

## PATENT SCHEDULE of granted patents and published patent applications

### Introduction

Contra Vision Ltd is an intellectual property company which licenses patents, trade marks and secret know-how related to one-way vision and other vision control panels. Its Vision Management System™ is based on two dominant patent families for the two basic types of see-through graphics:

**US RE37,186, GB 2 165 292** and family member patents in 21 countries. These typically expired in July 2005.

These patents disclose Contra Vision® panels with an opaque "print pattern" ("silhouette pattern") on which is superimposed a design, the design being visible from one side of the panel but not from the other side of the panel. Although now expired, nearly all the vision control products that were covered by these patents continue to be covered by our improvement patents in the following schedule.

**US 6,212,805, EP 0 880 439** and family member patents. These typically expired in January 2017.

Contra Vision® BACKLITE™ panels with a translucent "print pattern" ("base pattern") on which is superimposed a design visible from one side, a reverse (mirror) image of which is typically visible from the other side, which are capable of rear illumination or rear projection.

The patent portfolio includes many improvement patents and patent applications for see-through graphic products and their methods of production.

Contra Vision Ltd welcomes questions on its patent portfolio and how patents cover particular vision control panels – UK +44 161 439 9307

# CONTRA VISION LTD PATENT SCHEDULE

Updated 20.05.20

<u>PATENT FAMILY</u>	<u>TITLE</u>	<u>COMMENTS</u>
US 7,087,291	Partial Printing of a Substrate with Edge Sealed Printed Portions	Overlap Registration System™
US RE 43,855	Printing with Differential Adhesion	exact registration printing and UV inkjet Impress™
US 8,784,932	Glass Panels Partially Printed with Ceramic Ink Layers in Substantially Exact Registration	ceramic ink frit-loaded
US RE 47,438	UV Inkjet Printing of Vision Control Panels	UV inkjet (Contra Vision® Impress™)
EP 2097269	Improvements to Printing Superimposed Layers	PPM Type II exact registration
US 8,394,477	Vision Control Panel Assembly with a Contrasting Colored Liner	Contra Vision® <u>Grayliner™</u> (all technologies)
US 8,973,501	Printing Layers of Ceramic Ink in Substantially Exact Registration by Differential Ink Medium Thermal Expulsion	ceramic ink stencil method and 2 other methods.
US 9,168,730	Printing Layers of Ceramic Ink in Substantially Exact Registration by Differential Ink Medium Thermal Expulsion	Differential frit method
US 9,469,081	Open Perforated Material and Method of Imaging to Form a Vision Control Panel	WYSIWYG when printed
EP 3493980	Partially Perforated Assembly	Airscape

APPLICATION NO	TITLE	DATE FILED	PUBLICATION NO	APPL. PUBLISHED	PATENT NO	PATENT GRANTED
<b>Contra Vision® ORS™ "EDGE SEALED" Method</b> (inventor G. Roland Hill)						
PCT/IB02/01549	Partial Printing of a Substrate with Edge Sealed Printed Portions	18.01.02	WO02/070269	12.09.02		
EPC 20020726362.3 United Kingdom	"	18.01.02	EP1392526	03.03.04	EP1392526 1392526	10.03.10
USA 09/764.276	"	19.01.01			US6,506,475B1 Reissued as RE40,024	14.01.03 22.01.08
USA 10/466,537	"	19.12.03	US2004/0091680	13.05.04	US7,087,291	08.08.06
<b>Printing with DIFFERENTIAL ADHESION (UV ink)</b> (inventors G. Roland Hill and C. Parry)						
PCT/IB03/00555	Printing with Differential Adhesion	23.01.03	WO03/61970			
USA 11/716,727	"	12.03.07			Reissued as US RE43,855	11.12.12
EP 03710064.1 United Kingdom	" "	23.01.03 23.01.03	EP1467870	20.10.04	EP1467870 1467870	29.11.06
<b>FRIT-LOADED CERAMIC INK Print Pattern</b> (inventors G Roland Hill and H Quinn)						
GB 0222765.0	Glass Panels Partially Printed with Ceramic Ink Layers in Substantially Exact Registration	02.10.02				
PCT/GB2003/004216	"	29.09.03	WO04/030935	15.04.04		
Australia 20030267659	"	29.09.03	AU2003267659	23.04.04	AU2003267659	04.12.08
Canada 2500406	"	29.09.03	CA2500406	15.04.04	CA2500406	17.11.09
EP 03748351.8	"	29.09.03	EP1549498	13.07.06	EP1549498	09.04.14
Austria	"				1549498	
Belgium	"				1549498	
France	"				1549498	
Germany	"				1549498	
Spain	"				1549498	
United Kingdom	"				1549498	
South Africa 2005/02661	"	29.09.03			ZA2005/02661	28.06.06
USA 10/529,367	"	28.03.05	US2006/0150680	13.07.06	US8,784,932	22.07.14

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<b>UV INKJET Printing of Vision Control Panels</b> (inventor G Roland Hill)						
GB 0503532.4	UV Inkjet Printing of Vision Control Panels	21.02.05				
PCT/GB2006/000601	"	21.02.06	WO2006/087583	24.08.06		
Australia 20060215439	"	21.02.06	AU2006215439	24.08.06	AU2006215439	21.01.10
Canada 2598466	"	21.02.06	CA2598466	24.08.06	CA2598466	12.06.12
EP 06709837.6	"	21.02.06	EP1851062	07.11.07	EP1851062	04.05.16
Austria	"				1851062	
Belgium	"				1851062	
France	"				1851062	
Germany	"				1851062	
Italy	"				1851062	
Netherlands	"				1851062	
Spain	"				1851062	
Switzerland	"				1851062	
United Kingdom	"				1851062	
Japan 2007-555708	"	21.02.06	JP2008-530619	07.08.08		
2011-222283 (new divisional)	"	06.10.11	JP2012-037903	23.02.12	JP5430631	13.12.13
South Africa 2007/6940	"		ZA200706940	20.08.07	ZA200706940	29.10.08
USA 11/816,765	"	21.08.07	US2008-0211866	04.09.08	US8,500,268	06.08.13
14/816,555 (reissue)		03.08.15		Reissued as	USRE47,438	18.06.19
<b>PPM TYPE II Improvements to Printing Superimposed Layers</b> (inventor G Roland Hill)						
USA 60/858,697	Improvements to Printing Superimposed Layers	14.11.06				
PCT/IB2007/004462	"	14.11.07	WO2008/084332	17.07.08		
EP 07872072.9	"	14.11.07	EP2097269	09.09.09	EP2097269	25.04.12
United Kingdom	"				2097269	
<b>Contra Vision® <i>Grayliner</i>™</b>						
<b>CONTRASTING COLORED LINER Vision Control Panels</b> (inventors G Roland Hill and Mark Godden)						
USA 60/941,882	Vision Control Panel Assembly with a Contrasting Colored Liner	04.06.07				
USA 12/663,184	"	04.06.08	US2010/0181020	22.07.10	US8,394,477	12.03.13
PCT/IB2008/052189	"	04.06.08	WO2008/149301	04.06.08		
Australia 2008259392	"	04.06.08	AU2008259392	11.12.08	AU2008259392	24.05.14
China 200880025306.5	"	04.06.08	CN101754865B	23.06.10	ZL200880025306.5	19.06.13
EP 12169357.6 (new div. app)	"	04.06.08	EP2505376	03.10.12	EP2505376	19.10.16
Germany	"				2505376	
United Kingdom	"				2505376	
Japan 2010-510941	"	04.06.08	JP2010529498	26.08.10	JP5802388	28.10.15

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<b>Printing Superimposed Layers of CERAMIC Ink in Substantially Exact Registration by Differential Ink Medium THERMAL EXPULSION</b> (Inventors G. Roland Hill, R. Schroeder, G. Eaton)						
GB 0823712.5	Printing Layers of Ceramic Ink in Substantially Exact Registration by Differential Ink Medium Thermal Expulsion	31.12.08				
PCT/GB2009/002972	"	29.12.09	WO2010/076563	08.07.10		
Australia 20090334549	"	29.12.09	AU2009334549	28.07.11	AU2009334549	20.02.14
EP09808942.8	"	29.12.09	EP2370268	05.10.11	EP2370268	26.12.12
Austria	"				2370268	
Belgium	"				2370268	
France	"				2370268	
Germany	"				2370268	
Italy	"				2370268	
Spain	"				2370268	
United Kingdom	"				2370268	
Japan 2011-544079	"	29.12.09	JP2012513918	21.06.12	JP5496224	14.03.14
2013-174551 (new divisional)	"	26.08.13	JP2014012411	23.01.14	JP5496400	14.03.14
South Africa 2011/05561	"	28.07.11			ZA2011/05561	27.06.12
USA 13/142,680	"	22.02.12	US2012/0145017	14.06.12	US8,973,501	10.03.15
USA 14/327,060 (continuation)	"	09.07.14	US2014/0318396	30.10.14	US9,168,730	27.10.15

**OPEN PERForated Material and Method of Imaging to Form a Vision Control Panel** (Inventors: G. Roland Hill and Mark David Godden)

USA 61/505,829	Open Perforated Material and Method of Imaging to Form a Vision Control Panel	08.07.11				
USA 14/131,139	"	09.07.12	US2014/0141197	22.05.14	US9,469,081	18.10.16
PCT/IB2012/001352	"	09.07.12	WO2013008077	17.01.13		
China 201280041979.6	"	09.07.12	CN103826867A	28.05.14	ZL201280041979	22.03.17

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<b>Partially Perforated Assembly</b> (Inventors G Roland Hill and Mark David Godden)						
PCT/IB2017/056763	Partially Perforated Assembly	31.10.17	WO2018078608	03.05.18		
US16/346,323	"	30.04.19	US2019/0299577	03.10.19		
EP17825925.5	"	31.10.17	EP3493980	12.06.19	EP3493980	25.03.20
France	"				EP3493980	
Germany	"				EP3493980	
Netherlands	"				EP3493980	
UK	"				EP3493980	

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