Rapiscan systems	BAGGAGE/PARCEL CABINET X-RAY SYSTEM RADIATION LEAKAGE REPORT	FIELD SERVICE ENGINEERS	Form R-0588-3 9/9/09 45. RSI W.O.# Deferred W.O.# 3742913

1. Name of Facility: Raleigh Durham Int. Airport	2. Region: NC	3. Street Address: 1600 East Terminal Blvd
4. City: Raleigh	5. State or Province Code: NC	6. Zip Code: 27623
7. Room No. or Other Physical Location of System: Chkpt 1 Ln 5	8. [redacted]	9. [redacted]
11. Manufacture Information & Certification Label Present: ☒ Yes - Pass ☐ No - Fail	12. Radiation Measuring Instrument: Model: Inovision 451P Serial No. 0665 Calibration Due Date: 8/2/11	Pre-Shall Attach Copy of Calibration Certificate to This Form
Manufacturer: Rapiscan Systems Inc.	13. System Model No.: 620DVAT	14. Single Source ☐ Other ☐ Describe: Dual Source ☒
15. System Serial No.: 7084408		
16. Date of Manufacture: Mo. 10 Yr. 08	18. Facility Owner Has been notified of responsibility for "Application for Registration" with their State Radiation Control Agency: ☒ Yes ☐ No	19. Customer has been notified of their responsibility for posting their State "Notice to Employees" Document and Posted in Several Conspicuous Locations so Employees Can View: ☒ Yes ☐ No
17. X-ray Tube Serial Number(s): P-6245 (V) P-6242 (H)	20. Operator Instructions Available: ☒ Yes - Pass ☐ No - Fail	21. Maintenance Schedule Available: ☒ Yes - Pass ☐ No - Fail
22. Warning Label Present at Controls Stating: "Caution: X-Rays Produced When Energized" ☒ Yes - Pass ☐ No - Fail	23. Warning Labels Present at Ports Stating: "Caution: Do Not Insert Any Part of the Body When System is Energized, X-Ray Hazard" ☒ Yes - Pass ☐ No - Fail	24. Two Indicators Labeled "X-Ray On" Present at Controls (Including software user interface): ☒ Yes - Pass ☐ No - Fail
25. At Least One Indicator, Marked "X-Ray On" is Visible from Each Port: ☒ Yes - Pass ☐ No - Fail	26. Captured Key: The Key for the Key Actuated Control Cannot be Removed in Any Mode that Allows X-Ray Generation: ☒ Yes - Pass ☐ No - Fail	
27. All Doors and Access Panels To the X-Ray Beam Present Generation of X-Radiation: ☒ Yes - Pass ☐ No - Fail	28. Some Part of the Body Can Be Inserted Through a Port Into The Primary Beam: ☐ Yes ☒ No	
29. Use of X-Ray Control Necessary to Resume Operation Following Interruption: ☒ Yes ☐ No	30. Means Provided to Ensure Operator Presence at the Control Area X-ray located in a public access area: ☒ Yes - Pass ☐ No - Fail Or X-ray located in a non-public access area ☐ Not Required	
Rapiscan Systems Test Procedure Used: Rapiscan Systems WI-0023-4	31. Scatter Block Description: ☒ Two (2) Reams Copy Paper ☐ Other, Describe:	32. Means Provided to Operator for Terminating Exposures of Greater than One-Half Second and Preventing X-rays (E-Stop Test): ☒ Yes - Pass ☐ No - Fail
33. X-Ray Generator Settings: 160.8 kVp - 1.007 mA V; 160.8 1.007 H	Note: All Survey Measurements Shall be Obtained at 5 cm from All External Surfaces and at 5 cm from the Plane of All Access Port Openings or Shroud Extension Openings. Scatter Block shall be Stacked and Positioned Centerline of Primary Beam.	
34.1 Background Radiation: 1 uR/hr	–	Maximum External Surface Dose Rate Not to Exceed 500 uR/hr at 5 cm from all external surfaces.

34.3 Record All Readings in uR/hr Unless Otherwise Noted

Please see model specific diagram (attached)

36. Overall Condition of Lead Drapes: ☒ SAT - Pass ☐ UNSAT - Fail Description	37. Overall Condition of Machine: ☒ SAT - Pass ☐ UNSAT - Fail	38. Comments, Corrective Active Actions and/or Recommendations: No issues found with unit
39. Surveyor Name (First / C.F. 14): [redacted]	40. [redacted]	41. Date of Survey: 3/19/11 — 42. Time of Survey: 18:30
The Surveyor has inspected, tested and certified this x-ray machine is in compliance with U.S. FDA 21 CFR 1020.40 and equivalent international radiation emission leakage standards.	43. I ([redacted]) have received a copy of this Radiation Survey Report and understand the responsibility to retain this report for State inspection. Signature: [redacted] Date: 3/19/11	

This report is to certify this x-ray unit has been surveyed for radiation leakage emissions and found to be within the regulatory radiation emission limit. The safety features, controls and indicators incorporated in the x-ray unit have been satisfactorily tested and/or inspected. The owner of this x-ray unit is responsible for State Radiation Control Agency compliance (not applicable for facilities exclusively operated by the Federal Government) and for the safe use and routine inspection, general maintenance and cleanliness of this x-ray unit. Only trained and qualified individuals should operate this equipment.

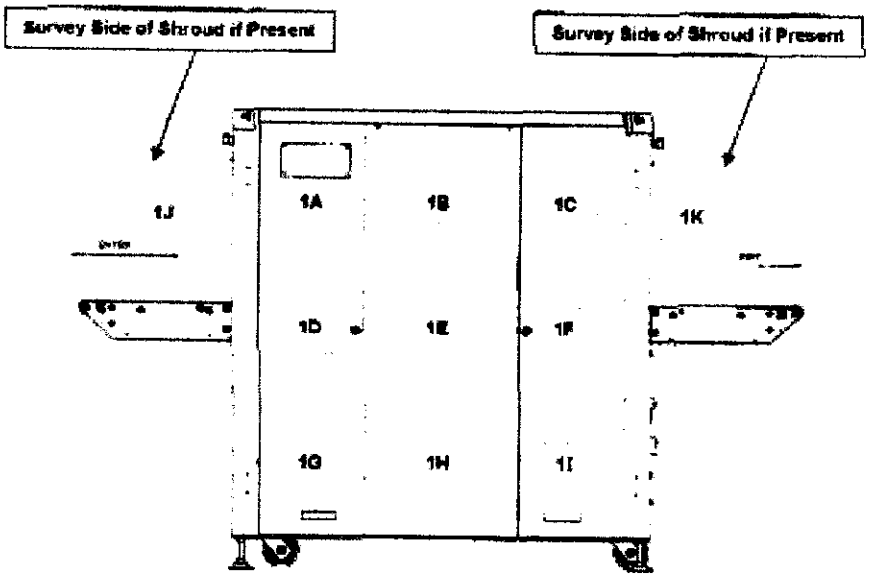
Rapiscan	MODEL 620DV OR 800 SERIES EQUIVALENT RADIATION LEAKAGE SURVEY FORM	MODEL 620DV FSE SURVEY FORM	FORM FSE-R-0047-620DV-1

FIELD SERVICE ENGINEERS RADIATION EMISSION SURVEY

United States and Canada External Surface Radiation Leakage Limit is 5.0 uSv/hr at 5 cm (500 uR/hr)

Global External Surface Radiation Leakage Limit is 1.0 uSv/hr at 5 cm (100 uR/hr at 5 cm)

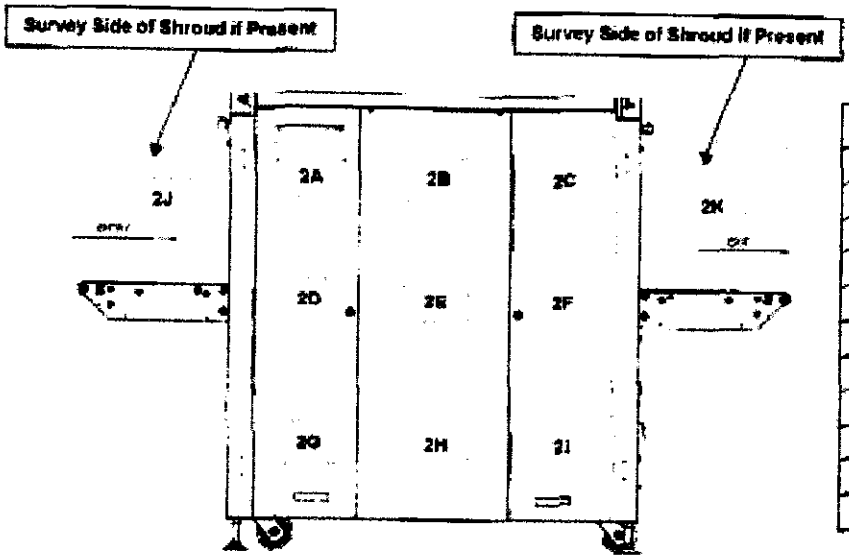
Date: 3/19/11	Location Manufactured: (Check One) ___ Malaysia ___ UK ✓ US	Instrument Model No: Thermoscan 451P
Time: 18:30	Date of Mfg: 10/08	Instrument Serial No: 0665
Background: ___ uSv/hr (2 uR/hr)	Serial No: 7084908/3742913	Instrument Calibration Due: 8/2/11
All Measurements Recorded in: ___ uSv/hr ✓ uR/hr (Check One)	Settings: 160.8 kvP 1.007 mA ✓ Settings: 160.8 kvP 1.007 mA H	Description of Scatter Body: (Check One) ✓ Paper (2 Reams, 500 sheets each) ___ Wood Block (4" x 4" x 12" L) ___ Other



Operators Side

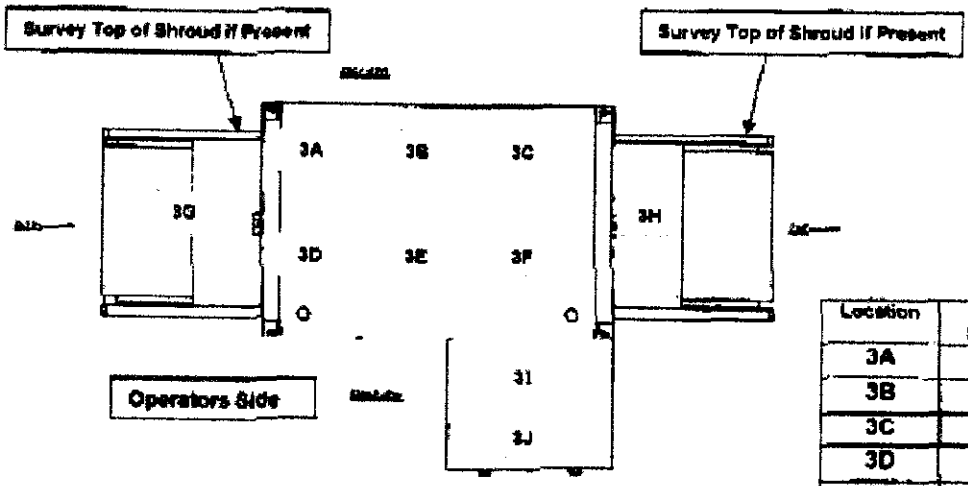
Location	Results NO Scatter Body	Results WITH Scatter Body
1A	12	15
1B	13	17
1C	23	23
1D	20	15
1E	24	16
1F	32	32
1G	6	7
1H	16	8
1I	5	17
1J	16	35
1K	31	54

FIELD SERVICE ENGINEERS RADIATION EMISSION SURVEY



Non-Operators Side

Location	Results NO Scatter Body	Results WITH Scatter Body
2A	12	13
2B	21	22
2C	27	24
2D	12	13
2E	13	12
2F	13	17
2G	12	12
2H	12	17
2I	9	9
2J	71	84
2K	134	171

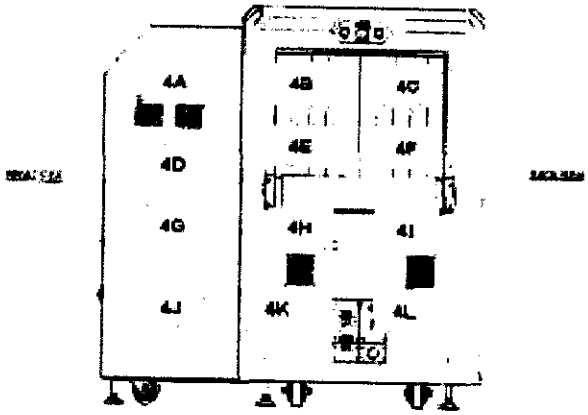


Top View

Location	Results NO Scatter Body	Results WITH Scatter Body
3A	18	20
3B	17	22
3C	9	19
3D	18	18
3E	19	22
3F	11	17
3G	77	87
3H	34	84
3I	34	41
3J	17	30

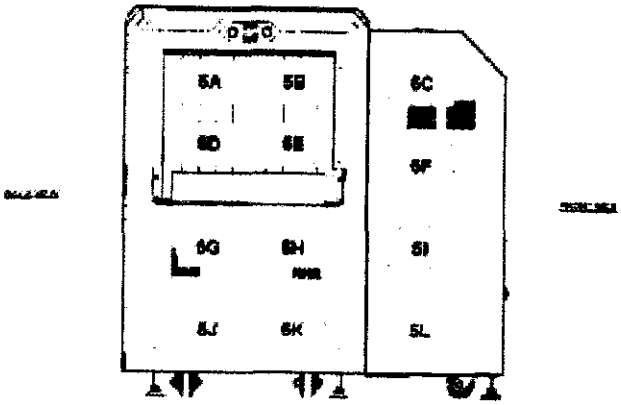
FIELD SERVICE ENGINEERS RADIATION EMISSION SURVEY

EXIT TUNNEL



Location	Results NO Scatter Body	Results WITH Scatter Body
4A	19	29
4B	28	44
4C	21	44
4D	20	28
4E	45	57
4F	25	52
4G	13	17
4H	17	23
4I	18	30
4J	12	13
4K	7	11
4L	9	17

ENTRANCE TUNNEL



Location	Results NO Scatter Body	Results WITH Scatter Body
5A	31	59
5B	29	55
5C	18	27
5D	37	46
5E	24	45
5F	29	39
5G	7	11
5H	12	15
5I	25	20
5J	5	7
5K	10	9
5L	6	8

Instructions:

- If shrouds are NOT installed, radiation measurements shall be taken 5 cm from the lead drapes.
- If shrouds are installed, radiation measurements shall be taken at the imaginary plane of the shroud opening.
- Lead Drapes should touch the conveyor. If they do not, check to verify x-ray radiation is not travelling down the conveyor where the gap exists between the lead drapes and the conveyor surface.
- Survey below the c[redacted]near any gaps, mating surfaces, and photo sensor cut-outs.

SURVEY PERFORMED BY: [redacted] DATE: 3/19/11