PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
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NOAM ROZENSHTEIN	07/28/2011
TOMER SEGEV	07/28/2011
AVI LEVY	07/28/2011

RECEIVING PARTY DATA

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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13545014

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DATE SIGNED:	08/31/2015

Total Attachments: 9
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IP Committee Protocol from "___" "_____" 201_

Decision: File or Public or Abandon

Title: Initial Invention Disclosure Form for

Automated inspection before and after digital printing

Department :
(PCB, MEP, DMD, SELA):

Document History

Date	Version	Description of Update	Written by
28.7.2011	1.0	Create	Avi Levy

Date:

(Provide Initial Date of Invention)

__/_____/20__

Title:

Automated inspection prior and post digital printing

Notes: The title shall not include the invention but rather be more general - it may indicate what is the overall goal of the invention (detecting a defect, monitoring an operator, evaluating a roughness of a surface, generating a TEM sample)....
Software invention can have the following title: A computer program product for.....

Inventors (Provide Names of all inventors and their addresses)

Inventor	Full Name	Address
# 1	Yosi Cherbis	Berl Katzenelson 67, Haifa
# 2	Noam Rozenstein	Yigal Cohen 14, Afula
# 3	Tomer Segev	Ha'horesh 31b, Kiryat Tivon
# 4	Avi Levy	Mitzpe Aviv, 20187

General Information about the process of discovering the invention:

N	Item	Title/File name	Author	Date
1	First written document, drawing or/and sketches	Emails		
2	Applicable Meeting summary or/and Applicable written article			
3				

Please attach all available original documents described above. If the document is not available ask at least 2 participants to provide their testimony supporting this Initial Disclosure.

Background

In most production processes, in order to increase the production yield, inspection systems are added to the production line to detect production defects before the final product is completed, therefore, increasing the production yield.
Now days, that digital printing becomes a method of producing products such as PCBs, solar cells and other printed electronics products, it makes sense to incorporate inspection into the printing systems to perform online inspection.
With the use of digital printing, the inspection can be incorporated also in between the printed layers / processes.
Incorporating the inspection system within the printing system provides many benefits such as minimizing handling related defects and can guarantee good final product.
With today's traditional manufacturing of PCB the AOI inspection is done on a separate tool and practically can't be used for 100% in process inspection.

Provide a general description of the relevant field. Examples:
- *Inspection of PCBs, yield management, failure analysis.*

Explain current situation in industry - most common solutions and practices. Examples:
- *PCB is manufactured by a complex manufacturing process. In order to increase the yield of the PCB manufacturing process various inspection processes were developed...*
- *Failure analysis may involve preparing a TEM sample. The TEM sample should be very thin...*

Note: This document is a technical document - do not try to be a patent attorney or use "legal" words.

Problem(s) to be solved and advantages by the invention:

Example:

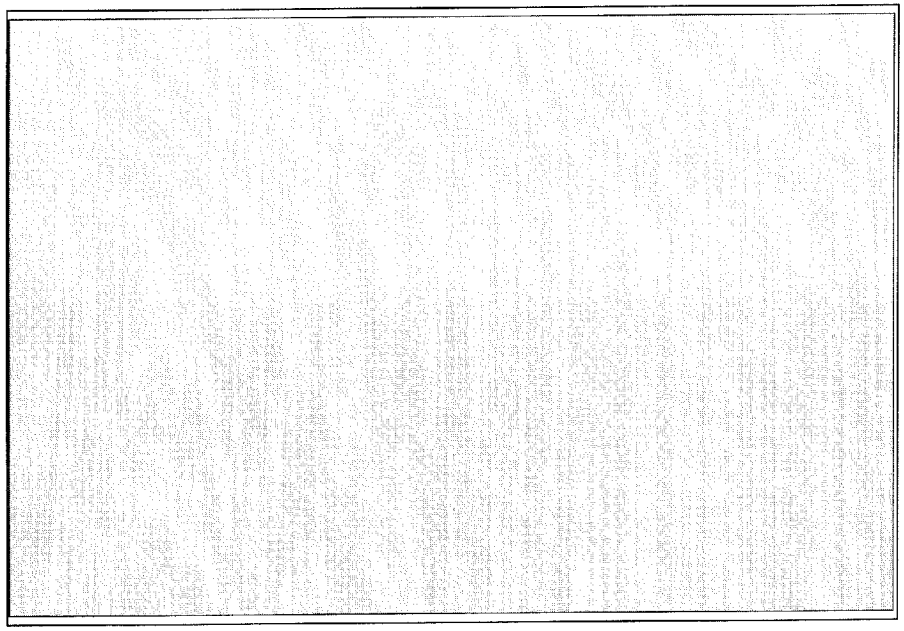
Problem	*Advantage*	*Describe HOW*
Process is too slow	*Speed up the process*	*HOW the system / method speeds up the process*
Yield is too low	*Increase yield*	*HOW the system / methods increases the yield*
Cost is too high	*Reduce cost*	*HOW the system / methods reduces cost*
Tool is too expensive	*Reduce cost*	*HOW the system / methods reduces cost*
Inspection not accurate	*Increase accuracy*	*HOW the system / method increases accuracy*
High energy consumption	*Reduce energy consumption*	*HOW the system / method reduces energy consumption*

Do not use the term "invention" - if you invent a method please use the term "method". If you invent a device or system - please use the term "device" or "system". Provide examples of the problems to be solved. The advantages of the invention should include which problem is solved and HOW the problem is solved.

Problem	Advantage	Describe HOW
Digital Printing may inhibit printing errors and defects that may cause final defects in the produced product	Online inspection will provide feedback on the printing quality	By adding inspection capabilities to the printing system, the inspection can be done on the printer, therefore, reducing handling defects, reducing production costs etc.
The printing may be performed on a defected substrate	Performing inspection prior to the printing will verify that the substrate has no defects	By adding inspection capabilities to the printing system, the inspection can be done on the printer, therefore, reducing handling defects, reducing production costs etc.
In multiple layer printing, printing defects occur in internal layers with no detection, therefore higher scrap rate may occur	Inspection will be done every layer to assure perfect print in every layer	By incorporating the inspection on the printing system the inspection can be done through process

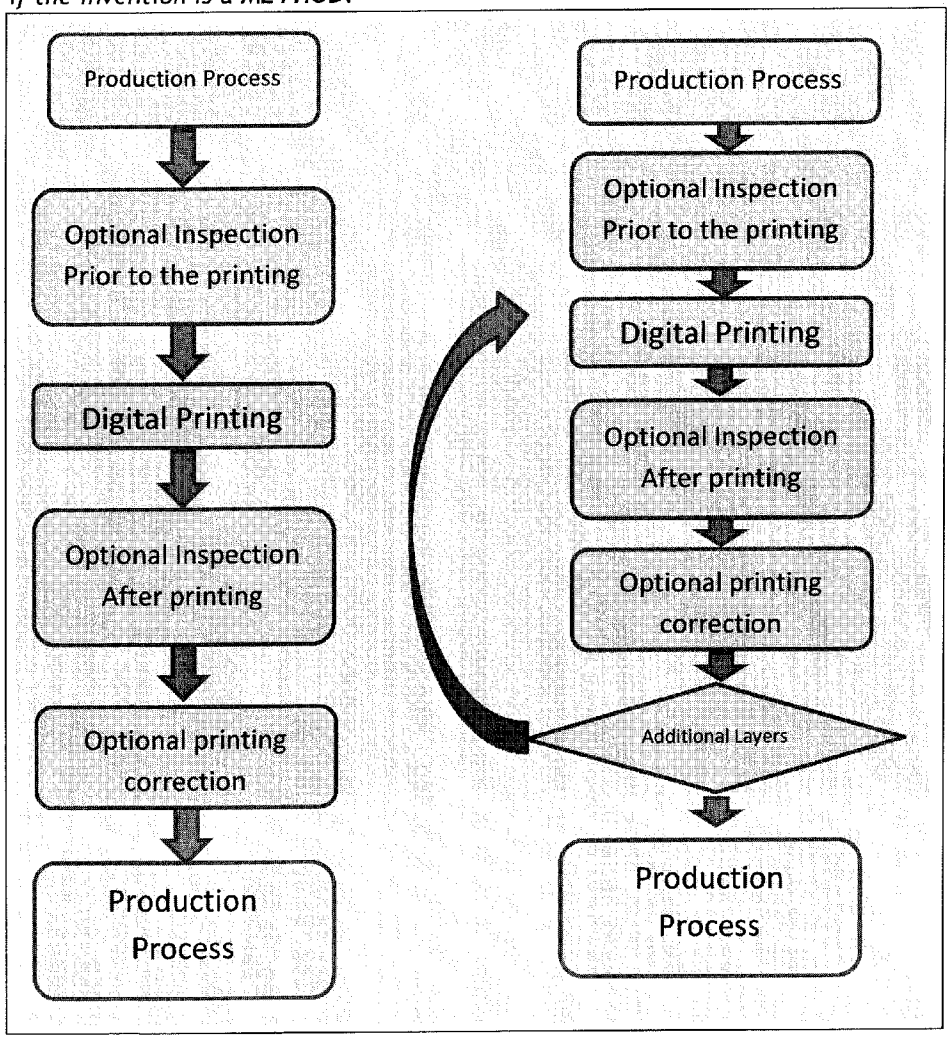
Brief Description of the invention

If the invention is a **SYSTEM:**



If the invention is a SYSTEM - draw the block-scheme of the system, describe the elements of the systems and explain each element of the system. Each element of the system should be linked to the solution that you found. Provide as many options as possible.

*If the invention is a **METHOD:***



If the invention is a METHOD - draw a flow chart (work flow) that illustrates each possible step of the method and relationship between steps that enable the system / method to operate. Provide as many options as possible.

Notes: If the invention is System and Method - draw both related chapters

The description should enable a man skilled in the art to understand the invention. The description should concentrate on the manner in which your system/method solves the problem. You should provide a more detailed description of the elements (method stages, system components) that differ it from prior art elements.
The text should be accompanied by one or more drawings. Drawings can include flow charts (of methods), timing diagrams, block diagrams, 3D or 2-D drawings of mechanical parts / optics.
Please add (as an attachment) any notebook records or other internal documents that describe the system/method

Possible embodiments [alternatives] of work flow and each one of system' elements

Etch resist printing, Solder mask Printing (prior patent exists), Legend printing, 3D parts printing etc.

You should include all possible options - including options that are not expected to be included in the current version of the system/ method or even be implemented in the future - and including options that were not fully evaluated or tested.

Attach all necessary sketches and draws describing work flow, system, it elements and method of operation for preferable and all possible embodiments.

Signatures

Signature of inventor(s):

	Name	Signature	Date
Inventor # 1:	Yosi Cherbis		28.7.11
Inventor # 2:	Noam Rozenstein		-"-
Inventor # 3:	Tomer Segev		28/7/11
Inventor # 4:	Avi Levy		28.7.11

Approved by:

Title	Name	Signature	Date
R&D Manager	Noam Rozenstein		28.7.11
Marketing Manager	Tomer Segev		28/7/11

ASSIGNMENT

We, the inventor (s) _____ ("Assignors") hereby assign to CAMTEK Ltd. a corporation of Israel, having a principal place of business at Ramat Gabriel Industrial Park P.O.B 544 Migdal-Haemek 23150, Israel ("Assignee"), the entire right for the invention, which was developed as part of the Assignors job's description and entitled _____ and to possible corresponding applications to be filed worldwide according to exclusive decision of Camtek Ltd. (hereinafter: "IP Rights");

Cooperation

The Assignor(s) agree to sign any further assignments or documents that may be needed in the future in order to execute IP Rights.

Assignor(s) hereby irrevocably appoint the Assignee to execute such further documents, and do such other acts and things as may be necessary or appropriate to in order to give effect to the IP Rights.

In witness whereof, we hereby affix our names and signatures, on this ____ of _____, 2011:

Each Inventor: Please Sign Below:

Date: 28.7.11 Name: Yosi Cherbis, Signature: _____

Date: -"- Name: Noam Rosenstein, Signature: _____

Date: 28/7/11 Name: Tomer Seger, Signature: _____

Date: -"- Name: Avi Levy, Signature: _____