

PATENT PORTFOLIO OFFERING

Magink Display Technologies

Bid Deadline: July 31, 2012

OVERVIEW:

Magink Display Technologies, Ltd. (“*Magink*”) has engaged Marqera, LLC in the commercialization of a portfolio of patent assets disclosing unique technical methods for full-color, commercially viable digital ink display systems. This proprietary technology provides high resolution, high contrast, full-color, low energy consumption and cost effective digital display applications to a broad array of global industries.

Reflective Images

The eye has evolved to look at objects that reflect light, rather than to look directly at light sources. Thus, an audience has a more “natural” viewing experience when looking at a reflective image. During the day, the image is not washed out, and at night the image forms a focal point without becoming intrusive.



PORTFOLIO DESCRIPTION:

The patent portfolio on offer consists of six granted patents, five of which are granted in the U.S., and one in the UK. In addition, there are nine pending applications in jurisdictions including Hong Kong (2), Taiwan (2), Japan (2), the U.S. (2) and China (1). A complete asset list is provided in the attached **Appendix B**.

The two lead patents of the portfolio are: **US7,719,501**, entitled **Distinct color LCD apparatus**, having twenty-one claims of which claims 1 and 21 are independent; and **US8,013,819**, entitled **Drive scheme for a cholesteric liquid crystal display device**, having forty-four claims, of which claims 1 and 23 are independent. Among the independent claims are disclosed innovative methods and systems for better, cleaner and greener digital displaying on outdoor screens.

About Cholesteric Liquid Crystals

Cholesteric liquid crystals were first identified in 1888. They were initially used in displays in the 1970s (a simple light scattering to clear display mode), but became more popular in the 1990s when, with the improvement in materials, colored images could be made. In the late 1990s, Magink advanced this technology and developed a patent portfolio detailing methods for the creation of full color displays in large outdoor areas.

Several reflective digital display modes are known. Magink chooses to use a cholesteric liquid crystal-based display because it is inherently stable to visible light; the display’s reflected image is generated purely by the reflection of light, with no absorption of visible light in the active components. This enhances the inherent color stability and thus provides a long-lasting product in outdoor environments.

REPRESENTATIVE CLAIMS:

US7,719,501 Independent Claim 1:

A distinct color LCD apparatus including: at least one layer of encapsulated cholesteric liquid crystal material; electrically conductive means for addressing a plurality of parallel addresses across the encapsulated cholesteric liquid crystal material in the at least one layer; and an electrical pulse driving means connected to said electrically conductive means and arranged to supply drive signals to the plurality of parallel addresses to drive the cholesteric liquid crystal material selectively into a

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homeotropic state or a planar state, the electrical pulse driving means being arranged to supply drive signals which provide a predetermined grey level by driving the cholesteric liquid crystal material, within successive frames each having a predetermined time period which is sufficiently short that an average reflectance of the color LCD apparatus over the predetermined time period is perceived without the appearance of visual flicker,

into homeotropic state in a fraction of said predetermined time period and into the planar state in the remainder of said predetermined time period, said fraction being selected in accordance with the grey level.

US8,013,819 Independent Claim 1:

A method of driving a cholesteric liquid crystal display device which comprises at least one cell comprising a layer of cholesteric liquid crystal material and an electrode arrangement capable of providing driving of a plurality of pixels across the layer of cholesteric liquid crystal material by respective drive signals, the method comprising applying respective drive signals to each pixel to drive the pixels into states which are varied to provide a reflectance varying within a predetermined range of reflectances, the drive signals comprising: (a) when providing a reflectance in a first portion of the predetermined range of reflectances, a first waveform shaped to drive the pixel into a stable state, the waveform having a shape which is variable to provide a stable state having a varying reflectance; and (b) when providing a reflectance in a second portion of the predetermined range of reflectances which is lower than the first portion, a second waveform shaped to drive the pixel into the homeotropic state and the planar state alternately, the periods of time during which the pixel is driven into the homeotropic and planar states being variable to provide a varying average reflectance as perceived by a viewer.

Further explanation of low-power, large-area cholesteric displays is provided in the following: http://www.magink.com/piks/news_94.pdf

RELEVANT MARKET SEGMENTS:

Media companies are always looking for new ways to grow their businesses, generate additional revenues from their prime advertising locations – including outdoor, and minimize the objections raised by environmentalists and other regulatory bodies.

Provided in the attached **Appendix A** is market data identifying the market leaders and potential.



BIDDING PROCEDURES:

Marqera professionals will be soliciting indications of interest and/or offers to purchase from prospective purchasers and providing additional information as requested throughout the sale process. Final proposals must be submitted by July 31, 2012. Proposals should include a discussion of any factors believed to be relevant to the acquisition, including:

- **Valuation:** Indicate a value to be paid for the portfolio;
- **Conditions to Closing:** Describe any material conditions required to conclude the transaction, including any additional due diligence requirements; and
- **Timing:** Indicate a preliminary timetable based on your acquisition team’s availability and internal process for closing a transaction.

The proposal submission process is intended to be a one-round, highest bidder wins process. Should there be multiple high bids that are substantially similar in their specified value and other conditions, Marqera will invite those high bidders to submit their best and final offers for the assets.

For additional information, please contact:



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APPENDIX A: MARKET SEGMENT DATA

MARKET POTENTIAL



BILLBOARDS IN TIMES SQUARE, NEW YORK.

The market segment for outdoor advertising is significant and getting bigger continuously.

In October 2011, Global Industry Analysts, Inc. (“GIA”) released its global report on the Outdoor Advertising market segment, which forecasted the market to reach \$43.8 billion by 2017.¹ According to GIA’s report, the market segment is exhibiting optimistic signs of recovery since the economic downturn, due at least in part to companies’ efforts to maximize return on advertising expenditures, where brandscape and outdoor advertising provide substantial opportunity as compared to traditional print and broadcast media channels.²

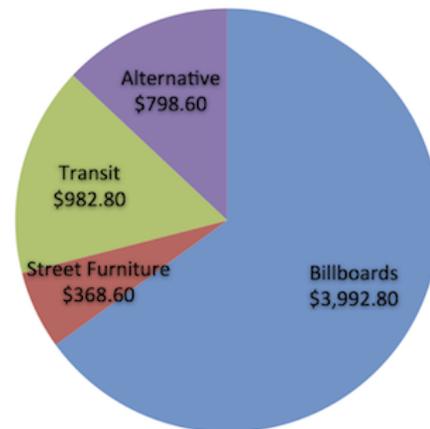
Along with this anticipated growth in outdoor advertising spends, innovation in the segment – such as developments in billboards including large-format vertical signs, uniquely redesigned signs, digital signage, and other architecturally diverse forms of advertising which may dynamically adapt and change according to public sentiment and mood – will necessarily drive investment in this platform.³

Within the global outdoor advertising market segment, Europe and the United States account for the majority of market share, with billboard advertising representing the largest contributor in terms of market segment revenue.⁴

According to the OAAA, out-of-home (OOH) firms in the United States alone earned over \$6 billion in 2010; of that \$6 billion, 65% – or approximately \$3.992 billion – is attributed to billboards; the following chart, published by

Kantar Media, provides an overview of the distribution of revenue for the out-of-home advertising market segment among billboards, alternative, transit and street furniture platforms:⁵

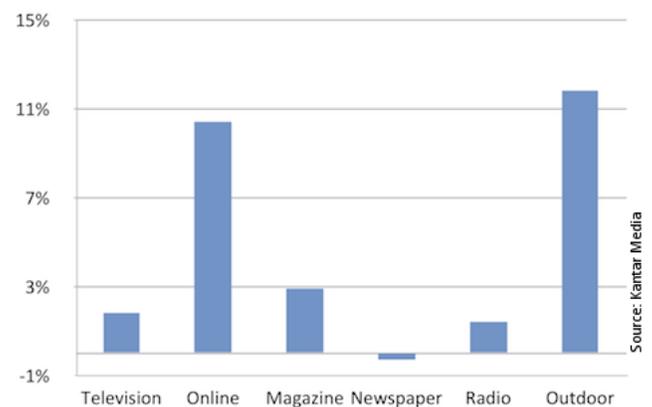
2010 OOH Revenue: \$6.14 Billion



Notes: Figures in millions. Source: OAAA

The following graph, also published by Kantar Media, illustrates continued growth in OOH advertising, with outdoor advertising documenting 11.8% growth in the first half of 2011 from 2010; comparably, other advertising platforms, while still witnessing growth, posted less significant numbers – the nearest being online advertising; television (1.8% growth); magazines (2.9%); newspapers (-0.3%); and online (10.4%).⁶

Segment Growth, 1H 2011 vs. 2010



Source: Kantar Media

Evaluating this growth in the OOH advertising market segment, continual increase in revenue may be attributed to its use and effectiveness for both top 100 advertisers – such as telecommunications, financial, insurance, and entertainment companies – as well as for local business advertisers; while the top 100 advertisers utilize OOH significantly, they account

¹ <http://news.yahoo.com/global-outdoor-advertising-market-reach-us-43-8-150034684.html>, October 5, 2011

² *Id.*

³ *Id.*

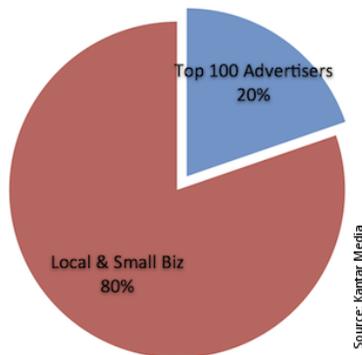
⁴ *Id.*

⁵ “Outdoor Advertising Market Analysis”, <http://news.adstruc.com/post/19963734715/outdoor-advertising-market-analysis>

⁶ *Id.*

for only 20% of the total ad spend in this segment, with local advertisers exploiting the platform for targeted messages to optimize media budgets.⁷

Source of OOH Revenue, Total: \$6.142B



In March 2011, PQ Media released a report on the global digital out-of-home (DOOH) advertising segment, which defined two major platforms – digital place-based networks (DPN) and digital billboards and signage (DBB) – as well as six venue and location categories including cinema, retail, office, entertainment, transit and roadside.⁸

In its report PQ Media cited DOOH advertising revenue at \$6.47 billion in 2010, marking a 16.3% increase over 2009's \$5.56 billion, and projected revenue to reach \$7.56 billion in 2011 (a 16.9% increase over 2010).⁹ In the U.S. alone, the largest DOOH market, revenue grew 15.1% from \$1.8 billion in 2009 to \$2.07 billion in 2010, and expectations were for revenue to further increase 16.7% to \$2.41 billion in 2011.¹⁰

Worldwide DBB revenue – including digital billboards and signage – grew 23.2% in 2010 to \$1.41 billion, and similar growth was anticipated to continue through 2011: a 23.1% increase to \$1.73 billion.¹¹ In the United States specifically revenue in the segment increased 15.4% to \$532 million in 2010, and is expected to continue growth at a rate of 18.8% to \$632 million in 2011¹². U.S. DOOH spending was predicted to reach \$3.08 billion – an 18% year-over-year increase – in 2010, followed by 15.5% increase to \$3.56 billion in 2011, 13.8% increase to \$4.05 billion in 2012, and approximately 12% increase to \$4.52 billion in 2013.¹³

⁷ *Id.*

⁸ “Global DOOH Revenue Expected to Rise 17%”, <http://www.marketingcharts.com/direct/global-doooh-revenue-expected-to-rise-17-16334/>, March 1, 2011

⁹ *Id.*

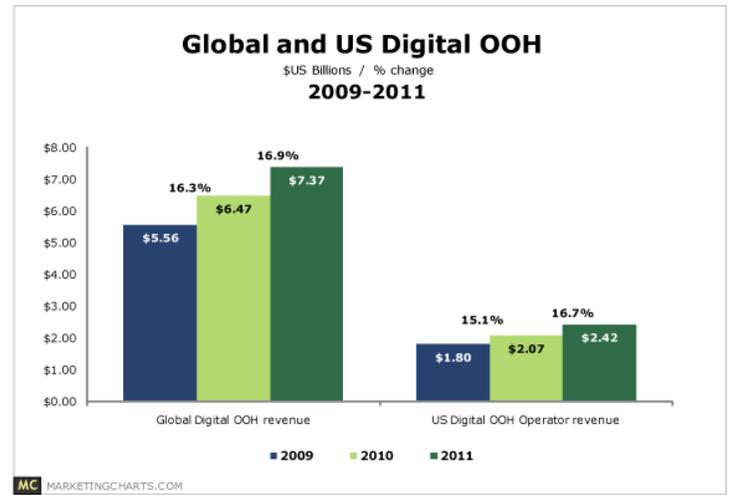
¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.*

¹³ *Id.*

The following graph, published by PQ Media in its media forecast for March 2011, illustrates the anticipated growth in the global digital OOH revenue and U.S. digital OOH operator revenue segments.¹⁴



Following the March 2011 report, PQ Media published an update on the market segment in April 2012 which cited DOOH revenues generated by digital place-based networks, billboards and signage operators as growing 15.3% to \$6.97 billion 2011, with expectations to increase 19.2% in 2012; DBB revenues increased 26% to \$1.88 billion in 2011.¹⁵

In the U.S. DOOH market segment generated \$2.05 billion in 2011, representing the largest overall DOOH market, followed by China (\$1.44 billion in revenue), and Japan (\$759 billion); significantly, DOOH operator revenue grew 11.2% in 2011, largely attributable to digital billboard operators.¹⁶ The UK represented the largest DOOH market in Europe, generating \$549 million due largely to new ad locations and digitization of existing ad locations in anticipation of the London Summer Olympics, while Brazil's DOOH market marked the fifth consecutive year of double-digit growth at 38% to \$155 million for the year.¹⁷

DOOH revenues are expected to increase 19.2% worldwide in 2012 to \$8.3 billion, with continued expansion into new venues and markets, the installation of DBBs in more locations, and the incorporation of enhanced and interactive

¹⁴ *Id.*

¹⁵ Press Release: “New PQ Media Forecast: Global Digital Out-of-Home Advertising Revenue Grew 15.3% to \$6.97 Billion in 2011 & On Pace to Accelerate 19.2% in 2012; Key Growth Drivers Include Economic Recovery, Record Political Ad Spend & Major Brands Seeking Alternative Video Investments”, April 23, 2012

¹⁶ *Id.*

¹⁷ *Id.*

features; U.S. DOOH revenues are expected to grow 12.5% to \$2.3 billion in 2012.¹⁸

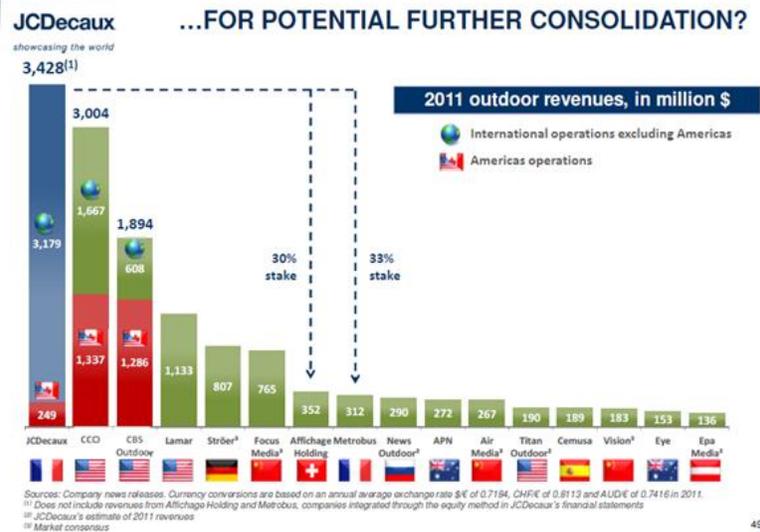
Looking specifically at the billboard advertising market segment, CapitalIQ identified the following market leaders:¹⁹

Company Name	Market Cap (mm USD) [Latest]*†	Revenue (mm USD)
Publicis Groupe SA	8,479.9	7,523.4
Dentsu Inc.	7,379.3	23,060.0
JCDecaux SA	5,602.1	3,186.1
Focus Media Holding Ltd.	3,008.6	792.6
Clear Channel Outdoor Holdings Inc.	2,509.2	3,004.9
Lamar Advertising Co.	2,456.1	1,144.5
Asatsu-DK Inc.	1,195.0	4,345.1
Ströer Out-of-Home Media AG	596.6	746.5
Guangdong Advertising Co., Ltd.	546.4	605.1
Affichage Holding SA	510.2	338.4
Clear Media Ltd.	306.6	191.4
AirMedia Group Inc.	163.4	270.6
OOHMedia Group Ltd.	161.5	120.0
Goldbach Group AG	145.6	480.3
China Outdoor Media Group Limited	138.2	1.9
Branding China Group Ltd	53.6	NA
Focus Media Network Limited	42.2	7.7
SearchMedia Holdings Ltd.	41.4	56.6
Master Ad Public Company Limited	29.9	20.4
Dahe Media Co. Ltd.	19.1	68.1
Network CN, Inc.	17.9	1.8
China Media Group Corp.	11.0	0.1
Indoor and Outdoor Communication Holding SA	11.0	NA
CAM Media S.A.	9.0	19.7
Assetus SA	4.8	0.1

¹⁸ *Id.*

¹⁹ Data retrieved from CapitalIQ, Billboard Advertising Industry Constituents, May 13, 2012

Published in March 2012, the following graph illustrates the leading operators worldwide in terms of 2011 outdoor revenues.²⁰



Among the leading outdoor advertising providers identified above are: **JCDecaux, S.A.**; **Clear Channel Outdoor, Inc. (CCO)**; **CBS Outdoor**; **Lamar Advertising Company**; **Ströer Out-of-Home-Media**; **Focus Media Holding Ltd.**; **Affichage Holding**; **Metrobus**; **News Outdoor**; **APN Outdoor**; **AirMedia Group Inc.**; **Titan Outdoor**; **Cemusa**; **Vision Outdoor Advertising**; **EYE**; and **EPAMEDIA**.²¹

JCDecaux, the largest outdoor advertising company worldwide in terms of outdoor revenues and the market leader in Europe and Asia Pacific²², posted consolidated revenues of €2,463.0 million, an increase of 4.8%, in 2011; net income rose 22.7% to €212.6 million.²³ Revenues generated from digital screens represented the largest contributors to growth, generating €120 million and posting a rise in inventory from 2,400 units to 9,800 worldwide; further plans for installation of an additional 2,500 units in 2012 are anticipate to increase total inventory to 12,300.²⁴

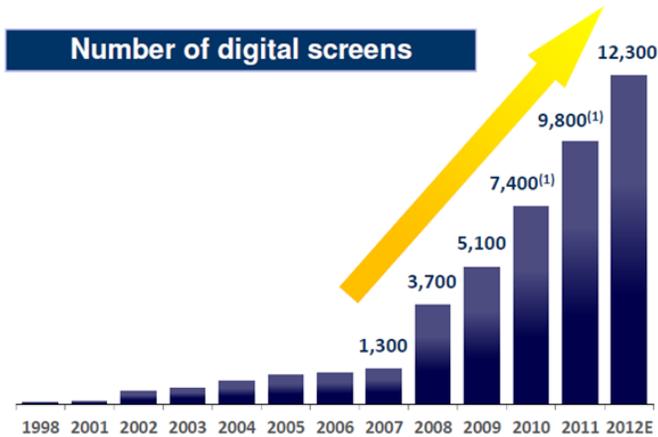
²⁰ “World: JCDecaux’s Digital Turnover Reached €120 Million in 2011”, <http://en.ooh-tv.com/2012/03/08/world-jcdecauxs-digital-turnover-reached-120-million-in-2011/>, March 8, 2012

²¹ *Id.*

²² <http://www.jcdecaux.com/en/The-JCDecaux-group/Group-profile>

²³ “World: JCDecaux’s Digital Turnover Reached €120 Million in 2011”, <http://en.ooh-tv.com/2012/03/08/world-jcdecauxs-digital-turnover-reached-120-million-in-2011/>, March 8, 2012

²⁴ *Id.*



In April 2012, The New York Times published an article entitled “MEDIA DECODER; When ‘Outdoor’ Ads are Indoors”, commenting on initiatives by advertising agencies and professionals to expand the platform beyond the traditionally thought of mediums.²⁵ More specifically, the industry segment is stressing the usage of “outdoor” advertising mediums – such as screens in elevators, shopping mall kiosks, locker rooms, and doctors’ offices, among others – to potential product purchasers.²⁶

Further underlining this article is the growth opportunity available for digital ‘outdoor’ advertising in airports: in a study commissioned by Clear Channel Airports and conducted by consumer market research firm Scarborough, it was discovered that Business Frequent Flyers are 83% more likely than all American adults to try or buy new products and services, and “approximately 3 in 4 Frequent Flyers and Business Frequent Flyers both notice airport advertising and take the time to actually read the message.”²⁷ In addition to offering a target audience receptive to advertising messages, airports further provide advertisers a diversity of unique, high-visibility touchpoints – including security lines, concourses, connection hubs, baggage claim areas, and ground transportation areas – allowing for the expansion of brand exhibits through digital displays and networks in highly trafficked areas.²⁸

The growth and dynamism of the digital outdoor advertising market segment is further supported by the M&A activity in the industry; published in February 2012, the following

²⁵ Elliott, Stuart, “MEDIA DECODER; When ‘Outdoor’ Ads are Indoors”, The New York Times, <http://query.nytimes.com/gst/fullpage.html?res=9404E4D81138F933A05757C0A9649D8B63&ref=outdooradvertising>, April 30, 2012

²⁶ *Id.*

²⁷ Press Release: “New Survey Reveals that Airports Deliver the Most Attractive Audience to Advertisers”, http://www.clearchanneloutdoor.com/corporate/press-releases/?section=show_release&id=11310, April 17, 2012

²⁸ *Id.*

provides a list of Mergers & Acquisitions in the digital signage and DOOH market segments:

- Amscreen acquires the entire Sales and Marketing operation of Digicom;
- Axoro acquires the Express Digital Signage product line from .advancedMethod, a division of Eiki Digital Systems;
- Brite Media Group acquires Targetcast Networks;
- Chilin Technology acquires Vertigo Digital Displays;
- ClearOne acquires MagicBox;
- Concentia Group acquires the entire issued and to be issued ordinary share capital of Imagesound;
- Delphi Display Systems acquires Fast Track;
- EnQii and Minicom merge;
- Haivision acquires CoolSign;
- iSIGN Media acquires Pinpoint Media;
- KIT Digital acquires Kewego;
- LiveIT & Learn acquires Can Media Group;
- MADIC Holdings acquires Mirane;
- Mermaid Acquires Headline.TV;
- Mood Media acquires Muzak;
- Mood Media acquires Pelika;
- MRI (Grant Sign Group) acquires Hamilton Digital Designs;
- Multiband acquires TechniqueUSA;
- NCR acquires Radiant Systems;
- Newad acquires assets of Media One;
- Outcast Media, PumpTop TV and Health Club Media Network merge;
- Qualcomm acquires gesture recognition assets from GestureTek;
- Radiant Systems acquires Texas Digital;
- Saddle Ranch Productions and Seatac Digital Resources merge;
- Scala acquires Digifour Technologies;
- Screenvision acquires Uniquescreen Media;
- SeeSaw Networks goes out of business;
- Stroer Digital acquires ECE Flatmedia;
- VeriFone acquires assets of Show Media;
- VeriFone acquires TaxiMedia;
- VITEC Multimedia acquires assets of OOH Video; and
- YCD acquires assets of C-Nario.²⁹

²⁹ Gerba, Bill, “2011 M&A List: Mergers & Acquisitions in Digital Signage and DOOH”, http://www.wirespring.com/dynamic_digital_signage_and_interactive_kiosks_journal/articles/2011_M_A_List_Mergers_Acquisitions_in_Digital_Signage_and_DOOH-818.html, February 9, 2012

APPENDIX B: PORTFOLIO INFORMATION
Patent Portfolio of Magink Display Technologies Ltd.

<u>Title</u>	<u>Country</u>	<u>Patent No. / Appl. No.</u>	<u>Patent No. or Publication No.</u>	<u>Filing Date</u>	<u>Status</u>
Modular Front-lit Display Panel	US	10/666,230	6963386	18/09/2003	granted
	UK	0607180.7	2422945	19/09/2004	granted
Distinct Color LCD Apparatus	US	7,719,501	2006-0007090	30/09/2003	granted
	HK	05107359			pending
Display Panel and Large Display Using Such Display Panel	US	7,551,245	2006-0097957	26/11/2003	granted
Structurally Supported LCD Media	US	7,495,718	2007-015321	10/10/2004	granted
Driving Cholesteric Liquid Crystal Material into the Focal Conic State	TW	094119697	200612375	14/06/2005	pending
	HK	07102685.9			pending

Drive Scheme for a Cholesteric Liquid Crystal Display Device	JP	2007-540704	2007-540704	07/11/2005	pending
	US	8,013,819	2008-519996	07/11/2005	granted
Cholesteric Liquid Crystal Display Device	US	12/089,942		11/10/2006	Pending
	TW	095137573			pending
Lighting a Cholesteric Liquid Crystal Display Apparatus	US	12/301,659	2009-0174643	18/05/2007	Pending
	JP	2009-511566			pending
Protection of a Cholesteric Liquid Crystal Display Device	CN	200780030110.0		17/05/2007	pending