2013	8350488	Microsemi Corporation
Low Voltage Drop Closed Loop Unidirectional Electronic Valve	US	Issued	Jun 15, 2010	12815496	May 1, 2012	8169252	Microsemi Corporation



Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
Circuit and Method for Temperature and Process Independent Transimpedance Amplifier Arrangement	US	Issued	Aug 24, 2010	12861919	Sep 11, 2012	8263927	Microsemi Corporation
Master/Slave Voltage Controlled Backlight Driver	US	Issued	Oct 1, 2010	12895875	Feb 19, 2013	8378586	Microsemi Corporation
Non-Dissipative Start Up Circuit	US	Issued	Dec 5, 2010	12960504	Jan 29, 2013	8363436	Microsemi Corporation
Converter with Crossover Frequency Responsive to Switching Frequency	US	Issued	Dec 5, 2010	12960505	Jul 23, 2013	8493049	Microsemi Corporation
Dimming Input Suitable for Multiple Dimming Signal Types	US	Issued	Jan 31, 2011	13017128	Jul 9, 2013	8482218	Microsemi Corporation
Sampling External Voltage Which May Exceed Integrated Circuit Maximum Voltage Rating	US	Issued	Apr 11, 2011	13083618	Jun 11, 2013	8461764	Microsemi Corporation
LPS Backlight Control Architecture with Low Cost Dead Time Transfer	US	Issued	Jun 13, 2011	13158507	Aug 26, 2014	8816606	Microsemi Corporation
LED String Driver with Non-Dissipative Current Balancer	US	Issued	Jul 4, 2011	13175899	May 12, 2015	9030119	Microsemi Corporation
FLYBACK WITH SWITCHING FREQUENCY RESPONSIVE TO LOAD AND INPUT VOLTAGE	US	Issued	Aug 2, 2011	13195868	Dec 3, 2013	8598808	Microsemi Corporation
SYNCHRONOUS REGULATION FOR LED STRING DRIVER	US	Issued	Jun 5, 2014	14296544	Apr 28, 2015	9018852	Microsemi Corporation
SYNCHRONOUS REGULATION FOR LED STRING DRIVER	US	Issued	Oct 24, 2011	13279445	Jul 15, 2014	8779686	Microsemi Corporation
HYSTERETIC VOLTAGE CONVERTER WITH OFFSET VOLTAGE CORRECTION	US	Issued	Nov 29, 2011	13305759	May 14, 2013	8441245	Microsemi Corporation
BRIGHTNESS CONTROL FOR LED LIGHTING	US	Issued	Mar 19, 2012	13423395	Apr 15, 2014	8698404	Microsemi Corporation
Converter with Hysteretic Control	US	Issued	Oct 24, 2012	13659046	Mar 24, 2015	8988056	Microsemi Corporation
HIGH EFFICIENCY LED DRIVING METHOD	US	Issued	Dec 18, 2012	13717755	Jun 17, 2014	8754581	Microsemi Corporation
HIGH EFFICIENCY LED DRIVING METHOD	US	Issued	May 2, 2012	13461793	Dec 3, 2013	8598795	Microsemi Corporation
Photo-Voltaic Safety De-Energizing Device	US	Issued	May 23, 2012	13478125	Sep 23, 2014	8842397	Microsemi Corporation

Title	Country	Status	Date filed	Application #	Issue date	Patent #	Owner <sup>1</sup>
DIFFERENCE AMPLIFIER ARRANGEMENT WITH TRANSDUCTANCE AMPLIFIER BASED CURRENT COMPENSATION	US	Issued	May 3, 2012	13462892	Apr 22, 2014	8704596	Microsemi Corporation
EMI SUPPRESSION WITH SHIELDED COMMON MODE CHOKE	US	Issued	Jul 10, 2012	13545059	Jan 27, 2015	8941456	Microsemi Corporation
Method and Apparatus for LED String Short Circuit Detection and Protection	US	Issued	Oct 16, 2012	13652495	Dec 9, 2014	8907568	Microsemi Corporation
POWER OVER ETHERNET FOR BI-DIRECTIONAL ETHERNET OVER SINGLE PAIR	US	Issued	May 8, 2013	13889391	Jun 17, 2014	8755449	Microsemi Corporation
Direct Drive Backlight System	US	Issued	Mar 13, 1998	09042125	Jul 27, 1999	5930121	Microsemi Corporation
Apparatus and Method for Starting a Fluorescent Lamp	US	Issued	Mar 13, 1998	09042144	Jul 13, 1999	5923129	Microsemi Corporation
Semi-Soft Switching and Precedent Switching in Synchronous Power Supply Controllers	US	Issued	Oct 31, 1996	08742094	May 26, 1998	5757173	Microsemi Corporation
Multiple Channel Class D Audio Amplifier	US	Issued	Jul 23, 1997	08899445	Nov 9, 1999	5982231	Microsemi Corporation
Multiple Channel Class D Audio Amplifier	US	Issued	Sep 1, 1999	09388412	May 8, 2001	6229388	Microsemi Corporation
Electronic Circuit Breaker	US	Issued	Sep 12, 1997	08928269	Aug 24, 1999	5943203	Microsemi Corporation
High Speed Digital bus Termination	US	Issued	Oct 29, 1996	08739372	Jul 20, 1999	5926031	Microsemi Corporation
Voltage Reference Circuit with Breakpoint Compensation	US	Issued	Jun 22, 1992	07901810	Jul 5, 1994	5327028	Microsemi Corporation
Dimmable Backlight System	US	Issued	Jun 9, 1999	09328536	Mar 6, 2001	6198234	Microsemi Corporation
Method and Apparatus for Programmable Current Sharing	US	Issued	Apr 7, 2000	09544769	Sep 18, 2001	6292378	Microsemi Corporation
Method and Apparatus for Controlling Minimum Brightness of a Fluorescent Lamp	US	Issued	Nov 20, 2003	10719498	Sep 20, 2005	6946806	Microsemi Corporation
Multiple Output Charge Pump	US	Issued	Sep 22, 2003	10667799	Nov 2, 2004	6812776	Microsemi Corporation
Charge Pump Regulator with Load Current Control	US	Issued	Jun 12, 2001	09880545	Apr 29, 2003	6556067	Microsemi Corporation

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
Charge Pump Regulator With Load Current Control	US	Issued	Mar 5, 2003	10382748	May 24, 2005	6897709	Microsemi Corporation
Lamp Inverter With Pre-Regulator	US	Issued	Jun 17, 2003	10463289	Apr 5, 2005	6876157	Microsemi Corporation
Apparatus and Method for Striking a Fluorescent Lamp	US	Issued	Jun 3, 2003	10453760	Dec 27, 2005	6979959	Microsemi Corporation
Shorted Lamp Detection in Backlight System	US	Issued	Mar 26, 2003	10400326	Mar 22, 2005	6870330	Microsemi Corporation
Pseudo-Differential Transimpedance Amplifier	US	Issued	Apr 2, 2003	10406064	Oct 12, 2004	6803825	Microsemi Corporation
Method and Apparatus for Auto-Interleaving Synchronization in a Multiphase Switching Power Converter	US	Issued	Apr 25, 2003	10424549	Nov 15, 2005	6965219	Microsemi Corporation
Battery Charging and Discharging by Using a Bi-Directional Transistor	US	Issued	Jan 16, 2004	10758952	May 5, 2009	7528582	Microsemi Corporation
Battery Charging and Discharging by Using a Bi-Directional Transistor - Publication US2009/0212274	US	Issued	May 1, 2009	12434416	Jul 20, 2010	7759907	Microsemi Corporation
Battery Charging and Discharging by Using a Bi-Directional Transistor - Publication: 2010-0277125 A1	US	Issued	Jul 16, 2010	12838254	Jun 5, 2012	8193779	Microsemi Corporation
Dual-Mode PFM Boost Converter	US	Issued	Jan 20, 2004	10761801	Sep 5, 2006	7102340	Microsemi Corporation
Square Wave Drive System	US	Issued	Jun 17, 2003	10463280	Nov 29, 2005	6969958	Microsemi Corporation
Front Side Illuminated Photodiode With Backside Bump	US	Issued	Sep 23, 2003	10669081	May 2, 2006	7038288	Microsemi Corporation
Front Side Illuminated Photodiode With Backside Bump	US	Issued	Apr 28, 2006	11414128	Jan 20, 2009	7479401	Microsemi Corporation
Method and Apparatus for Load Sharing in a Multiphase Switching Power Converter	US	Issued	Apr 25, 2003	10424556	Feb 28, 2006	7005835	Microsemi Corporation
Method and Apparatus for Dithering Auto-Synchronization of a Multiphase Switching Power Converter	US	Issued	Apr 25, 2003	10424557	Dec 28, 2004	6836103	Microsemi Corporation
A Current Sharing Scheme for Multiple CCF Lamp Operation	US	Issued	Oct 5, 2004	10958668	Jul 10, 2007	7242147	Microsemi Corporation
Split Phase Inverters for CCFL Backlight System	US	Issued	Mar 5, 2007	11682242	Apr 28, 2009	7525255	Microsemi Corporation

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
Optical and Temperature Feedbacks to Control Display Brightness	US	Issued	Sep 9, 2004	10937889	Feb 27, 2007	7183727	Microsemi Corporation
Optical and Temperature Feedbacks to Control Display Brightness	US	Issued	Feb 26, 2007	11679046	Jun 24, 2008	7391172	Microsemi Corporation
Linearly Regulated Battery Charger	US	Issued	Jan 16, 2004	10760126	Apr 28, 2009	7525291	Microsemi Corporation
Linearly Regulated Battery Charger US2009/0206794	US	Issued	Apr 27, 2009	12430426	Jul 20, 2010	7759906	Microsemi Corporation
Method and Apparatus to Switch Operating Modes in a PFM Converter	US	Issued	Jan 20, 2004	10760626	Sep 5, 2006	7102339	Microsemi Corporation
A Primary Side Current Balancing Scheme for Multiple CCF Lamp Operation	US	Issued	Jul 30, 2007	11830685	Jul 7, 2009	7557517	Microsemi Corporation
Method and Apparatus to Control Display Brightness with Ambient Light Correction	US	Issued	Dec 27, 2004	11023295	Dec 23, 2008	7468722	Microsemi Corporation
Method and Apparatus to Control Display Brightness with Ambient Light Correction	US	Issued	Dec 17, 2008	12336990	Jul 17, 2012	8223117	Microsemi Corporation
Full-Bridge and Half-Bridge Compatible Driver Timing Schedule for Direct Drive Backlight System	US	Issued	Mar 25, 2005	11090246	Sep 26, 2006	7112929	Microsemi Corporation
Full-Bridge and Half-Bridge Compatible Driver Timing Schedule for Direct Drive Backlight System	US	Issued	Sep 25, 2006	11526324	Jan 12, 2010	7646152	Microsemi Corporation
Dual-Slope Brightness Control for Transflective Displays	US	Issued	Jun 6, 2005	11145877	Jul 13, 2010	7755595	Microsemi Corporation
Balancing Transformers for Ring Balancer	US	Issued	Oct 5, 2004	10959667	Nov 13, 2007	7294971	Microsemi Corporation
Balancing Transformers for Multi-lamp Operation	US	Issued	Nov 9, 2007	11937693	Jul 14, 2009	7560875	Microsemi Corporation
Balancing Transformers for Multi-lamp Operation	US	Issued	Jul 2, 2009	12497401	Apr 26, 2011	7932683	Microsemi Corporation
Balancing Transformers for Multi-lamp Operation - Publication - US 2011/0181204A1	US	Issued	Apr 11, 2011	13084229	Jul 17, 2012	8222836	Microsemi Corporation

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue date</b>	<b>Patent #</b>	<b>Owner<sup>1</sup></b>
Method and Apparatus to Drive LED Arrays Using Time Sharing Technique	US	Issued	Dec 14, 2004	11011752	Jul 3, 2007	7239087	Microsemi Corporation
Zigzag Topology for Balancing Current Among Paralleled Gas Discharge Lamps	US	Issued	Mar 31, 2005	11095294	Jun 13, 2006	7061183	Microsemi Corporation
Striking and Open Lamp Regulation for CCFL Controller (Strike via duty rate control not overlapping frequency control)	US	Issued	Jul 5, 2007	11773611	Aug 4, 2009	7569998	Microsemi Corporation
Striking and Open Lamp Regulation for CCFL Controller (Strike via duty rate control not overlapping frequency control)	US	Issued	Jul 13, 2009	12501700	Jan 22, 2013	8358082	Microsemi Corporation
Method and Apparatus to Compensate for Supply Voltage Variations in a PWM Based Voltage Regulator	US	Issued	Oct 2, 2007	11866262	Jan 11, 2011	7868603	Microsemi Corporation
Burst Mode Boost Converter with Adaptive Coil Peak Current	US	Issued	Dec 20, 2007	11961176	Mar 15, 2011	7906943	Microsemi Corporation
Feedback of Output Voltage Error Via Current Sense Winding	US	Issued	Nov 24, 2011	13304349	Jun 24, 2014	8760894	Microsemi Corporation

Patent Applications

<b>Title</b>	<b>Country</b>	<b>Status</b>	<b>Date filed</b>	<b>Application #</b>	<b>Issue Date</b>	<b>Patent #</b>	<b>Owner</b>
HIGH-SPEED AES WITH TRANSFORMED KEYS	US	Pending	Apr 20, 2015	62149855			Microsemi Corporation
Secure Digest for PLD Configuration Data	US	Pending	Aug 12, 2013	13964692			Microsemi SoC Corp.
FPGA RAM BLOCKS OPTIMIZED FOR USE AS REGISTER FILES	US	Pending	May 21, 2013	13898827			Microsemi SoC Corp.
NON-VOLATILE PROGRAMMABLE MEMORY CELL AND ARRAY FOR PROGRAMMABLE LOGIC ARRAY	US	Pending	Jan 15, 2014	14155752			Microsemi SoC Corp.

<u>Title</u>	<u>Country</u>	<u>Status</u>	<u>Date filed</u>	<u>Application #</u>	<u>Issue Date</u>	<u>Patent #</u>	<u>Owner</u>
Circuit and Method for Reducing Bvii on Highly Overdriven Devices IN APPLICATION PROGRAMMING (IAP)	US	Allowed	May 4, 2015	14703710			Micosemi SoC Corp.
BACKGROUND AUTOREFRESH APPARATUS AND METHOD FOR NON-VOLATILE MEMORY ARRAY	US	Pending	Mar 13, 2014	14208513			Micosemi SoC Corp.
NON-VOLATILE PUSH-PULL NON-VOLATILE MEMORY CELL HAVING REDUCED OPERATION DISTURB AND PROCESS FOR MANUFACTURING SAME	US	Pending	Feb 28, 2014	14193772			Micosemi SoC Corp.
Method for Implementing "Instant Boot" in a Customizable SoC	US	Pending	Jul 2, 2015	14790248			Micosemi SoC Corp.
SYSTEM ON A CHIP FPGA SPATIAL DEBUGGING USING SINGLE SNAPSHOT	US	Pending	Mar 14, 2014	14212508			Micosemi SoC Corp.
METHOD OF IMPROVING FPGA SECURITY USING AUTHORIZATION CODES	US	Pending	Sep 15, 2014	14485833			Micosemi SoC Corp.
HIGH VOLTAGE DEVICE FABRICATED USING LOW-VOLTAGE PROCESSES	US	Pending	Nov 19, 2014	14547336			Micosemi SoC Corp.
METHODS FOR CONTROLLING THE USE OF INTELLECTUAL PROPERTY IN INDIVIDUAL INTEGRATED CIRCUIT DEVICES	US	Pending	Feb 25, 2015	14630901			Micosemi SoC Corp.
METHODS FOR CONTROLLING THE USE OF INTELLECTUAL PROPERTY IN INDIVIDUAL INTEGRATED CIRCUIT DEVICES	US	Pending	Feb 26, 2015	14632860			Micosemi SoC Corp.
Gate Boosting Transmission Gate APPARATUS AND METHOD FOR DETECTING AND PREVENTING LASER INTERROGATION OF AN FPGA INTEGRATED CIRCUIT	US	Pending	May 4, 2015	14703720			Micosemi SoC Corp.
	US	Pending	Jul 2, 2015	14790982			Micosemi SoC Corp.

<u>Title</u>	<u>Country</u>	<u>Status</u>	<u>Date filed</u>	<u>Application #</u>	<u>Issue Date</u>	<u>Patent #</u>	<u>Owner</u>
SECURE BOOT FOR INSECURE PROCESSORS	US	Pending	Jul 3, 2014	14322953			Microsemi SoC Corp.
SECURITY METHOD AND APPARATUS TO PREVENT REPLAY OF EXTERNAL MEMORY DATA TO INTEGRATED CIRCUITS HAVING ONLY ONE-TIME PROGRAMMABLE NON-VOLATILE MEMORY	US	Pending	Nov 16, 2015	14941991			Microsemi SoC Corp.
Identifying Integrated Circuit Origin Using Tooling Signature	US	Pending	Jun 23, 2015	14747758			Microsemi SoC Corp.
MULTI-STATE CONFIGURATION RAM CELL	US	Pending	Nov 24, 2015	14950114			Microsemi SoC Corp.
MULTI-STATE CONFIGURATION RAM CELL	US	Pending	Dec 18, 2014	62093697			Microsemi SoC Corp.
COMPACT RERAM BASED FPGA	US	Pending	Mar 12, 2015	62132333			Microsemi SoC Corp.
RESISTIVE RANDOM ACCESS MEMORY CELLS	US	Pending	Aug 26, 2015	14835928			Microsemi SoC Corp.
PHYSICAL LAYER PROCESSING OF TIMESTAMPS AND MAC SECURITY	US	Allowed	Nov 7, 2012	13671480			Microsemi Communications, Inc.
DELAY MEASUREMENT IN A POINT TO MULTIPPOINT SYSTEM	US	Allowed	Sep 27, 2013	14040320			Microsemi Communications, Inc.
SYSTEM AND METHOD FOR SQUELCHING A RECOVERED CLOCK IN AN ETHERNET NETWORK	US	Pending	May 14, 2012	13471195			Microsemi Communications, Inc.
PACKET-BASED TIMING MEASUREMENT	US	Pending	Feb 3, 2014	14171698			Microsemi Communications, Inc.
TIMING SYNCHRONIZATION FOR NETWORKS WITH RADIO LINKS	US	Pending	Jan 21, 2014	14160449			Microsemi Communications, Inc.
PACKET PROTOCOL PROCESSING WITH PRECISION TIMING PROTOCOL SUPPORT	US	Pending	Sep 23, 2014	14494438			Microsemi Communications, Inc.

<u>Title</u>	<u>Country</u>	<u>Status</u>	<u>Date filed</u>	<u>Application #</u>	<u>Issue Date</u>	<u>Patent #</u>	<u>Owner</u>
NETWORK DISTRIBUTED PACKET-BASED SYNCHRONIZATION	US	Pending	Sep 30, 2014	14503082			Microsemi Communications, Inc.
PTP TRANSPARENT CLOCK SYSTEM UPGRADE SOLUTION	US	Pending	Sep 30, 2014	14502877			Microsemi Communications, Inc.
Prevention of Covert Access After Successful Completion of Authentication	US	Pending	Jul 21, 2015	62195271			Microsemi Corporation
RF POWER MULTL-CHIP MODULE PACKAGE	US	Pending	Jan 13, 2014	14153948			Microsemi Corporation
PSEUDO SELF ALIGNED RADHARD MOSFET AND PROCESS OF MANUFACTURE	US	Pending	Jul 22, 2014	14337865			Microsemi Corporation
SIC Transient Voltage Suppressor	US	Pending	Feb 13, 2015	14622309			Microsemi Corporation
Solid-State Photodetector	US	Pending	Nov 10, 2015	14936716			Microsemi Corporation
HIGH EFFICIENCY PFC POWER CONVERTER	US	Pending	Jul 29, 2014	14446115			Microsemi Corporation
VOLTAGE REGULATOR WITH SWITCHING AND LOW DROPOUT MODES	US	Pending	Aug 7, 2014	14454134			Microsemi Corporation
LOAD BALANCING REVERSE POWER SUPPLY	US	Pending	Apr 20, 2015	14691132			Microsemi Corporation
INDUCTIVE DISPLACEMENT SENSOR	US	Pending	Apr 28, 2015	14697836			Microsemi Corporation
BROADCAST BUS FRAME FILTER	US	Pending	Nov 12, 2015	62254490			Microsemi Corporation
Multi-Channel Low Power Wake-up System	US	Pending	Sep 10, 2014	14482595			Microsemi Corporation
RADIO WAKE-UP SYSTEM WITH MULTI-MODE OPERATION	US	Pending	Sep 10, 2014	14482527			Microsemi Corporation
SPRAY COATING APPARATUS AND FIXTURES. (WHT-005)	US	Pending	Apr 23, 2007	11789455			Microsemi Corporation
SECURE STORAGE DEVICES, AUTHENTICATION DEVICES, AND METHODS THEREOF	US	Pending	Oct 7, 2014	14508655			Microsemi Corporation



<u>Title</u>	<u>Country</u>	<u>Status</u>	<u>Date filed</u>	<u>Application #</u>	<u>Issue Date</u>	<u>Patent #</u>	<u>Owner</u>
SYSTEMS AND METHODS FOR A FULLY ISOLATED ENCRYPTION KEY FILLING PORT	US	Pending	Dec 2, 2014	14557729			Microsemi Corporation
MULTI-VOLTAGE TO ISOLATED LOGIC LEVEL TRIGGER	US	Pending	Jul 22, 2015	62195776			Microsemi Corporation
SQUARE LAW EXTENSION TECHNIQUE FOR HIGH SPEED RADIO DETECTION	US	Pending	Apr 11, 2013	13860875			Microsemi Corporation
HIGH VOLTAGE RELAY SYSTEMS AND METHODS	US	Pending	Aug 9, 2015	62202902			Microsemi Corporation
HIGH VOLTAGE RELAY SYSTEMS AND METHODS	US	Pending	Aug 9, 2015	62202905			Microsemi Corporation
LOG-LINEAR POWER DETECTOR	US	Pending	Dec 22, 2014	62095163			Microsemi Corporation
UNIVERSAL ASYMMETRY COMPENSATION FOR PACKET TIMING PROTOCOLS	US	Allowed	Jan 7, 2014	14149370			Microsemi Frequency and Time Corporation
VOLTAGE REGULATOR WITH CHARGE PUMP FOR GENERATING SECOND VOLTAGE SOURCE	US	Pending	Oct 3, 2014	14505688			Microsemi Semiconductor (U.S.) Inc.
ACOUSTIC ALARM DETECTOR	US	Pending	Jul 9, 2015	62190282			Microsemi Semiconductor (U.S.) Inc.
Acoustic Echo Path Change Detection Apparatus and Method	US	Pending	Sep 25, 2015	62232480			Microsemi Semiconductor (U.S.) Inc.
Comfort Noise Generation Apparatus and Method	US	Pending	Sep 25, 2015	62232489			Microsemi Semiconductor (U.S.) Inc.
ETHERNET LINK INCORPORATING FORWARD ERROR CORRECTION	US	Pending	Oct 30, 2014	14527795			Microsemi Frequency and Time Corporation
HIGH EFFICIENCY LED DRIVING METHOD	US	Pending	Jan 29, 2015	14608242			Microsemi Corporation
HYSTERETIC CURRENT MODE CONTROL CONVERTER WITH LOW, MEDIUM AND HIGH CURRENT THRESHOLDS	US	Pending	Feb 4, 2014	14171843			Microsemi Corporation
HIGH EFFICIENCY INDUCTOR-LESS LED DRIVE METHOD	US	Pending	Sep 23, 2014	14493411			Microsemi Corporation

<u>Title</u>	<u>Country</u>	<u>Status</u>	<u>Date filed</u>	<u>Application #</u>	<u>Issue Date</u>	<u>Patent #</u>	<u>Owner</u>
MULTIPLE OUTPUT SYNCHRONOUS POWER CONVERTER	US	Pending	Dec 3, 2014	14559135			Microsemi Corporation
CURRENT SENSING SYSTEM AND METHOD	US	Pending	Mar 24, 2015	14666326			Microsemi Corporation
SYNCHRONOUSLY REGULATED LED DRIVE METHOD	US	Pending	Mar 24, 2015	62137377			Microsemi Corporation
APPARATUS AND METHOD FOR DETECTION OF OFF-HOOK PHONE IN REVERSE POWER FEEDING ARCHITECTURE	US	Pending	May 13, 2015	14710611			Microsemi Corporation
DISTRIBUTED TWO-STEP CLOCK	US	Pending	Mar 14, 2014	14210913			Microsemi Frequency and Time Corporation
CHIP-SCALE ATOMIC GYROSCOPE	US	Pending	Nov 17, 2014	14542844			Microsemi Frequency and Time Corporation
CHIP-SCALE ATOMIC GYROSCOPE	US	Pending	Apr 10, 2014	14250059			Microsemi Frequency and Time Corporation
METHOD AND SYSTEM FOR SYNCHRONIZING BASE STATION AND ESTABLISHING LOCATION	US	Pending	Dec 23, 2014	14582147			Microsemi Frequency and Time Corporation
TIMESTAMP PREDICTOR FOR PACKETS OVER A SYNCHRONOUS PROTOCOL	US	Pending	May 26, 2015	14721920			Microsemi Communications, Inc.
STALL PIPELINE ARCHITECTURE IN A TIMING ACCURATE BLOCK	US	Pending	Jun 11, 2015	62174299			Microsemi Communications, Inc.

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