

PATENT ASSIGNMENT COVER SHEET

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 Stylesheet Version v1.2

EPAS ID: PAT5297839

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	RELEASE OF SECURITY INTEREST IN CERTAIN PATENT RIGHTS	
CONVEYING PARTY DATA		
Name		Execution Date
JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT		12/21/2018
RECEIVING PARTY DATA		
Name:	MICROCHIP TECHNOLOGY INCORPORATED	
Street Address:	2355 W CHANDLER BOULEVARD	
City:	CHANDLER	
State/Country:	ARIZONA	
Postal Code:	85224	
Name:	ATMEL CORPORATION	
Street Address:	2355 W CHANDLER BOULEVARD	
City:	CHANDLER	
State/Country:	ARIZONA	
Postal Code:	85224	
PROPERTY NUMBERS Total: 244		
Property Type	Number	
Application Number:	12560906	
Application Number:	12642089	
Application Number:	13866700	
Application Number:	13420200	
Application Number:	13830891	
Application Number:	12597619	
Application Number:	13883757	
Application Number:	13977723	
Application Number:	13049932	
Application Number:	14097370	
Application Number:	13089786	
Application Number:	12529414	
Application Number:	14007073	
Application Number:	14115541	
Application Number:	14128998	

PATENT

Property Type	Number
Application Number:	14616076
Application Number:	12794153
Application Number:	12682303
Application Number:	13637131
Application Number:	14885651
Application Number:	14254098
Application Number:	12560855
Application Number:	12827592
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Application Number:	13711105
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Application Number:	11428670
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Application Number:	12899229
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Application Number:	11752615
Application Number:	14144174

Property Type	Number
Application Number:	13786124
Application Number:	13849253
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Application Number:	13332945
Application Number:	13475644
Application Number:	13544680
Application Number:	15042390
Application Number:	13331022
Application Number:	13475691
Application Number:	13475750
Application Number:	13556968
Application Number:	13556805
Application Number:	13445748
Application Number:	14305683
Application Number:	13479068
Application Number:	13922871
Application Number:	13889692
Application Number:	15209388
Application Number:	16178886
Application Number:	13928099
Application Number:	14196958
Application Number:	14061338
Application Number:	14977132
Application Number:	15864928
Application Number:	15089358
Application Number:	14093899
Application Number:	14885061
Application Number:	13932767
Application Number:	13928905
Application Number:	14075412
Application Number:	13955352
Application Number:	15868706
Application Number:	15875827
Application Number:	13930754
Application Number:	15477866
Application Number:	16042872

Property Type	Number
Application Number:	13930454

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:	15286.082
NAME OF SUBMITTER:	QUI LU FLOOD
SIGNATURE:	/Qui Lu Flood/
DATE SIGNED:	12/21/2018

Total Attachments: 23

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RELEASE OF SECURITY INTEREST IN CERTAIN PATENT RIGHTS

This RELEASE OF SECURITY INTEREST IN CERTAIN PATENT RIGHTS (this "Partial Release"), dated as of December 21, 2018, is executed by JPMorgan Chase Bank, N.A., a national banking association, as Administrative Agent (in such capacity, the "Administrative Agent"), in favor of Microchip Technology Incorporated, a Delaware corporation ("Microchip"), and Atmel Corporation, a Delaware corporation ("Atmel") (each a "Debtor", and collectively the "Debtors"). All capitalized terms used in this Partial Release and not otherwise defined herein, shall have the respective meanings given to such terms in the Patent Security Agreement (defined below).

RECITALS

A. Pursuant to that certain (i) Amended and Restated Pledge and Security Agreement, dated as of May 29, 2018, by and among Microchip, the subsidiaries of Microchip party thereto, and the Administrative Agent, and (ii) Grant of Security Interest in Patent Rights, dated as of May 29, 2018 (the "Patent Security Agreement"), executed by Debtors in favor of Administrative Agent, Debtors granted to Administrative Agent a security interest in the Patent Collateral (defined below).

B. The Patent Security Agreement was recorded with the Patent Division of the United States Patent and Trademark Office on June 25, 2018, at Reel/Frame 046426/0001 to evidence the security interest granted under the Patent Security Agreement.

C. Administrative Agent agrees to execute this Partial Release in order to evidence the release of its security interest solely in the Patent Collateral owned by Debtors specified below.

AGREEMENT

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

(a) Administrative Agent expressly releases all of Administrative Agent's right, title and interest in, to and under the Patents referred to on Schedule A and Schedule B hereto (collectively, the "Patent Collateral").

(b) Administrative Agent represents and warrants that it has the full power and authority to execute this Partial Release.

(c) Administrative Agent authorizes and requests the Patent Division of the United States Patent and Trademark Office to record this Partial Release.

(d) This Partial Release applies solely to the Patent Collateral as described above owned by Debtors. The Patent Security Agreement shall continue in full force and effect as between Administrative Agent and Debtors and against all remaining Patents referenced therein.

[Signature Page Follows]

IN WITNESS WHEREOF, Administrative Agent has executed and delivered this Partial Release
as of the day and year first above written.

JPMORGAN CHASE BANK, N.A.,
as Administrative Agent

By: Caitlin Stewart

Name: Caitlin Stewart

Title: Executive Director

[Release of Security Interest in Certain Patent Rights]

PATENT
REEL: 047976 FRAME: 0893

SCHEDULE A**United States
Patents & Patent Applications**

Patent / Publication Number	Application Number	Title	Filed Date
<u>8,378,660</u>	12/560,906	Programmable Integrated Circuit Device to Support Inductive Sensing	2009-09-16
<u>8,427,450</u>	12/642,089	Capacitive Touch Sensing and Light Emitting Diode Drive Matrix	2009-12-18
<u>8,780,068</u>	13/866,700	Capacitive Touch Sensing and Light Emitting Diode Drive Matrix	2013-04-19
<u>8,972,214</u>	13/420,200	Touch Sense Determined by Characterizing Impedance Changes in a Transmission Line	2012-03-14
<u>9,207,820</u>	13/830,891	Method and System for Multi-Touch Decoding	2013-03-14
<u>8,345,015</u>	12/597,619	Sensor apparatus and method for generating signals indicative of the position or change in position of limbs	2008-04-28
<u>9,322,861</u>	13/883,757	Method and Sensor Device for the Detection of a Gripping of a Hand-Held Device	2011-11-07
<u>9,733,290</u>	13/977,723	Sensor Device and Method for Capacitive Approximation Detection	2014-02-24
<u>8,600,688</u>	13/049,932	Geometrically Based Button Discrimination in Capacitive Sensing Applications	2011-03-17
	14/097,370	Force Sensing X-Y Touch Sensor	2013-12-05
<u>8,542,215</u>	13/089,786	Mutual Capacitance Measurement in a Mutli-Touch Input Device	2011-04-19
<u>9,074,310</u>	12/529,414	CAPACITATIVE SENSOR DEVICE	2009-07-03
<u>9,354,263</u>	14/007,073	Measuring Device and Method for the Detection of an Approach	2012-03-22
<u>9,360,975</u>	14/115,541	Capacitive Sensor Device With Additional Sensor Electrode For Determining Mode Of Operation	2014-05-20
<u>9,702,902</u>	14/128,998	Printed Circuit Board Comprising an Electrode Configuration of a Capacitive Sensor	2012-06-20
<u>9,665,725</u>	14/616,076	Gesture Based Access Control Method and System	2015-02-06
<u>8,310,381</u>	12/794,153	Capacitive Key Touch Sensing Using Analog Inputs and Digital Outputs	2010-06-04
<u>8,558,791</u>	12/682,303	Sensor System for Generating Signals that are Indicative of the Position or Change of Position of Limbs	2009-08-07
<u>9,166,581</u>	13/637,131	Electrode Device, Circuit Arrangement and Method for the Approach and Touch Detection	2011-03-24
	14/885,651	Electrode Device, Circuit Arrangement and Method for the Approach and Touch Detection	2015-10-16
<u>9,430,107</u>	14/254,098	Determining Touch Locations and Forces Thereto on a Touch and Force Sensing Surface	2014-04-16

Patent / Publication Number	Application Number	Title	Filed Date
<u>8,154,317</u>	12/560,855	Integrated Circuit Device to Support Inductive Sensing	2009-09-16
<u>8,723,833</u>	12/827,592	Capacitive Touch System with Noise Immunity	2010-06-30
<u>9,141,174</u>	13/947,424	Electrode System for Proximity Detection and Hand-Held Device with Electrode System	2013-07-22
<u>8,493,074</u>	12/519,185	Electrode System for Proximity Detection and Hand-Held Device with Electrode System	2009-06-30
<u>8,575,948</u>	12/529,426	Touch and approach detection with capacitive sensors	2011-09-22
<u>9,124,274</u>	13/513,076	Device and Method for Detecting a Clasp of a Hand-Held Device by a Hand	2010-12-13
<u>9,236,860</u>	12/745,093	Sensor Device and Method for Grip and Proximity Detection	2010-05-27
<u>9,442,143</u>	13/977,724	Capacitive Proximity Sensor as well as Method for Capacitive Approximation Detection	2014-02-12
<u>9,442,175</u>	14/129,351	Capacitive Sensor Device and Method for Calibrating a Capacitive Sensor Device	2012-06-28
<u>9,587,964</u>	14/301,462	Capacitive Proximity Detection Using Delta-Sigma Conversion	2014-06-11
<u>9,298,327</u>	14/101,014	Integrated Shielding In Touch Sensors	2013-12-09
<u>9,171,188</u>	14/540,319	Charge Measurement	2014-11-13
<u>9,823,285</u>	14/919,889	Charge Measurement	2015-10-22
<u>8,723,586</u>	13/667,171	Charge Measurement	2012-11-02
<u>9,727,168</u>	15/224,132	Touch Sensor Scanning for Display Embedded Touch Sensors	2016-07-29
<u>9,448,659</u>	13/827,713	Simultaneous Touch Sensor Scanning and Display Refreshing for Minimizing Display Degradation for Display-Embedded Touch Sensors	2013-03-14
<u>9,046,942</u>	13/486,562	Combined Accumulator and Maximum/Minimum Comparator	2012-06-01
<u>9,274,656</u>	13/929,307	Fast Scanning for Mutual Capacitance Screens	2013-06-27
<u>9,804,722</u>	15/057,878	Fast Scanning for Mutual Capacitance Screens	2016-03-01
<u>9,542,046</u>	13/927,579	Changing the Detection Range of a Touch Sensor	2013-06-26
	15/342,483	Method for Changing the Detection Range of a Touch Sensor	2016-11-03
<u>9,442,599</u>	13/950,893	System and Method for Using Signals Resulting From Signal Transmission in a Touch Sensor	2013-07-25
<u>9,086,770</u>	13/863,036	Touch Sensor with High-Density Macro-Feature Design	2013-04-15
<u>9,916,047</u>	13/618,068	Pattern of Electrodes for a Touch Sensor	2012-09-14
<u>9,647,658</u>	13/671,106	Resistive Interpolation for a Touch Sensor with Opaque Conductive Material	2012-11-07

Patent / Publication Number	Application Number	Title	Filed Date
	13/828,021	Reduction of Touch Sensor Pattern Visibility Using Beamsplitters	2013-03-14
<u>9,465,490</u>	14/031,743	Curved Surface Sensor Pattern	2013-09-19
<u>9,310,944</u>	13/951,300	Oncell Single-Layer Touch Sensor	2013-07-25
<u>9791992</u>	15/083,417	Oncell Single-Layer Touch Sensor	2016-03-29
	15/134,044	Touch Sensor Mesh Designs	2016-04-20
<u>9,557,361</u>	13/904,904	Edgeless Single-Layer Touch Sensor	2013-05-29
	15/419,737	Edgeless Single-Layer Touch Sensor	2017-01-30
<u>9,939,965</u>	13/711,105	Sending Drive Signals with an Increased Number of Pulses to Particular Drive Lines	2012-12-11
	15/927,827	Sending Drive Signals with an Increased Number of Pulses to Particular Drive Lines	2018-03-21
<u>9,927,901</u>	15/177,864	Force Sensor Pattern	2016-06-09
	15/918,310	Force Sensor Pattern	2018-03-12
<u>9,880,674</u>	13/931,181	Pattern of Electrodes for a Touch Sensor	2013-06-28
	15/881,996	Pattern of Electrodes for a Touch Sensor	2018-01-29
<u>9,128,577</u>	14/102,222	Hybrid Capacitive Touch System Design	2013-12-10
	14/930,480	Low to medium speed AC-coupled serial interface	2015-11-02
<u>9,292,144</u>	14/283,428	Touch-Sensor-Controller Sensor Hub	2014-05-21
<u>8,736,551</u>	13/548,049	Touch-Sensor-Controller Hub	2012-07-12
<u>9,152,285</u>	13/954,232	Position Detection of an Object Within Proximity of a Touch Sensor	2013-07-30
<u>9,298,222</u>	14/135,329	Touch Sensor with Plastic Lens Cover	2013-12-18
<u>9825104</u>	14/204,949	Low-Birefringence Substrate for Touch Sensor	2014-03-11
<u>9,927,927</u>	14/270,189	Implementing a Virtual Controller Outside an Area of a Touch Sensor	2014-05-05
	15/921,004	Implementing a Virtual Controller Outside an Area of a Touch Sensor	2018-03-14
<u>9,395,836</u>	13/964,603	System and Method for Reducing Borders of a Touch Sensor	2013-08-12
<u>8,988,376</u>	13/665,520	Charge Compensation for Capacitive Touch Sensor Nodes	2012-10-31
<u>9,274,152</u>	13/753,755	Current-Based Charge Compensation in a Touch Sensor	2013-01-30
<u>9,081,454</u>	13/852,816	Touch Sensor with Capacitive Voltage Driver	2013-03-28
<u>9,436,328</u>	14/310,864	Single-Layer Touch Sensor	2014-06-20
<u>9,760,207</u>	15/256,188	Single-Layer Touch Sensor	2016-09-02
<u>8,643,621</u>	13/614,923	Touch-Sensitive User Interface	2012-09-13
<u>8,279,189</u>	12/539,421	Touch-Sensitive User Interface	2009-08-11
<u>8,730,199</u>	12/554,552	Capacitive Control Panel	2009-09-04
<u>9,563,317</u>	14/278,864	Capacitive Control Panel	2014-05-22

Patent / Publication Number	Application Number	Title	Filed Date
<u>9,692,439</u>	13/593,982	Apparatus Using a Differential Analog-to-Digital Converter	2012-08-24
<u>8,253,706</u>	12/492,856	Apparatus Using a Differential Analog-to-Digital Converter	2009-06-26
<u>8,621,942</u>	12/534,753	Force Sensor with Compressible Electrode	2009-08-03
<u>9,916,045</u>	12/605,779	Sense Electrode Design	2009-10-26
	15/915,726	Sense Electrode Design	2018-03-08
<u>8,451,237</u>	12/498,317	Sensitivity Control as a Function of Touch Shape	2009-07-06
<u>8,797,290</u>	12/604,174	Sense Electrode Spine Interpolation	2009-10-22
<u>9,836,167</u>	12/534,748	Electrode Layout for Touch Screens	2009-08-03
<u>8,797,280</u>	12/787,732	Systems and Methods for Improved Touch Screen Response	2010-05-26
<u>8,786,572</u>	12/939,794	Touch Position-Sensor Panel and Method	2010-11-04
<u>8,823,656</u>	12/871,687	Touch Tracking Across Multiple Touch Screens	2010-08-30
<u>9,252,768</u>	12/880,836	Position-Sensing Panel	2010-09-13
<u>9,651,355</u>	13/846,458	Proximity Detection	2013-03-18
<u>8,400,209</u>	12/910,484	Proximity Detection	2010-10-22
	15/595,471	Proximity Detection	2017-05-15
<u>9,223,445</u>	12/959,166	Position-Sensing and Force Detection Panel	2010-12-02
	16/129,863	Position-Sensing and Force Detection Panel	2018-09-13
	14/981,510	Position-Sensing and Force Detection Panel	2015-12-28
<u>9,465,491</u>	14/057,107	Capacitive Touch Sensor for Identifying a Fingerprint	2013-10-18
<u>8,564,314</u>	12/938,050	Capacitive Touch Sensor for Identifying a Fingerprint	2010-11-02
<u>8,797,285</u>	13/089,061	Panel	2011-04-18
<u>8,946,574</u>	13/312,405	Two-Layer Sensor Stack	2011-12-06
<u>9,411,481</u>	11/734,813	Hybrid Capacitive Touch Screen Element	2007-04-13
<u>7,903,092</u>	11/750,430	Capacitive Keyboard with Position Dependent Reduced Keying Ambiguity	2007-05-18
<u>8,791,910</u>	13/043,231	Capacitive Keyboard with Position-Dependent Reduced Keying Ambiguity	2011-03-08
<u>9,128,554</u>	14/015,140	Chained Differential Sensing for Touch Sensors	2013-08-30
<u>8,797,281</u>	12/816,900	Capacitive Touch-Screen Panel with Multiple Sense Units and Related Methods	2010-06-16
	14/448,472	Capacitive Touch-Screen Panel with Multiple Sense Units and Related Methods	2014-07-31
<u>8,766,929</u>	12/780,436	Panel for Position Sensors	2010-05-14
<u>9,244,570</u>	13/351,597	System and Method for Reducing the Effects of Parasitic Capacitances	2012-01-17
<u>9,634,660</u>	13/330,257	Touch Sensor with Reduced Anti-Touch Effects	2011-12-20
<u>8,711,292</u>	13/422,410	Integrated Touch Screen	2012-03-16
<u>9,608,047</u>	14/254,979	Integrated Touch Screen	2014-04-17
	14/509,525	Integrated Touch Screen	2014-10-08

Patent / Publication Number	Application Number	Title	Filed Date
<u>9,471,185</u>	13/400,810	Flexible Touch Sensor Input Device	2012-02-21
<u>9,287,865</u>	13/207,108	Capacitive Touch Sensor Control Unit With Sampling Capacitors For Differential Integration	2011-08-10
<u>8,421,666</u>	13/208,234	Analog to Digital Converter with Adjustable Conversion Window	2011-08-11
<u>9,310,941</u>	13/252,533	Touch Sensor Input Tool With Offset Between Touch Icon And Input Icon	2011-10-04
<u>9,024,645</u>	13/312,369	Substantially Edgeless Touch Sensor	2011-12-06
<u>9,207,814</u>	13/325,239	Single-Layer Touch Sensor	2011-12-14
<u>9,507,447</u>	13/314,690	Touch Sensor With Inductive Charging	2011-12-08
<u>9,965,106</u>	13/350,018	Touch Screen with Electrodes Positioned Between Pixels	2012-01-13
<u>8,860,690</u>	13/327,381	Touch Sensor with Capacitive Nodes Having a Capacitance that is Approximately the Same	2011-12-15
<u>9,354,760</u>	14/510,220	Touch Sensor with Capacitive Nodes Having a Capacitance that is Approximately the Same	2014-10-09
<u>8,502,796</u>	13/595,595	Interpolated Single-Layer Touch Sensor	2012-08-27
<u>9,231,588</u>	13/873,979	Touchscreen Routing Flow for Single Layer Pattern	2013-04-30
<u>9,411,472</u>	13/314,858	Touch Sensor with Adaptive Touch Detection Thresholding	2011-12-08
<u>8,786,554</u>	11/750,588	Priority and Combination Suppression Techniques (PST/CST) for a Capacitive Keyboard	2007-05-18
<u>8,432,173</u>	13/118,280	Capacitive Position Sensor	2011-05-27
<u>7,830,160</u>	12/317,305	Capacitive Position Sensor	2008-12-22
<u>8,502,547</u>	12/939,816	Capacitive Sensor	2010-11-04
<u>7,952,367</u>	12/703,614	Capacitive Position Sensor	2010-02-10
<u>7,821,274</u>	12/114,709	Capacitive Position Sensor	2008-05-02
<u>7,986,152</u>	12/898,153	Capacitive Position Sensor	2010-10-05
<u>7,808,255</u>	12/061,483	Two-Dimensional Position Sensor	2008-04-02
<u>8,624,609</u>	12/873,905	Two-Dimensional Position Sensor	2010-09-01
<u>9,081,572</u>	14/299,032	Proximity Sensor	2014-06-09
<u>7,952,366</u>	12/179,769	Proximity Sensor	2008-07-25
<u>8,749,251</u>	13/116,764	Proximity Sensor	2011-05-26
<u>9,600,124</u>	12/671,501	Sensor and Method of Sensing	2010-04-08
<u>8,536,880</u>	12/675,732	Capacitive Sensor with Additional Noise-Registering Electrode	2010-04-08
<u>8,970,229</u>	14/027,838	Capacitive Sensor with Additional Noise-Registering Electrode	2013-09-16
<u>9823784</u>	12/421,705	Capacitive Touch Screen with Noise Suppression	2009-04-10
	15/796,985	Capacitive Touch Screen with Noise Suppression	2017-10-30
<u>8,526,767</u>	12/254,043	Gesture Recognition	2008-10-20
<u>9,122,947</u>	13/974,977	Gesture Recognition	2013-08-23
<u>8,659,557</u>	12/255,610	Touch Finding Method and Apparatus	2008-10-21
<u>8,866,790</u>	12/255,620	Multi-Touch Tracking	2008-10-21
<u>8,056,044</u>	12/254,859	Signal Processing	2008-10-21

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<u>8,533,654</u>	13/290,807	Signal Processing	2011-11-07
<u>8,605,037</u>	12/255,335	Noise Reduction in Capacitive Touch Sensors	2008-10-21
<u>8,054,090</u>	12/255,998	Noise Handling in Capacitive Touch Sensors	2008-10-22
<u>8,598,894</u>	13/290,931	Noise Handling in Capacitive Touch Sensors	2011-11-07
<u>9,448,267</u>	14/153,821	Noise Measurement in Capacitive Touch Sensors	2014-01-13
<u>8,629,686</u>	13/945,820	Noise Measurement in Capacitive Touch Sensors	2013-07-18
<u>8,610,009</u>	12/501,296	Capacitive Touch Sensors	2009-07-10
<u>8,937,611</u>	14/094,443	Capacitive Touch Sensors	2013-12-02
<u>8,823,675</u>	12/572,944	Capacitive Matrix Touch Sensor	2009-10-02
<u>8,490,013</u>	12/512,903	Method and Apparatus for Single Touch Zoom Using Spiral Rotation	2009-07-30
<u>9,632,628</u>	12/604,944	Interdigitated Touchscreen Electrodes	2009-10-23
<u>8,610,688</u>	13/411,343	Electrode Crossovers	2012-03-02
<u>8,704,779</u>	12/643,622	Multiple Electrode Touch Sensitive Device	2009-12-21
<u>9,141,227</u>	14/257,376	Multiple Electrode Touch Sensitive Device	2014-04-21
<u>7,986,153</u>	12/395,896	Method and Apparatus for Sensing	2009-03-02
<u>9,531,380</u>	13/537,986	Capacitive Sensing	2012-06-29
<u>8,237,456</u>	12/395,880	Capacitive Sensing	2009-03-02
	15/388,774	Capacitive Sensing	2016-12-22
<u>8,830,180</u>	12/421,713	Capacitive Position Sensor	2009-04-10
<u>9,322,633</u>	14/459,610	Capacitive Position Sensor	2014-08-14
<u>10,088,960</u>	14/850,223	Sensor Stack with Opposing Electrodes	2015-09-10
<u>9,041,682</u>	12/605,068	Driving Electrodes with Different Phase Signals	2009-10-23
<u>9,007,332</u>	13/069,084	Position Sensing Panel	2011-03-22
<u>10,044,353</u>	13/206,689	Substantially Edgeless Touch Sensor	2011-08-10
<u>9,501,179</u>	13/198,579	Touch Sensor for Curved or Flexible Surfaces	2011-08-04
<u>9,256,311</u>	13/284,674	Flexible Touch Sensor	2011-10-28
<u>8,847,898</u>	13/226,848	Signal-to-Noise Ratio in Touch Sensors	2011-09-07
<u>8,847,612</u>	13/227,599	Integrated Test System for a Touch Sensor	2011-09-08
	12/859,874	Electronic Ink Touch Sensitive Display	2010-08-20
<u>9,489,072</u>	12/761,238	Noise Reduction in Capacitive Touch Sensors	2010-04-15
<u>9,081,427</u>	12/838,165	Position-Sensing Panel and Method	2010-07-16
<u>8,723,834</u>	12/845,546	Touch Sensitive Screen Configurations	2010-07-28
<u>9,069,423</u>	13/414,377	Buffer-Reference Self-Capacitance Measurement	2012-03-07
<u>9,306,560</u>	13/471,094	Self-Capacitance Detection Using Trans- Conductance Reference	2012-05-14
<u>9,626,045</u>	12/891,329	Position-Sensing Panel and Related Methods	2010-09-27
<u>8,723,818</u>	12/879,693	Touch Screen Poly Layer Electrode Distribution	2010-09-10
<u>9,495,042</u>	12/423,148	Two-Dimensional Position Sensor	2009-04-14
<u>8,576,182</u>	12/552,195	Methods and Apparatuses to Test the Functionality of Capacitive Sensors	2009-09-01
<u>6,466,036</u>	09/390,869	Charge Transfer Capacitance Measurement Circuit	1999-09-07
<u>7,256,714</u>	11/160,885	Capacitive Keyboard with Reduced Keying Ambiguity	2005-07-14

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<u>6,993,607</u>	10/617,602	Capacitive Keyboard with Reduced Keying Ambiguity	2003-07-11
<u>8,049,738</u>	12/915,730	Anisotropic, Resistance-Based Determination of a Position of an Object with Respect to a Touch Screen Element	2010-10-29
<u>8,847,900</u>	13/286,153	Touch Screen Element	2011-10-31
<u>7,825,905</u>	11/422,799	Anisotropic Touch Screen Element	2006-06-07
<u>6,535,200</u>	09/940,006	Capacitive Position Sensor	2001-08-27
<u>6,288,707</u>	09/230,420	Capacitive Position Sensor	1999-01-25
<u>7,295,190</u>	10/851,269	Touch Sensitive Control Panel	2004-05-21
<u>7,932,898</u>	11/532,560	Touch Sensitive Screen	2006-09-18
<u>9,250,751</u>	13/093,685	Touch Sensitive Screen	2011-04-25
<u>7,279,647</u>	11/424,900	Rotary Sensor with Tactile Buttons	2006-06-19
<u>7,821,502</u>	11/428,670	Two-Dimensional Position Sensor	2006-07-05
<u>8,223,133</u>	12/899,353	Two-Dimensional Position Sensor	2010-10-06
<u>8,593,424</u>	13/493,031	Two-Dimensional Position Sensor	2012-06-11
<u>8,102,286</u>	12/899,229	Capacitive Keyboard with Non-Locking Reduced Keying Ambiguity	2010-10-06
<u>7,821,425</u>	11/279,402	Capacitive Keyboard with Non-Locking Reduced Keying Ambiguity	2006-04-12
<u>9,024,790</u>	13/347,312	Capacitive Keyboard with Non-Locking Reduced Keying Ambiguity	2012-01-10
<u>8,619,054</u>	11/752,615	Two-Dimensional Position Screen	2007-05-23
<u>9,927,476</u>	14/144,174	Two-Dimensional Position Screen	2013-12-30
<u>9,864,463</u>	13/786,124	Touch Panel Deformation Compensation	2013-03-05
<u>8,717,325</u>	13/849,253	Detecting Presence of an Object in the Vicinity of a Touch Interface of a Device	2013-03-22
<u>9,342,182</u>	14/268,693	Detecting Presence of an Object in the Vicinity of a Touch Interface of a Device	2014-05-02
<u>9,035,663</u>	13/610,114	Capacitive Position Encoder	2012-09-11
<u>9,317,161</u>	13/302,527	Touch Sensor with Spacers Supporting a Cover Panel	2011-11-22
<u>9,372,580</u>	13/332,945	Enhanced Touch Detection Methods	2011-12-21
<u>8,952,927</u>	13/475,644	Self-Capacitance Measurement with Compensated Capacitance	2012-05-18
<u>9,262,023</u>	13/544,680	Drive Signals for a Touch Sensor	2012-07-09
	15/042,390	Drive Signals for a Touch Sensor	2016-02-12
<u>9,262,019</u>	13/331,022	Touch Sensor with Conductive Lines Having Different Widths	2011-12-20
<u>9,013,444</u>	13/475,691	Self-Capacitance Measurement with Isolated Capacitance	2012-05-18
<u>9,921,691</u>	13/475,750	Burst-Mode Self-Capacitance Measurement with Compensated Capacitance	2012-05-18
<u>9,098,152</u>	13/556,968	Dielectric Layer for Touch Sensor Stack	2012-07-24
<u>9,116,584</u>	13/556,805	Dielectric Layer for Touch Sensor Stack	2012-07-24

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<u>8,896,327</u>	13/445,748	Current Mirror Self-Capacitance Measurement	2012-04-12
<u>9,134,871</u>	14/305,683	Current Mirror Self-Capacitance Measurement	2014-06-16
<u>9,459,737</u>	13/479,068	Proximity Detection Using Multiple Inputs	2012-05-23
<u>9,335,873</u>	13/922,871	Method of Compensating for Retransmission Effects in a Touch Sensor	2013-06-20
<u>9,110,550</u>	13/889,692	Method for Restructuring Distorted Capacitive Touch Data	2013-05-07
<u>10,120,489</u>	15/209,388	Touch Sensor Mesh Designs	2016-07-13
	16/178,886	Touch Sensor Mesh Designs	2018-11-02
<u>9,389,727</u>	13/928,099	Method and System to Determine When a Device is Being Held	2013-06-26
<u>9,354,734</u>	14/196,958	Common-Mode Hover Detection	2014-03-04
<u>9,354,740</u>	14/061,338	Object Orientation Determination	2013-10-23
<u>9864456</u>	14/977,132	Automative Header Invert for Active Stylus	2015-12-21
	15/864,928	Automative Header Invert for Active Stylus	2018-01-08
<u>9,621,135</u>	15/089,358	Voltage Level Shifter	2016-04-01
<u>9,164,136</u>	14/093,899	Capacitive Measurement Circuit for a Touch Sensor Device	2013-12-02
<u>10,067,619</u>	14/885,061	Capacitive Measurement Circuit for a Touch Sensor Drive	2015-10-16
<u>9,207,802</u>	13/932,767	Suppression of Unintended Touch Objects	2013-07-01
<u>9,081,443</u>	13/928,905	Shieldless Touch Sensor Noise Cancellation	2013-06-27
<u>9874980</u>	14/075,412	Dynamic Configuration of Touch Sensor Electrode Clusters	2013-11-08
<u>9870104</u>	13/955,352	Dynamic Clustering of Touch Sensor Electrodes	2013-07-31
<u>10,042,501</u>	15/868,706	Dynamic Clustering of Touch Sensor Electrodes	2018-01-11
<u>10,037,119</u>	15/875,827	Dynamic Configuration of Touch Sensor Electrode Clusters	2018-01-19
<u>9,612,677</u>	13/930,754	Pseudo Driven Shield	2013-06-28
<u>10,031,632</u>	15/477,866	Pseudo Driven Shield	2017-04-03
	16/042,872	Pseudo Driven Shield	2018-07-23
<u>9,535,545</u>	13/930,454	Common Mode Noise Suppression During Hovering and Proximity Detection	2013-06-28

SCHEDULE B**Foreign
Patents & Patent Applications**

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<u>2332256</u>	09741512.9	Programmable Integrated Silicon Device to Support Inductive Sensing	2011-03-16	DE
<u>2332256</u>	09741512.9	Programmable Integrated Silicon Device to Support Inductive Sensing	2011-03-16	NL
<u>2332256</u>	09741512.9	Programmable Integrated Silicon Device to Support Inductive Sensing	2011-03-16	FR
<u>10-1718846</u>	10-2010-7028310	Programmable Integrated Circuit Device to Support Inductive Sensing	2010-12-16	KR
<u>ZL200980131301.5</u>	200980131301.5	Programmable Integrated Silicon Device to Support Inductive Sensing	2011-02-11	CN
<u>I527377</u>	099100712	Capacitive Touch Key and Light Emitting Diode Matrix Sensing and Drive Method, System and Apparatus	2010-01-12	TW
<u>ZL201080004445.7</u>	201080004445.7	Capacitive Touch Key and Light Emitting Diode Matrix Sensing and Drive Method, System and Apparatus	2011-07-12	CN
<u>10-1703077</u>	10-2011-7004833	Capacitive Touch Sensing and Light Emitting Diode Drive Matrix	2011-02-28	KR
<u>2699988</u>	12718508.0	Touch Sense Determined by Characterizing Impedance Changes in a Transmission Line	2013-11-20	IT
<u>2699988</u>	12718508.0	Touch Sense Determined by Characterizing Impedance Changes in a Transmission Line	2013-11-20	NL
<u>2699988</u>	602012006730.6	Touch Sense Determined by Characterizing Impedance Changes in a Transmission Line	2013-11-20	DE
<u>2699988</u>	12718508.0	Touch Sense Determined by Characterizing Impedance Changes in a Transmission Line	2013-11-20	GB
<u>2699988</u>	12718508.0	Touch Sense Determined by Characterizing Impedance Changes in a Transmission Line	2013-11-20	FR
<u>I585625</u>	101113844	Touch Sense Determined by Characterizing Impedance Changes in a Transmission Line	2012-04-18	TW
<u>2542248</u>	12718508.0	Touch Sense Determined by Characterizing Impedance Changes in a Transmission Line	2013-11-20	ES
<u>10-1899895</u>	10-2013-7029623	Touch Sense Determined by Characterizing Impedance Changes in a Transmission Line	2012-04-16	KR
<u>2699988</u>	12718508.0	Touch Sense Determined by Characterizing Impedance Changes in a Transmission Line	2013-11-20	IE
<u>ZL201280019268.9</u>	201280019268.9	Touch Sense Determined by Characterizing Impedance Changes in a Transmission Line	2012-04-16	CN
<u>2831709</u>	13715583.4	Method and System for Multi-Touch Decoding	2013-03-29	FR

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<u>2831709</u>	13715583.4	Method and System for Multi-Touch Decoding	2013-03-29	DE
<u>2831709</u>	13715583.4	Method and System for Multi-Touch Decoding	2013-03-29	IT
<u>2831709</u>	13715583.4	Method and System for Multi-Touch Decoding	2013-03-29	GB
	10-2014-7030456	Method and System for Multi-Touch Decoding	2013-03-29	KR
<u>6255381</u>	2015-503647	Method and System for Multi-Touch Decoding	2013-03-29	JP
<u>I584179</u>	102111326	Method and System for Multi-Touch Decoding	2013-03-29	TW
<u>ZL201380025260.8</u>	201380025260.8	Method and System for Multi-Touch Decoding	2013-03-29	CN
<u>2147364</u>	102007020873	Sensor device, as well as a process for the generation of with respect to the position or position signals indicative of limbs	2007-04-26	DE
<u>2147364</u>	08758350	Sensor Apparatus and Method for Generating Signals Indicative of the Position or Change in Position of Limbs	2008-04-28	GB
<u>101689079</u>	200880022205	Is used for generating the body position or position change of the signal sensor device and method for	2008-04-28	CN
<u>10-1484677</u>	10-2009-7024540	Sensor apparatus and method for generating signals indicative of the position or change in position of limbs	2008-04-28	KR
<u>2147364</u>	08758350	Sensor Apparatus and Method for Generating	2008-04-28	FR
<u>2147364</u>	08758350	Signals Indicative of the Position or Change in Position of Limbs	2008-04-28	NL
<u>5506661</u>	2010-504571	The sensor device and the method of forming the signal which displays the change of position or position of the quarters	2008-04-28	JP
<u>2147364</u>	08758350.6	Sensor Apparatus and Method for Generating	2008-04-28	ES
	102007020873	Sensor device, as well as a process for the generation of with respect to the position or position signals indicative of limbs	2007-04-26	DE
<u>103140820</u>	201180046625.6	Is used for detecting the hand-held device of the grasping method and sensor device	2011-11-07	CN
<u>102010043519</u>	102010043519	Method and sensor device for detection of a straddling of a hand-held device	2010-11-05	DE
<u>10-1815042</u>	10-2013-7008299	Method and Sensor Device for the Detection of a Gripping of a Hand-Held Device	2011-11-07	KR
	11781517.5	Method and Sensor Device for the Detection of a Gripping of a Hand-Held Device	2011-11-07	EP
<u>2544085</u>	12701072.6	Sensor Arrangement for Capacitive Proximity Detection	2013-08-01	ES
<u>10-1829002</u>	10-2013-7020544	Sensor Device and Method for Capacitive Approximation Detection	2012-01-03	KR
	102011002446	Sensor device and method for the capacitive detecting	2011-01-04	DE

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	201610635419.3	Sensor Device and Method for Capacitive Approximation Detection	2016-08-05	CN
	10-2015-7022971	Force Sensing X-Y Touch Sensor	2015-08-24	KR
<u>I614647</u>	103108489	Force Sensing X-Y Touch Sensor	2014-03-11	TW
	14712850.8	Force Sensing X-Y Touch Sensor	2015-09-21	EP
	201480010535.5	Force Sensing X-Y Touch Sensor	2015-08-26	CN
<u>2564297</u>	11718626.2	Mutual Capacitance Measurement in a Multi-Touch Input Device	2011-04-28	FR
<u>2564297</u>	11718626.2	Mutual Capacitance Measurement in a Multi-Touch Input Device	2011-04-28	DE
<u>2564297</u>	11718626.2	Mutual Capacitance Measurement in a Multi-Touch Input Device	2011-04-28	NL
<u>I531947</u>	100114715	Mutual Capacitance Using a CSM	2011-04-27	TW
<u>ZL201180012498.8</u>	201180012498.8	Mutual Capacitance Measurement in a Multi-Touch Input Device	2012-09-05	CN
	10-2012-7022585	Mutual Capacitance Measurement in a Multi-Touch Input Device	2011-04-28	KR
<u>102008031774</u>	102008031774	Protection system for detecting presence of e.g. infant, inside holding area of e.g. washing machine, has evaluation circuit for detecting dynamics of electric field interactions with one of two electrode devices	2008-07-04	DE
<u>2689313</u>	102011006079	Measuring device and method for detecting	2011-03-24	DE
<u>102011006079</u>	102011006079.0	Measuring Device and Method for Proximity Detection	2011-03-24	DE
<u>2689313</u>	12714254.5	MEASURING DEVICE AND METHOD FOR THE DETECTION OF AN APPROACH	2012-03-22	FR
<u>I570610</u>	101110017	Measuring Device and Method for the Detection of an Approach	2012-03-23	TW
<u>ZL201280014714.7</u>	201280014714.7	Measuring Device and Method for the Detection of an Approach to a Hand-Held Device	2013-09-23	CN
<u>2689313</u>	12714254.5	MEASURING DEVICE AND METHOD FOR THE DETECTION OF AN APPROACH	2012-03-22	NL
<u>2689313</u>	12714254.5	MEASURING DEVICE AND METHOD FOR THE DETECTION OF AN APPROACH	2012-03-22	GB
<u>6121397</u>	2014-500391	Measurement device and manner for detecting the approach to portable device	2012-03-22	JP
<u>10-1868924</u>	10-2013-7025810	Measuring Device and Method for the Detection of an Approach to a Hand-Held Device	2012-03-22	KR

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<u>102011006743</u>	102011006743	Detection method for sensing gripping of hand-held device involves operating sensor device in first and second operating modes to detect gripping of hand-held device once amount of electrical signal satisfies predetermined conditions	2011-04-04	DE
<u>I571056</u>	101111783	Sensor Device and Method for the Detection of a Gripping of a Hand-Held Device	2012-04-03	TW
<u>102011075276</u>	102011075276	Capacitive sensor device and method for operating an input device	2011-05-04	DE
<u>10-1867502</u>	10-2013-7031856	A Capacitive Sensor Device as Well as a Method for Operating an Input Device	2012-05-02	KR
<u>I586104</u>	101116072	A Capacitive Sensor Device as Well as a Method for Operating an Input Device	2012-05-04	TW
<u>103608752</u>	201280030197.2	Capacitive sensor device and method for operating input device method for	2012-05-02	CN
	12721446.8	A Capacitive Sensor Device as Well as a Method for Operating an Input Device	2012-05-02	EP
<u>6081996</u>	2014-516332	The printed circuit baseplate which has the electrode constitution of the capacitive sensor	2012-06-20	JP
<u>2724464</u>	12730884.9	Printed circuit board with electrode configuration of a capacitive sensor	2012-06-20	DE
<u>2724464</u>	12730884.9	PRINTED CIRCUIT BOARD COMPRISING AN ELECTRODE CONFIGURATION OF AN CAPACITIVE SENSOR	2012-06-20	FR
<u>ZL201280039513.2</u>	201280039513.2	Printed circuit board comprising an electrode configuration of an capacitive sensor	2012-06-20	CN
<u>I556693</u>	101122553	Printed Circuit Board Comprising an Electrode Configuration of a Capacitive Sensor	2012-06-22	TW
<u>2724464</u>	12730884.9	PRINTED CIRCUIT BOARD COMPRISING AN ELECTRODE CONFIGURATION OF AN CAPACITIVE SENSOR	2012-06-20	GB
<u>2724464</u>	12730884.9	PRINTED CIRCUIT BOARD COMPRISING AN ELECTRODE CONFIGURATION OF AN CAPACITIVE SENSOR	2012-06-20	NL
	10-2014-7001022	Printed Circuit Board Comprising an Electrode Configuration of a Capacitive Sensor	2012-06-20	KR
	16707268.5	Contactless Gesture Based Access Control	2016-01-28	EP
	105104174	Gesture Based Access Control Method and System	2016-02-05	TW
	201680005535.5	Contactless Gesture Based Access Control	2016-01-28	CN
	2017-533463	Contactless Gesture Based Access Control	2016-01-28	JP
	10-2017-7014258	Contactless Gesture Based Access Control	2016-01-28	KR

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<u>ZL201080039036.0</u>	201080039036.0	Capacitive Key Touch Sensing Using Analog Inputs and Digital Outputs	2012-03-02	CN
<u>10-1749540</u>	10-2012-7002766	Processor Capacitive Key Touch Sensing Using Analog Inputs and Digital Outputs	2012-01-31	KR
<u>2484013</u>	10744792.2	Capacitive Key Touch Sensing Using Analog Inputs and Digital Outputs	2012-03-29	DE
<u>2484013</u>	10744792.2	Capacitive Key Touch Sensing Using Analog Inputs and Digital Outputs	2012-03-29	FR
<u>I528251</u>	099126980	Capacitive Key Touch Sensing Using Analog Inputs and Digital Outputs	2010-08-12	TW
<u>2484013</u>	10744792.2	Capacitive Key Touch Sensing Using Analog Inputs and Digital Outputs	2012-03-29	NL
<u>102009032357</u>	102009032357	Electrode arrangement system for electrical handheld device has transmission electrode and compensation electrode, which generate current in reception electrode representing approach of hand to handheld device	2009-07-08	DE
<u>102009061064</u>	102009061064	Detection device for an electrical hand-held device, as well as hand-held tool having a detection device	2009-07-08	DE
<u>102217195</u>	200980138720.1	Is used for generating an indication of four limbs of the position or position change of the signal sensor device	2009-08-07	CN
<u>5684125</u>	2011-521488	The sensor device in order to form the signal which becomes index of change of position or position of the hand and foot	2011-02-07	JP
<u>2364526</u>	09804526	Sensor device for generating signals that are indicative of the position or change of position of limbs	2009-08-07	IT
<u>2364526</u>	09804526.3	Sensor device for generating signals that are indicative of the position or change of position of limbs	2009-08-07	ES
<u>2364526</u>	09804526.3	Sensor device for generating signals that are indicative of the position or change of position of limbs	2011-03-05	FR
<u>2364526</u>	102008036720	Sensor device for the generation of with respect to the position or position signals indicative of limbs	2008-08-07	DE
<u>10-1391171</u>	10-2011-7005167	Sensor device for generating signals that are indicative of the position or change of position of limbs	2009-08-07	KR
<u>2364526</u>	09804526	Sensor device for generating signals that are indicative of the position or change of position of limbs	2009-08-07	NL

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<u>2364526</u>	09804526	Sensor device for generating signals that are indicative of the position or change of position of limbs	2009-08-07	GB
	102008036720	Sensor device for the generation of with respect to the position or position signals indicative of limbs	2008-08-07	DE
<u>102010012961</u>	102010012961.5	Sensor device and method for the approach - and tactile sensing	2010-03-25	DE
<u>10-1899899</u>	10-2012-7023020	Electrode Device, Circuit Arrangement and Method for the Approach and Touch Detection	2011-03-24	KR
<u>102906678</u>	201180012560.3	For near and touch detection electrode device circuit arrangement and method for	2011-03-24	CN
	11712508	Electrode Device, Circuit Arrangement and Method for the Approach and Touch Detection	2011-03-24	EP
<u>102010044778</u>	102010044778	Electrode device, circuit arrangement as well as a process for the approach - and tactile sensing	2010-09-08	DE
	10-2016-7024023	Determining Touch Locations and Forces Thereto on a Touch and Force Sensing Surface	2016-08-31	KR
	2016-550560	Determining Touch Locations and Forces Thereto on a Touch and Force Sensing Surface	2016-08-05	JP
	201580009205.9	Determining Touch Locations and Forces Thereto on a Touch and Force Sensing Surface	2016-08-17	CN
	15719103.2	Determining Touch Locations and Forces Thereto on a Touch and Force Sensing Surface	2016-11-11	EP
	104112257	Determining Touch Locations and Forces Thereto on a Touch and Force Sensing Surface	2015-04-16	TW
<u>2332255</u>	09793171.1	Integrated Circuit Device to Support Inductive Sensing	2009-09-30	DE
<u>2332255</u>	09793171.1	Integrated Circuit Device to Support Inductive Sensing	2009-09-30	FR
<u>2332255</u>	09793171.1	Integrated Circuit Device to Support Inductive Sensing	2009-09-30	NL
<u>I526911</u>	098133999	Integrated Circuit Device to Support Inductive Sensing	2009-10-07	TW
<u>10-1385650</u>	10-2010-7028978	Integrated Circuit Device to Support Inductive Sensing	2009-09-30	KR
<u>ZL200980129346.9</u>	200980129346.9	Integrated Circuit Device to Support Inductive Sensing	2009-09-30	CN
<u>5462861</u>	2011-505467	The hand-held device which possesses the electrode system and the electrode system which detect approach	2009-04-16	JP

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<u>2281343</u>	09734949	Electrode System for Proximity Detection and Hand-Held Device with Electrode System	2009-04-16	DE
<u>2281343</u>	09734949	Electrode System for Proximity Detection and Hand-Held Device with Electrode System	2009-04-16	FR
<u>2281343</u>	09734949	Electrode System for Proximity Detection and Hand-Held Device with Electrode System	2009-04-16	NL
<u>1518554</u>	098138548	Electrode System for Proximity Detection and Hand-Held Device with Electrode System	2009-11-13	TW
<u>101849217</u>	200980000516	Is adjacent to the detection electrode of the system and has an electrode system of hand-held device	2009-04-16	CN
<u>10-1370987</u>	20097008088	Electrode System for Proximity Detection and Hand-Held Device with Electrode System	2009-04-16	KR
	102008020819	Wireless computer mouse for use in e.g. computing applications, has tapping circuit generating electrode signals, where electrode signals are supplied to signal control unit designed as microcontroller unit	2008-04-25	DE
<u>2324275</u>	09772562	Contact and proximity detection using capacitive sensors	2009-07-03	IT
<u>2324275</u>	09772562	Contact and proximity detection using capacitive sensors	2009-07-03	ES
<u>2324275</u>	09772562	Contact and proximity detection using capacitive sensors	2009-07-03	NL
<u>2324275</u>	102008031743	Contact surfaces - and approximately recognition with capacitive sensors	2008-07-04	DE
<u>2324275</u>	09772562	Contact and proximity detection using capacitive sensors	2009-07-03	FR
<u>2324275</u>	09772562	Contact and proximity detection using capacitive sensors	2009-07-03	GB
<u>102008031743</u>	102008031743	Contact surfaces - and approximately recognition with capacitive sensors	2008-07-04	DE
<u>102009016355</u>	102009016355	Measuring electrode for improved proximity detection	2009-04-07	DE
<u>102009060995</u>	102009060995	Measuring electrode for improved proximity detection	2009-04-07	DE
<u>5840139</u>	2012-542579	The device and method in order to detect the holding of the portable device by the hand	2010-12-13	JP
<u>6109885</u>	2015-143647	Device and Method for Detecting a Hand-Held Device Being Clapsed by a Hand	2015-07-21	JP
<u>102009057935</u>	102009057935.4	Einrichtung und Verfahren zur Detektion eines Umgreifens eines Handgeräts durch eine Hand	2009-12-11	DE

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<u>10-1795530</u>	10-2012-7017337	Device and method for detecting a hand-held device being clasped by a hand	2010-12-13	KR
	10800715	Device and method for detecting a hand-held device being clasped by a hand	2010-12-13	EP
<u>2294695</u>	10713444	Sensor Device and Method for Grip and Proximity Detection	2010-04-07	ES
<u>10-1742982</u>	10-2011-7026479	Sensor Device and Method for Grip and Proximity Detection	2010-04-07	KR
<u>102498669</u>	201080024912.2	Sensor Device and Method for Grip and Proximity Detection	2010-04-07	CN
<u>5882194</u>	2012-504012	And methods sensor device for proximity detection and gripping	2010-04-07	JP
<u>2294695</u>	10713444	Sensor Device and Method for Grip and Proximity Detection	2010-04-07	DE
<u>102009057931</u>	102009057931.1	Circuit arrangement for a capacitive sensor element	2009-12-11	DE
<u>2294695</u>	10713444	Sensor Device and Method for Grip and Proximity Detection	2010-04-07	GB
<u>2294695</u>	10713444	Sensor Device and Method for Grip and Proximity Detection	2010-04-07	FR
<u>2294695</u>	10713444	Sensor Device and Method for Grip and Proximity Detection	2010-04-07	NL
<u>2294695</u>	10713444.7	Sensor Device and Method for Grip and Proximity Detection	2010-12-21	IE
<u>2294695</u>	10713444	Sensor Device and Method for Grip and Proximity Detection	2010-04-07	IT
<u>103339860</u>	201280007526.1	Capacitive proximity sensor and capacitive proximity detection method of	2012-01-03	CN
<u>102011002447</u>	102011002447	Capacitive proximity sensor, as well as a process for the capacitive detecting	2011-01-04	DE
<u>10-1830796</u>	10-2013-7020554	Capacitive Proximity Sensor as well as Method for Capacitive Proximity Detection	2012-01-03	KR
	12700034.7	CAPACITIVE PROXIMITY SENSOR AS WELL AS METHOD FOR CAPACITIVE APPROXIMATION DETECTION	2012-01-03	EP
<u>2727243</u>	12740512.4	Capacitive Sensor Device and Method for Calibrating a Capacitive Sensor Device	2012-06-28	FR
<u>2727243</u>	12740512.4	Capacitive Sensor Device and Method for Calibrating a Capacitive Sensor Device	2012-06-28	IT

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<u>102011078369</u>	102011078369	Capacitive sensor device and method for calibrating a capacitive sensor device	2011-06-29	DE
<u>6014131</u>	2014-517723	Method of calibrating a capacitive sensor device and the capacitive sensor device	2012-06-28	JP
<u>103748789</u>	201280039515.1	Capacitive Sensor Device and Method for Calibrating a Capacitive Sensor Device	2012-06-28	CN
<u>I573393</u>	101123657	Capacitive Sensor Device and Method for Calibrating a Capacitive Sensor Device	2012-06-29	TW
	10-2014-7001769	Capacitive Sensor Device and Method for Calibrating a Capacitive Sensor Device	2012-06-28	KR
	10-2016-7000559	Capacitive Proximity Detection Using Delta-Sigma Conversion	2016-01-08	KR
	2016-519635	Capacitive Proximity Detection Using Delta-Sigma Conversion	2015-12-10	JP
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	102013222146.0	Charge Measurement	2013-10-31	DE
	102013227191.3	Touch Sensor Scanning for Display-Embedded Touch Sensors	2013-12-30	DE
	102014212207.4	Fast Scanning for Mutual Capacitance Screens	2014-06-25	DE
	102014211244.3	Method for Changing the Detection Range of a Touch Sensor	2014-06-12	DE
<u>I619049</u>	103113574	Touch Sensor with High-Density Macro-Feature Design	2014-04-14	TW
<u>ZL201410150982.2</u>	201410150982.2	Touch Sensor with High-Density Macro-Feature Design	2014-04-15	CN
	10 2014 207 005.8	Touch Sensor with High-Density Macro-Feature Design	2014-04-11	DE
	107127307	Oncell Single-Layer Touch Sensor	2014-07-24	TW
	103125394	Oncell Single-Layer Touch Sensor	2014-07-24	TW
	201410332340.4	Oncell Single-Layer Touch Sensor	2014-07-11	CN
	102014214466.3	Oncell Single-Layer Touch Sensor	2014-07-24	DE
	106112139	Touch Sensor Mesh Designs	2017-04-12	TW
	1020170049159	Touch Sensor Mesh Designs	2017-04-17	KR
	102017206699.7	Touch Sensor Mesh Designs	2017-04-20	DE
	201410227910.3	Edgeless Single-Layer Touch Sensor	2014-05-27	CN

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	102014210210.3	Edgeless Single-Layer Touch Sensor	2014-05-28	DE
	106119191	Force Sensor Pattern	2017-06-09	TW
	102017209760.4	Force Sensor Pattern	2017-06-09	DE
	2017113958	Force Sensor Pattern	2017-06-09	JP
	201710438167.X	Force sensor array	2017-06-09	CN
	103142916	Hybrid Capacitive Touch System Design	2014-12-09	TW
	201410748910.8	Hybrid Capacitive Touch System Design	2014-12-09	CN
	102014225254.7	Hybrid capacitive contact system	2014-12-09	DE
	102013213689.7	Touch-Sensor-Controller Sensor Hub	2013-07-12	DE
	10 2014 214 937.1	Position Detection of an Object Within Proximity of a Touch Sensor	2014-07-30	DE
	103135758	Touch Sensor with Plastic Lens Cover	2014-10-15	TW
	201410575026.9	Touch Sensor with Plastic Lens Cover	2014-10-15	CN
	102014224060.3	Touch Sensor with Plastic Lens Cover	2014-11-17	DE
	10 2013 219 944.9	System and Method for Reducing Borders of a Touch Sensor	2013-10-01	DE
	10 2013 221 719.6	Charge Compensation for Capacitive Touch Sensor Nodes	2013-10-25	DE
	102013227225.1	Current-Based Charge Compensation in a Touch Sensor	2013-12-30	DE
	102014201 852.8	Touch Sensor with Capacitive Voltage Driver	2014-02-03	DE
	201510341731.7	Single layer capacitive position sensor	2015-06-18	CN
	104119872	Single layer capacitive position sensor	2015-06-18	TW
	102015211352.3	Single layer capacitive position sensor	2015-06-19	DE
<u>I518576</u>	99129310	Capacitive Control Panel	2010-08-31	TW
<u>ZL201010275716.4</u>	201010275716.4	Capacitive Control Panel	2010-09-03	CN
	102010040164.1	Capacitive Control Panel	2010-09-02	DE
	1020100303747	Apparatus Using A Differential Analog-to-Digital Converter	2010-06-23	DE
	102010038771.1	Force Sensor with Compressible Electrode	2010-08-02	DE
	102010030935.4	Touch Shape Based Automatic Gain Control	2010-07-05	DE
	102010042767.5	Sense Electrode Spine Interpolation	2010-10-21	DE
	102010038717.7	Electrode Layout for Touch Screens	2010-07-30	DE
	102011085007.4	Proximity Detection	2011-10-21	DE
	10 2011 087 565.4	Position-Sensing and Force Detection Panel	2011-12-01	DE
<u>I522932</u>	100138521	Capacitive Sensor, Device and Method	2011-10-24	TW
<u>ZL</u> <u>201110346025.3</u>	201110346025.3	Capacitive Touch Sensor for Identifying a Fingerprint	2011-11-02	CN
	10 2011 085 578.5	Capacitive Touch Sensor for Identifying a Fingerprint	2011-11-02	DE
<u>20 2011 052 530.9</u>	20 2011 052 530.9	Panel	2011-12-29	DE
	10 2007 024 455.1	Touch Sensitive User Interface	2007-05-25	DE
	102014217282.9	Chained Differential Sensing for Touch Sensors	2014-08-29	DE

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	10 2011 075 852.6	Panel for Position Sensors	2011-05-16	DE
<u>202012102989.8</u>	202012103231.7	Touch Sensor with Reduced Anti-Touch Effects	2012-08-27	DE
<u>ZL201210557374.4</u>	201210557374.4	Touch Sensor with Reduced Anti-Touch Effects	2012-12-20	CN
<u>I569190</u>	101148511	Touch Sensor with Reduced Anti-Touch Effects	2012-12-19	TW
	102012223363.6	Touch Sensor with Reduced Anti-Touch Effects	2012-12-17	DE
<u>202012102388.1</u>	202012102388.1	Integrated Touch Screen	2012-06-28	DE
	102012221359.7	Integrated Touch Screen	2012-11-22	DE
<u>202012103361.5</u>	202012103361.5	Flexible Touch Sensor Input Device	2012-09-04	DE
<u>I545896</u>	101128820	Capacitive Touch Sensor Control Unit With Sampling Capacitors For Differential Integration	2012-08-09	TW
<u>20 2011 052 513.9</u>	20 2011 052 513.9	Capacitive Touch Sensor Control Unit with Sampling Capacitors for Differential Integration	2011-12-28	DE
	102012214228.2	Capacitive Touch Sensor Control Unit With Sampling Capacitors For Differential Integration	2012-08-10	DE
<u>20 2011 052 520.1</u>	20 2011 052 520.1	Analog to Digital Converter with Adjustable Conversion Window	2011-12-29	DE
	102012213823.4	Analog to Digital Converter with Adjustable Conversion Window	2012-08-03	DE
<u>202012101703.2</u>	202012101703.2	Substantially Edgeless Touch Sensor	2012-05-09	DE
<u>20 2012 101 479.3</u>	20 2012 101 479.3	Single-Layer Touch Sensor	2012-04-20	DE
<u>202012101733.4</u>	202012101733.4	Touch Sensor with Inductive Charging	2012-05-11	DE
<u>202012102385.7</u>	202012102385.7	Touch Screen with Electrodes Positioned Between Pixels	2012-06-28	DE
	102013216486.6	Interpolated Single-Layer Touch Sensor	2013-08-20	DE
	11 2007 001 643.4	Priority Suppression Technique (PST) and Combination	2007-05-23	DE
	102007049559.7	Capacitive Position Sensor	2007-10-16	DE
	102009017418.4	Capacitive Touch Screen with Noise Suppression	2009-04-14	DE
	10 2009 019 910.1	Gesture Recognition	2009-05-04	DE
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	11 2009 002 578.1	Multi-Touch Tracking	2009-10-21	DE
	11 2009 002 587.0	Noise Handling in Capacitive Touch Sensors	2009-10-21	DE
	11 2009 002 394.0	Capacitive Matrix Touch Sensor	2009-10-02	DE
<u>I516992</u>	099136189	Interdigitated Touchscreen Electrodes	2010-10-22	TW
<u>ZL201010519970.4</u>	201010519970.4	Interdigitated Touchscreen Electrodes	2010-10-22	CN
	102010042884.1	Interdigitated Touchscreen Electrodes	2010-10-25	DE
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<u>20 2012 101 378.9</u>	20 2012 101 378.9	Single-Layer Touch Sensor	2012-04-16	DE
	101137128	Single-Layer Touch Sensor	2012-10-08	TW
	102012217341.2	Single-Layer Touch Sensor	2012-09-26	DE
<u>20 2011 052 512.0</u>	20 2011 052 512.0	Substantially Edgeless Touch Sensor	2011-12-28	DE
<u>20 2011 052 508.2</u>	20 2011 052 508.2	Touch Sensor for Flexible or Curved Surfaces	2011-12-28	DE

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<u>I567618</u>	101137833	Flexible Touch Sensor	2012-10-12	TW
<u>ZL201210394366.2</u>	201210394366.2	Flexible Touch Sensor	2012-10-17	CN
<u>20 2012 101 382.7</u>	20 2012 101 382.7	Flexible Touch Sensor	2012-04-16	DE
	102012218783.9	Flexible Touch Sensor	2012-10-16	DE
<u>I560585</u>	101132193	Improving Signal-to-Noise Ratio in Touch Sensors	2012-09-04	TW
<u>20 2011 052 491.4</u>	20 2011 052 491.4	Improving Signal-to-Noise Ratio in Touch Sensors	2011-12-27	DE
	201210328416.7	Improving Signal-to-Noise Ratio in Touch Sensors	2012-09-06	CN
	102012215894.4	Improving Signal-to-Noise Ratio in Touch Sensors	2012-09-07	DE
	10 2011 081 319.5	Electronic Ink Touch Sensitive Display	2011-08-22	DE
<u>202012103357.7</u>	202012103357.7	Buffer-Reference Self-Capacitance Measurement	2012-09-04	DE
	10 2010 027732.0	Two-Dimensional Position Sensor	2010-04-14	DE
<u>1131641</u>	699 20 034.2	Charge Transfer Capacitance Measurement Circuit	1999-11-18	DE
<u>60 301 831.9</u>	03254396.9	Capacitive Keyboard with Reduced Keying Ambiguity	2003-07-11	DE
<u>1656608</u>	04768019	Anisotropic Touch Screen Element	2004-08-09	DE
<u>102006043665.2</u>	10 2006 043 665.2	Touch Sensitive Screen	2006-09-18	DE
<u>I417775</u>	95124551	Two-Dimensional Position Sensor	2006-07-05	TW
<u>ZL200610143149.0</u>	200610143149.0	Two-Dimensional Position Sensor	2006-07-07	CN
	102006031376.3	Single-Layer Indium Tin Oxide Touch Screen	2006-07-06	DE
<u>I415389</u>	95123644	Keyboard with Reduced Keying Ambiguity	2006-06-29	TW
<u>ZL200680052852.9</u>	200680052852.9	Capacitive Keyboard with Non-Locking Reduced Keying Ambiguity	2006-06-20	CN
<u>1964265</u>	60 2006 013 189.5-08	Capacitive Keyboard with Non-Locking Reduced Keying Ambiguity	2006-06-20	DE
<u>I424337</u>	096118385	Two-Dimensional Position Screen	2007-05-23	TW
<u>ZL200710108809.6</u>	200710108809.6	Two-Dimensional Position Screen	2007-05-31	CN
<u>101325875</u>	10-2007-0053232	Two-Dimensional Capacitive Position Sensor Operated by a Finger or a Stylus Pen in a Touch Screen, a Touch Pad, and a Pen Input Tablet	2007-05-31	KR
<u>102007023853</u>	10 2007 023 853.5	Two-Dimensional Position Screen	2007-05-23	DE
	10 2013 227 090.9	Method to account for changes in measurement signal due to deformation of the touch panel.	2013-12-23	DE
	102013227227.8	Detecting Presence of an Object in the Vicinity of a Touch Interface of a Device	2013-12-30	DE
	102013218051.9	Capacitive Position Encoder	2013-09-10	DE
<u>20 2012 101 505.6</u>	20 2012 101 505.6	Touch Sensor with Spacers Supporting a Cover Panel	2012-04-23	DE
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	102013213250.6	Drive Signals for a Touch Sensor	2013-07-05	DE

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<u>202012102751.8</u>	202012102751.8	Touch Sensor with Conductive Lines Having Different Widths	2012-07-23	DE
<u>202012102387.3</u>	202012102387.3	Single-Layer Touch Sensor with Crossovers	2012-06-28	DE
<u>I627578</u>	103121440	Method of Compensating for Retransmission Effects in a Touch Sensor	2014-06-20	TW
	201410257760.0	Method of Compensating for Retransmission Effects in a Touch Sensor	2014-06-11	CN
	102014211118.8	Method of Compensating for Retransmission Effects in a Touch Sensor	2014-06-11	DE
<u>I613573</u>	103116424	Method for Restructuring Distorted Capacitive Touch Data	2014-05-08	TW
	201410193443.7	Method for Restructuring Distorted Capacitive Touch Data	2014-05-08	CN
	102017207016.1	Touch Sensor Mesh Designs	2017-04-26	DE
	106112122	Touch Sensor Mesh Designs	2017-04-12	TW
	1020170053006	Touch Sensor Mesh Designs	2017-04-25	KR
	201410640098.7	Capacitive measurement circuit for a touch sensor device	2014-11-13	CN
	103141833	Capacitive measurement circuit for a touch sensor device	2014-12-02	TW
	102014222478.0	Capacitive measuring circuit for a contact sensor device	2014-11-04	DE
	102014212250.3	Shieldless Touch Sensor Noise Cancellation	2014-06-26	DE
	102014222287.7	Dynamic Configuration of Touch Sensor Electrode Clusters	2014-10-31	DE
	102014215067.1	Dynamic Clustering of Touch Sensor Electrodes	2014-07-31	DE
	102014212094.2	Pseudo Driven Shield	2014-06-24	DE
	102014212355.0	Common Mode Noise Suppression During Hovering and Proximity Detection	2014-06-26	DE