

TESTING AND COMMISSIONING PROCEDURE

FOR

BURGLAR ALARM AND SECURITY INSTALLATION

IN

GOVERNMENT BUILDINGS

OF

THE HONG KONG SPECIAL ADMINISTRATIVE REGION

2007 EDITION



ARCHITECTURAL SERVICES DEPARTMENT
THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

PREFACE

This Testing and Commissioning (T & C) Procedure aims to lay down the minimum testing and commissioning requirements to be carried out on burglar alarm and security installation in Government Buildings of the Hong Kong Special Administrative Region (HKSAR). Such requirements are applicable to both new installations upon completion and existing ones after major alteration.

The present edition was developed based on its 2002 edition by the Electrical Specialist Support Group that was established under the Building Services Branch Technical Information and Research & Development Committee. With the benefit of information technology, electronic version of this new edition is to be viewed on and free for download from the Architectural Services Department (ArchSD) Internet homepage. As part of the Government's efforts to limit paper consumption, hard copies of this T & C Procedure will not be put up for sale.

The Architectural Services Department welcomes comments on its contents at anytime since the updating of this T & C Procedure is a continuous process to tie in with technological advances.

DISCLAIMER

This T & C Procedure is solely compiled for use on burglar alarm and security installation carried out for or on behalf of the ArchSD in Government buildings of the HKSAR.

There are no representations, either expressed or implied, as to the suitability of this T & C Procedure for purposes other than that stated above. The material contained in this T & C Procedure may not be pertinent or fully cover the extent of the installation in non-government buildings. Users who choose to adopt this T & C Procedure for their works are responsible for making their own assessments and judgement of all information contained here. The Architectural Services Department does not accept any liability and responsibility for any special, indirect or consequential loss or damage whatsoever arising out of or in connection with the use of this T & C Procedure or reliance placed on it.

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B.S.B. Testing and Commissioning Procedure Burglar Alarm and Security Installation

1. Introduction

The procedures stated in this document cover the activities in preliminary tests and inspections, functional performance tests and the commissioning of newly completed installations and existing ones after major alteration. They are so compiled to facilitate the work of Project Building Services Engineer (PBSE) and Project Building Services Inspector (PBSI) in the following aspects of work with respect to testing and commissioning (T & C): -

- 1.1 To vet and approve the T & C procedures proposed and submitted by the Contractor.
- 1.2 To witness those T & C procedures as specified; and
- 1.3 To accept the T & C certificate and other supporting data.

The Contractor shall carry out the T&C works as detailed in this document. Supplementary T & C plans may be proposed by the Contractor as appropriate and agreed by PBSE, e.g. for special equipment supplied and/or installed by the Contractor.

The administrative requirements for T&C works are in general as specified in the Particular Specification for Burglar Alarm and Security Installation (the Particular Specification) in the contract document of individual project issued by the Building Services Branch of the Architectural Services Department. If there is any discrepancy between this procedure and the Particular Specification, the Particular Specification shall take precedence.

2. Objectives of the Testing and Commissioning Works

The objectives of the T & C are: -

- 2.1 To verify proper functioning of the equipment/system after installation; and.
- 2.2 To verify that the performance of the installed equipment/systems meet with the specified design intent through a series of tests and adjustment; and
- 2.3 To capture and record performance data of the whole installation as the baseline for future operation and maintenance.

For the avoidance of doubt, depending on the specific demands of individual installation, the PBSE may require additional or substitute T & C works in regard to any elements in the installation other than those indicated in this procedure.

3 Scope of the T & C Works

3.1 Tests and Inspections during Construction

The purpose of these tests is to ensure that all components and systems are in a satisfactory and safe condition before start up. Preliminary adjustment and setting of equipment at this stage shall also be carried out at the same time to pave way for the coming functional performance tests.

Before carrying out any test, the Contractor shall ensure that the installation complies with all relevant statutory requirements and regulations. The T & C works shall also comply with all site safety regulatory requirements currently in force namely: -

- 3.1.1 Electricity Ordinance, Chapter 406, and other subsidiary legislation made under the Ordinance;
- 3.1.2 Code of Practice for the Electricity (Wiring) Regulations published by the Electrical and Mechanical Services Department, the Government of the HKSAR;
- 3.1.3 IEC 364 “Electrical Installations of Building”;
- 3.1.4 Occupational Safety and Health Ordinance, Chapter 509, and other subsidiary legislation made under the Ordinance;
- 3.1.5 Factories and Industrial Undertakings Ordinance, Chapter 59, and other subsidiary legislation made under the Ordinance;
- 3.1.6 Construction Site (Safety) Regulations;
- 3.1.7 Construction Site Safety Manual issued by the Environmental, Transport and Works Bureau, the Government of the HKSAR.

3.2 Functional Performance Tests

The purpose of functional performance tests is to demonstrate that the equipment/installation can meet the functional and performance requirements as specified in the Particular Specifications. Functional performance test should proceed from the testing of individual components to the testing of different systems in the installation.

The Contractor may have to make temporary modifications as the test proceeds. The specific tests required and the order of tests will vary depending on the type and size of systems, number of systems, sequence of construction, interface with other installations, relationship with the building elements and other specific requirements as indicated in the Particular Specifications. The testing of systems may have to be carried out in stages depending on the progress of work or as proposed by the Contractor.

Part of the tests may be required to be carried out in suppliers' premises in accordance with the provisions in the Particular Specification.

Any performance deficiencies revealed during the functional performance tests must be evaluated to determine the cause and whether they are part of the contractual obligations. After completion of the necessary corrective measures, the Contractor shall repeat the tests.

If any test cannot be completed because of circumstances that are beyond the control of the Contractor, it shall be properly documented and reported to the PBSE, who shall then liaise with the relevant parties to resolve the situation. The Contractor shall resume his testing work immediately upon the attainment of a suitable testing environment.

3.3 Commissioning Inspection

Commissioning is the advancement of an installation from the stage of static completion to full working conditions and to meet the performance requirements as specified in the Particular Specification. This will include setting into operation and regulation of the installation. It is expected that fine-tuning of the commissioned system shall be done by the Contractor to match system performance to the actual needs of the building occupier more closely.

Where necessary, after the proper testing and commissioning of the Burglar Alarm and Security Installation, the Contractor shall notify the appropriate authority, through the PBSE of the completion of the installation and its readiness for final inspection.

3.4 Documentation and Deliverables

The Contractor shall submit his proposed T & C procedures together with the Testing and Commissioning Progress Chart shown in Annex B to PBSE for approval.

All inspection and T&C results shall be recorded by the Contractor in the appropriate test record forms, the reference of which is shown against each individual test. A complete set of these forms can be found in Parts 3 and 4 of Annex A.

Data recorded in other formats may also acceptable subject to agreement between the PBSE and the Contractor. Upon completion of all the required T&C works, the Contractor's project engineer shall complete and sign a testing and commissioning certificate as shown in Part 1 and 2 of Annex A to the effect that the agreed T & C works have been duly carried out.

A functional performance test report covering all measured data, data sheets, and a comprehensive summary describing the operation of the system at the time of the functional performance tests shall be prepared and submitted to the PBSE. Deviations in performance from the Particular Specifications or the design intent should be recorded, with a description and analysis included.

Where required in the Particular Specification, the Contractor shall conduct a final evaluation of the performance of the Burglar Alarm and Security Installation, the results of which shall be included in the commissioning report.

4 T & C Procedures

4.1 General Requirements

4.1.1 The Contractor shall submit the T&C procedures together with the Testing and Commissioning Progress Chart in Annex B to the PBSE for approval. The submission shall be made at least one month before the commencement of T&C.

4.1.2 Where tests are required to be witnessed by the PBSE/PBSI, the Contractor shall give due advance notice (usually not less than three days) and provide details of date, time and type of tests to be performed.

4.1.3 Upon completion of such T & C procedure, the Contractor shall complete and sign a testing and commissioning certificate as Annex A, to the effect that agreed T & C procedures have been duly carried out.

4.1.4 Before carrying out any test, the Contractor shall ensure that the installations comply with the statutory requirements and regulations.

4.2 Testing and Inspection

4.2.1 Test and Inspection During Construction

The purpose of these tests is to ensure that all components and systems are in a satisfactory and safe condition before start up. Preliminary adjustment and setting of equipment at this stage shall also be carried out at the same time to pave way for the coming functional performance tests. Some basic elements of a Burglar Alarm and Security Installation are list below.

- Central Control Station
- Communication Network
- Uninterrupted Power Supply
- Remote Signal Transmission
- Card Access Control System
- Security Lock and Switch
- Doorphone System
- Movement Detector
- Glass Breakage Detector
- Security Closed Circuit Television Surveillance System
- Watchman Tour System

The Contractor shall submit the details of the tests and inspection during construction to PBSE for approval on commencement of the function performance tests.

The tests and inspection during construction shall include, but not limited to, the followings:

- (a) The checking of the catalogues numbers/series numbers of the equipment/cables in accordance with the approved equipment schedule;

- (b) Adequacy of working space, access, and maintenance facilities;
- (c) Continuity test, insulation resistance/loop resistance tests of wiring conductors after being drawn in conduits in each section of work;
- (d) Identification labels of conductors;
- (e) Adequacy of the sizes and quantities of conductors in relation to the system design;
- (f) Correct connections of all equipment in accordance with supplier's instruction;
- (g) Methods of protection against direct contact with live parts (including measurement of distances where appropriate), i.e. protection by insulation of live parts, or protection by barriers or enclosures;
- (h) Labelling of power circuits, protective devices, switches and terminals;
- (i) Selection of equipment and protective measures appropriate to adverse environmental conditions;
- (j) Presence of danger and warning notices;
- (k) Presence of diagrams, instructions and other similar information;
- (l) Method of protection against indirect contact;
- (m) Prevention of mutual detrimental influence of equipment;
- (n) Erection method; and
- (o) Any other appropriate inspection as required by the systems installation.

4.2.2 Functional Performance Test

Before the functional performance test is carried out, the Contractor shall prepare checklist and T&C procedures to meet the requirements of the particular Burglar Alarm and Security Installation. The T&C procedures shall include all elements of the burglar alarm and security system of the particular project. Sample of T&C procedures for some elements of a Burglar Alarm and Security Installation are attached to Annex A as blue print for the Contractor to make their T&C procedures proposal.

(a) Central Control Station

- Check that the interconnecting wiring between computers and

peripherals are securely connected and installed according to working drawings;

- Check that all peripherals are provided and according to approved equipment submission;
- Check the database associated with each input point has been provided in accordance with the designed purposes;
- Check detailed floor plan with positions of security devices, door, partitions, and room names has been provided correctly in the computer database and can be summoned from the computer;
- Activate an alarm to check alarm buzzer, alarm visual indicators, and reset function are in proper working order, i.e. the alarm shall be terminated automatically not more than 15 minutes after the activation of the alarm according to Hong Kong Police Force's requirements.

(b) Communication Network

- Check that the anti-tamper micro-switches protecting the junction boxes in communication networks function properly;
- Check the identification ferrules provided;
- All wiring connection securely fixed and enclosed in conduit.

(c) Uninterrupted Power Supply

- The UPS is tested with simulation of failure of normal power source;
- Inspection of instruments, indicating lamps, fuses and relays on battery charger are checked to be satisfactory and current and voltage levels are within correct range.
- Each battery is marked with date of first charge

(d) Remote Signal Transmission

- Test the continuity of the signal line and proper display in the control centre monitor when it is disconnected..

(e) Card Access Control System

Programme for Card Access Control System

- Check setting of current time and date;
- Check access codes are provided according to the level of holder and

proper access levels are provided;

- Check proper fields are allocated to each cardholder, including time allowed for in/out and area of access;
- Check proper program are allocated to each point of access, including proper parameters such as door release time, door re-locking time;
- Check whether graphics are updated, clear and accurate.

Card Reader for Card Access Control System

- Check the proper operation of the card readers by use of the central control station and at the readers locally ; (LED and audio tone provided with different colour and tone for authorized /unauthorized entry);
- Simulating to case of failure of normal power supply, check the proper operation of the door lock; check the operation of the emergency release button as well; check the working period of the UPS supply in accordance with the requirement;
- Activating the fire alarm, check the proper operation of the door lock according to the fail safe/fail secure requirement;

(f) Security Lock and Switch

- Check the proper operation of the security lock (of the exit) and the alarm activation under no fire alarm is activated;
- Check the proper operation of the tamper switch and duress push button;
- Carry out line fault test and remote off test.

(g) Doorphone System

- Simulating to case of failure of normal power supply, check the proper operation of the electric-magnetic door lock; check the operation of the emergency release button as well; check the working period of the UPS supply in accordance with the requirement;
- Activating the fire alarm, check the proper operation of the door lock according to the fail safe/fail secure requirement;

Check the proper audio/video function of the doorphone handset.

(h) Movement Detector

- Check the covering zone of detector by moving person simulation;
- Simulating to case of failure of normal power supply, check the proper operation of the electric-magnetic door lock; check the operation of the emergency release button as well; check the working period of the UPS supply in accordance with the requirement;
- Activating the fire alarm, check the proper operation of the door lock according to the fail safe/fail secure requirement.

(i) Glass Breakage Detector

- Check the operation of the detector by the specific testing equipment supplied by the equipment supplier.

(j) Security Closed Circuit Television Surveillance System

CCTV Central Control System

- Check that all peripherals are provided and according to approved equipment submission;
- Check the Database associated with each input point has been provided in accordance with the designed purposes;
- Check detailed floor plan with positions of CCTV points, door, partitions, and room names has been provided correctly in the computer database and can be summoned from the computer;
- To check the selectable on-screen display on the following data to each video output, i.e. date, time, camera number, programmable camera title and monitor alarm status.

(k) Watchman Tour System

- Check the proper operation of the data collector by simulation tests of the watchman tour.

4.2.3 Commissioning Inspection

Other than the functional tests carried out for the systems, the Contractor shall also prepare the following for the commissioning inspection for the completion of work:

- (a) All necessary works, such as the blanking off openings by fire barrier/thermal insulation, painting and sign boards are completed by the builder;
- (b) All necessary works by other Contractors such as fire signal interfacing

connection, air-conditioning/mechanical ventilation for security equipment room and normal electrical supply, etc. are completed;

- (c) All weatherproof housing and protective measures to security equipment, warning notices and painting by the Contractor shall be completed.

The checklists in Annex A are intended to indicate some basic requirements to ensure proper functioning of the equipment. They are by no means exhaustive. The Contractor shall exercise his expertise in this field to propose any additional tests and/or commissioning procedures that are necessary for the system to perform its intended functions.

- 4.2.4 The commissioning procedures and test records are classified as “Restricted” and are to be distributed on a “Need to Know” basis.
- 4.2.5 The Contractor shall carry out the tests and inspections as shown in Part 3 and record the test results on Part 4 of Annex A and as agreed between the Project BSE and the Contractor.
- 4.2.5 The Contractor shall provide all the necessary staff, labour, materials and equipment for a thorough test and examination of the installation.

5. Calibrated Equipment

- 5.1 The contractor shall supply calibrated equipment as stipulated in the Specification of the Contract for the inspection, measuring and testing of the installation.

Testing and Commissioning Certificate on Burglar Alarm and Security Installation

Part 1 : Detail of Project

1.1 Project Title (with location) : _____

1.2 * P.W.P. / Project No. : _____

1.3 *Contract/Sub-contract/Quotation No. : _____

1.4 * Contractor/Sub-contractor : _____

1.5 PBSE : _____

1.6 PBSI : _____

Part 2 : Declaration

2.1 I certify that the Burglar Alarm and Security Installation as specified in the Contract/Sub-contract/Quotation at the above location has been inspected, tested and commissioned in accordance with this procedure and/or any other procedures agreed between the PBSE and the Contractor. The results are satisfactory in the aspects as mentioned in Part 3 and/or as recorded in Part 4 of this Certificate, except as indicated in the COMMENTS items.

2.2 I also certify that site tests have been performed in accordance with the requirements set out in Annex A of this procedure and that the results are satisfactory. A record of the tests has been prepared and submitted to the PBSE.

(Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
(Designation of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
(Name and Stamp of Contractor)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

Note : This certificate must be signed by a person authorized by the Firm/Company.

* Delete if not applicable

Items tested/
checked by
Contractor

Items witnessed
by
PBSE/PBSI

Part 3. Items Inspected and Tested

3.1	<u>Central Control Station</u>		
3.1.1	The Central Control Station is installed within the protective area.	*Yes/No	*Yes/No
3.1.2	All peripherals are provided and according to approved equipment submission.	*Yes/No	*Yes/No
3.1.3	Interconnecting wiring between computers and peripherals are securely connected and installed according to working drawings.	*Yes/No	*Yes/No
3.1.4	Computers and peripherals are fixed and not subject to vibration.	*Yes/No	*Yes/No
3.1.5	Computers and peripherals are clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.1.6	Database associated with each input point has been provided.	*Yes/No	*Yes/No
3.1.7	Activate an alarm to check alarm buzzer, alarm visual indicators, and reset function are in proper working order.	*Yes/No	*Yes/No
3.1.8	Detailed site plans with zone indication has been provided in the computer database and can be summoned from the computer.	*Yes/No	*Yes/No
3.1.9	Detailed floor plan with positions of security devices, door, partitions, and room names has been provided in the computer database and can be summoned from the computer.	*Yes/No	*Yes/No
3.1.10	Telephone no. of maintenance teams are provided at visible position of console.	*Yes/No	*Yes/No
3.1.11	Maintenance record card are provided and stored in specified drawer of the console.	*Yes/No	*Yes/No
3.1.12	Operator handbook are provided and stored in specified drawer of the console.	*Yes/No	*Yes/No
3.1.13	As built drawings and O&M manuals are provided in a secured drawer with security device in the Control Console.	*Yes/No	*Yes/No
3.1.14	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.2	<u>Communication Network</u>		
3.2.1	Wirings are enclosed by steel conduit.	*Yes/No	*Yes/No
3.2.2	All junction boxes are protected by anti-tamper microswitches.	*Yes/No	*Yes/No
3.2.3	Identification ferrules provided.	*Yes/No	*Yes/No
3.2.4	All junction boxes and trunking cover are provided with proper identification.	*Yes/No	*Yes/No
3.2.5	Field wiring connection diagram provided.	*Yes/No	*Yes/No
3.2.6	All wiring connection securely fixed.	*Yes/No	*Yes/No
3.2.7	Additional items (if required):	*Yes/No	*Yes/No
3.3	<u>Uninterrupted Power Supply</u>		
3.3.1	The charger is connected to the mains supply through an unswitched fused spur unit.	*Yes/No	*Yes/No
3.3.2	The battery connections have been connected properly.	*Yes/No	*Yes/No
3.3.3	Visual inspection of instruments, indicating lamps, fuses and relays on battery charger are visual checked to be satisfactory and dials are of correct range.	*Yes/No	*Yes/No
3.3.4	Field wiring connection diagram provided.	*Yes/No	*Yes/No
3.3.5	Each battery is marked with date of first charge.	*Yes/No	*Yes/No
3.3.6	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.4	<u>Remote Signal Transmission</u>		
3.4.1	Surge filter is provided on the data line.	*Yes/No	*Yes/No
3.4.2	The transmitter is installed within the protective area.	*Yes/No	*Yes/No
3.4.3	Identification ferrules provided for each wire.	*Yes/No	*Yes/No
3.4.4	Field wiring connection diagram provided.	*Yes/No	*Yes/No
3.4.5	Interconnecting wiring in/out of transmitter are securely connected and installed according to working drawings.	*Yes/No	*Yes/No
3.4.6	The transmitter is backup by UPS.	*Yes/No	*Yes/No
3.4.7	Correct telephone no. to control center provided adjacent to telephone and in the database of Central Control Station.	*Yes/No	*Yes/No
3.4.8	Additional items (if required):	*Yes/No	*Yes/No
3.5	<u>Card Access Control System</u>		
3.5.1	<u>Programme for Card Access Control System</u>		
3.5.1.1	Check access codes are provided according to the level of holder and proper access levels are provided.	*Yes/No	*Yes/No
3.5.1.2	Check setting of current time and date.	*Yes/No	*Yes/No
3.5.1.3	Check proper fields are allocated to each cardholder, including time allowed for in/out and area of access.	*Yes/No	*Yes/No
3.5.1.4	Check proper fields are allocated to each cardholder, including required personnel data.	*Yes/No	*Yes/No
3.5.1.5	Check proper program are allocated to each point of access, including proper parameters such as door release time, door re-locking time.	*Yes/No	*Yes/No
3.5.1.6	Check whether building plans are updated.	*Yes/No	*Yes/No
3.5.1.7	Check whether graphics are clear and accurate.	*Yes/No	*Yes/No
3.5.1.8	Additional items (if required)	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.5.2	<u>Card Reader for Card Access Control System</u>		
3.5.2.1	Card reader, door strike, door contactors, manual locks and door are properly installed and no visual sign of damage.	*Yes/No	*Yes/No
3.5.2.2	Protected items/areas are properly covered by detection devices.	*Yes/No	*Yes/No
3.5.2.3	Device is secured with protected cover, if specified.	*Yes/No	*Yes/No
3.5.2.4	Outdoor devices are protected by weatherproof housing and the sealing gaskets are intact and effective.	*Yes/No	*Yes/No
3.5.2.5	Device is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.5.2.6	Device is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.5.2.7	LED and audio tone provided with different colour and tone for authorized /unauthorized entry.	*Yes/No	*Yes/No
3.5.2.8	Additional items (if required):	*Yes/No	*Yes/No
3.6	<u>Security Lock and Switch</u>		
3.6.1	<u>Duress Push Button</u>		
3.6.1.1	For outdoor device, sealing gaskets are intact and effective.	*Yes/No	*Yes/No
3.6.1.2	Device is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.6.1.3	Device is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.6.1.4	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

Annex A

Items tested/
checked by
Contractor

Items witnessed
by
PBSE/PBSI

3.6.2	<u>Exit Control Lock</u>		
3.6.2.1	Door to be protected by the lock is securely fixed.	*Yes/No	*Yes/No
3.6.2.2	Device is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.6.2.3	Device is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.6.2.4	Additional items (if required):	*Yes/No	*Yes/No

3.6.3	<u>Tamper Switch</u>		
3.6.3.1	Tamper switch is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.6.3.2	Tamper switch is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.6.3.3	No gap or alternative path to allow tampering of the tamper switch.	*Yes/No	*Yes/No
3.6.3.4	Wirings are protected and concealed from tampering and mechanical damage.	*Yes/No	*Yes/No
3.6.3.5	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.6.4	<u>Magnetic Door Contact</u>		
3.6.4.1	Door contact is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.6.4.2	Door contact is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.6.4.3	When door close, the gap between door and door frame is within the specified separation of the door contact.	*Yes/No	*Yes/No
3.6.4.4	Door frame constructed in a way to prevent tampering of door contact from unprotected side of the door.	*Yes/No	*Yes/No
3.6.4.5	Wirings are protected and concealed from tampering and mechanical damage.	*Yes/No	*Yes/No
3.6.4.6	Additional items (if required):	*Yes/No	*Yes/No
3.7	<u>Doorphone System</u>		
3.7.1	Doorphone panel is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.7.2	Doorphone control unit is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.7.3	Handsets are securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.7.4	Electric-magnetic door lock is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.7.5	Combination lock system (if specified) is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.7.6	Door to be controlled by the lock is securely fixed.	*Yes/No	*Yes/No
3.7.7	The equipments of the doorphone system are correctly fixed in all relevant rooms.	*Yes/No	*Yes/No
3.7.8	The equipments of the doorphone system are clean and no signs of damage and tampering	*Yes/No	*Yes/No
3.7.9	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.8	<u>Movement Detector</u>		
3.8.1	Devices have not been obstructed by furniture and other room contents.	*Yes/No	*Yes/No
3.8.2	Protected items/areas are properly covered by detection devices.	*Yes/No	*Yes/No
3.8.3	Device is secured with protected cover, if specified.	*Yes/No	*Yes/No
3.8.4	Outdoor devices are protected by weatherproof housing and the sealing gaskets are intact and effective.	*Yes/No	*Yes/No
3.8.5	Device is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.8.6	Device is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.8.7	Each door/window protected are properly erected and fixed.	*Yes/No	*Yes/No
3.8.8	Additional items (if required):	*Yes/No	*Yes/No
3.9	<u>Glass Breakage Detector</u>		
3.9.1	Protected items/areas are within detection range of the detector.	*Yes/No	*Yes/No
3.9.2	Detector is secured with protected cover, if specified.	*Yes/No	*Yes/No
3.9.3	Outdoor detector is protected by weatherproof housing and the sealing gaskets are intact and effective.	*Yes/No	*Yes/No
3.9.4	Detector is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.9.5	Detector is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.9.6	Each door/window protected are properly erected and fixed.	*Yes/No	*Yes/No
3.9.7	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.10	<u>Security Closed Circuit Television Surveillance System</u>		
3.10.1	<u>CCTV Central Control Station</u>		
3.10.1.1	Matrix switches with control keypad, multiplexers, quad units, video cassette recorders/digital video recorder and security central control station computers are installed at proper mounting rack (Central Control Station) and located within protective area.	*Yes/No	*Yes/No
3.10.1.2	The Central Control Station is installed and in accordance with approved schematic diagrams and approved equipment submission.	*Yes/No	*Yes/No
3.10.1.3	The Central Control Station should be accessible for maintenance.	*Yes/No	*Yes/No
3.10.1.4	The Central Control Station is fixed and not subject to vibration.	*Yes/No	*Yes/No
3.10.1.5	The Central Control Station is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.10.1.6	The emergency power supply for Central Control Station is property installed and power supply is available.	*Yes/No	*Yes/No
3.10.1.7	As-built drawings and O&M manuals are provided in a secured drawer with security device in the Central Control Station.	*Yes/No	*Yes/No
3.10.1.8	Maintenance record are provided and stored in specified drawer of the console.	*Yes/No	*Yes/No
3.10.1.9	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

Annex A

Items tested/
checked by
Contractor

Items witnessed
by
PBSE/PBSI

3.10.2	<u>Matrix Switcher</u>		
3.10.2.1	The Matrix Switcher is installed and in accordance with approved schematic diagrams and approved equipment submission.	*Yes/No	*Yes/No
3.10.2.2	The Matrix Switcher is connected with emergency power supply and the power supply is available.	*Yes/No	*Yes/No
3.10.2.3	The Matrix Switcher is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.10.2.4	The Matrix Switcher should link up with the central control station to perform automatic camera positioning, display, recording upon certain alarm conditions of the burglar alarm and security system.	*Yes/No	*Yes/No
3.10.2.5	The Matrix Switcher is user programmable to display image of any camera on any monitor with the system	*Yes/No	*Yes/No
3.10.2.6	The Matrix Switch allows the operator to record the image from any camera to the event VCR in either real time or time lapse mode by key in command to the keyboard.	*Yes/No	*Yes/No
3.10.2.7	The Matrix Switch can provide selectable on-screen display on the following data to each video output, i.e. date, time, camera number, programmable camera title and monitor alarm status.	*Yes/No	*Yes/No
3.10.2.8	Additional items (if required):	*Yes/No	*Yes/No

Items tested/
checked by

Items witnessed
by

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

3.10.7	<u>Video Cassette Recorder</u>		
3.10.7.1	The Video Cassette Recorder is installed and in accordance with approved schematic diagrams and approved equipment submission.	*Yes/No	*Yes/No
3.10.7.2	The Video Cassette Recorder is fixed and not subject to vibration.	*Yes/No	*Yes/No
3.10.7.3	The Video Cassette Recorder is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.10.7.4	The Video Cassette Recorder is connected with emergency power supply and the power supply is available.	*Yes/No	*Yes/No
3.10.7.5	The Video Cassette Recorder is time lapse type and can be selected to record in real time mode.	*Yes/No	*Yes/No
3.10.7.6	Additional items (if required):	*Yes/No	*Yes/No
3.10.7	<u>Digital Video Recorder</u>		
3.10.7.1	The Digital Video Recorder is installed and in accordance with approved schematic diagrams and approved equipment submission.	*Yes/No	*Yes/No
3.10.7.2	The Digital Video Recorder is fixed and not subject to vibration.	*Yes/No	*Yes/No
3.10.7.3	The Digital Video Recorder is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.10.7.4	The Digital Video Recorder is connected with emergency power supply and the power supply is available.	*Yes/No	*Yes/No
3.10.7.5	The system is allowed to select from a variety of recording mode configurations.	*Yes/No	*Yes/No
3.10.7.6	The system is allowed to select from a variety of recording speeds.	*Yes/No	*Yes/No
3.10.7.7	Additional items (if required):	*Yes/No	*Yes/No
		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.10.9	<u>Cabling and Distribution</u>		

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

3.10.9.1	Coaxial cable are of approved type in accordance with Specification	*Yes/No	*Yes/No
3.10.9.2	The coaxial cables and power cables are protected by steel or flexible conduit.	*Yes/No	*Yes/No
3.10.9.3	All wiring connection are securely fixed.	*Yes/No	*Yes/No
3.10.9.4	Identification ferrules are provided.	*Yes/No	*Yes/No
3.10.9.5	All junction boxes and trunking cover are provided with proper identification.	*Yes/No	*Yes/No
3.10.9.6	The main cable is properly connected to an un-switched fused spur unit powered by emergency supply.	*Yes/No	*Yes/No
3.10.9.7	Additional items (if required):	*Yes/No	*Yes/No
3.11	<u>Watchman Tour System</u>		
3.11.1	Check access codes are provided according to the level of holder and proper access levels are provided.	*Yes/No	*Yes/No
3.11.2	Check setting of current time and date.	*Yes/No	*Yes/No
3.11.3	Check proper designation is allocated to each data collector.	*Yes/No	*Yes/No
3.11.4	All Data Collectors are clean and no visual damage.	*Yes/No	*Yes/No
3.11.5	Additional items (if required):	*Yes/No	*Yes/No

Part 4 : Test Record attached to the Test Certificate

4.1 Burglar Alarm and Security

4.1.1 Central Control Station

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

Location of Central Control Station:	
Brand and Model:	
Serial No. of Central Computer:	

4.1.1.1 Power supply

a)	Rating of central computer including all peripherals:	_____ A _____ V
b)	Type of power supply:	Spur unit/socket/
c)	Current rating of power supply:	_____ A
d)	Measured output voltage of power supply:	_____ V
e)	Measured current of central computer including all peripherals:	_____ A

4.1.1.2 Functional test

		Items tested/checked by Contractor	Items witnessed by PBSE/PBSI	Remark
a)	Detection of LCP (Intelligent local control panel) - check if the computer could detect all LCPs	*Yes/No	*Yes/No	
b)	Detection of LCPs' field alarm - activate alarm at each LCP, test if the computer could receive field alarms from each LCP	*Yes/No	*Yes/No	
c)	Activate multiple alarms, check if the Central Control Station reacts according to prescribed sequence.	*Yes/No	*Yes/No	
d)	Check if the monitor screen can refresh without lagging behind the alarm action during multiple alarm condition.	*Yes/No	*Yes/No	
e)	Check if summary screen with required data are provided and can be activated by a designated key.	*Yes/No	*Yes/No	
f)	Call and print report on status of any alarm input and output point, and whether the point is in programmed time arm/unarm, check if the report match with the past events.	*Yes/No	*Yes/No	

		Items tested/checked by Contractor	Items witnessed by PBSE/PBSI	Remark
g)	Call and print report on a listing of points in arm.	*Yes/No	*Yes/No	
h)	Call and print report on a listing of points in unarmed.	*Yes/No	*Yes/No	

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

i)	Call and print report on a history listing of alarm for a particular input point.	*Yes/No	*Yes/No	
j)	Call and print report on a history listing of alarm for a particular output point.	*Yes/No	*Yes/No	
k)	Call and print report on a listing of points in programmed time arm/unarm.	*Yes/No	*Yes/No	
l)	Call and print report on a listing of points in trouble state.	*Yes/No	*Yes/No	
m)	Call and print report on a listing of points in alarm.	*Yes/No	*Yes/No	
n)	Call and print report on a listing of points in manual bypass.	*Yes/No	*Yes/No	
o)	Call and print report on a history listing of alarm for past period to be specified by the operator.	*Yes/No	*Yes/No	
p)	Call up data in the streamer and check if data match with the past event.	*Yes/No	*Yes/No	
q)	Computer change over test (for system with standby computer) - turn off the master CPU which is in use, check if the standby CPU changeover automatically? Generate an alarm, check if the standby CPU receive it or not?	*Yes/No	*Yes/No	
r)	Additional items (if required):	*Yes/No	*Yes/No	

4.1.2 Communication Network

Location of Wiring:	
Type of Wiring:	
Brand/Model of Wiring:	

4.1.2.1 Functional test

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Measured value	Remark (indicated whether acceptable)
a)	Insulation resistance between wiring and earth with all input/output device disconnected.		
b)	Insulation resistance between wiring with all input/output device connected.		
c)	Detection devices loop resistance of each circuit measured circuit 1 (from _____ to _____) circuit 2 (from _____ to _____) circuit 3 (from _____ to _____) . . .		
d)	Additional items (if required):		

4.1.3 Uninterrupted Power Supply

(For system with standby UPS, one record sheet for each UPS)

Location of UPS:	
Brand/Model of UPS:	
Serial No. of UPS:	

4.1.3.1 Functional test

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Measured value	Remark (indicated whether acceptable)
a)	For initial setup, charge the batteries at the highest rate until the charging current has remained constant. Record the charging current.		
b)	Measure charger output with batteries (but not load) disconnected; this should be between 110% to 115% of the normal battery voltage. Record down the measured voltage.		
c)	Measure charger current with battery (but not load) disconnected, this should be less than the maximum recommended continuous charge current for the batteries. Record down the charger current.		
d)	Interrupt mains input to the charger and check that proper operation of detection equipment continues on standby batteries. Record down status of detection equipment.		
e)	Unplug the main supply check charge fail/mains fail indication function correctly. Record down status.		
f)	Restore the main supply check charge fail/mains fail indication are off and that "Mains On" indication is restored.		
g)	For system with standby UPS, simulate UPS failure by disconnecting the output, check if the standby UPS automatically changeover. Record status.		
h)	Measure battery output voltage and output current with Main 'on'.		
i)	Measure battery output voltage and output current with Main 'off' in non-alarm condition.		
j)	Measure battery output voltage and output current with Main 'off' and alarm is activated.		
k)	Additional items (if required):		

4.1.4 Remote Signal Transmission

Location of Transmitter:	
Type of Transmitter:	
Brand/Model of Transmitter:	
Serial No. of Transmitter:	

4.1.4.1 Power supply

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

a)	Rating of transmitter including all peripherals:	_____ A _____ V
b)	Type of power supply:	Spur unit/socket/
c)	Current rating of power supply:	_____ A
d)	Measured output voltage of power supply:	_____ V
e)	Measured input current of transmitter:	_____ A

4.1.4.2 Functional test

		Status	Remark (indicated whether acceptable)
a)	Phone to control centre and requested to test continuity of telephone wire.		
b)	Activate an alarm and request control centre to confirm receipt of alarm.		
c)	Activate multiple alarms and request control centre to confirm receipt of alarms in correct sequence.		
d)	To check open line fault by disconnecting telephone plug and verify "Line Open Fault Alarm" being displayed in Central Control Station.		
e)	Restore telephone plug and repeat test (b).		
f)	Additional items (if required):		

4.1.5 Card Access Control System

4.1.5.1 Programme for Card Access Control System

Provider of Card Access Program:	
----------------------------------	--

4.1.5.1.1 Functional test (performed with Main 'on' and then repeated with Main 'off')

	Items tested/checked	Items witnessed by
Tested / Checked by : (Name of Contractor's Representative)	Signature -	Post :
	()	Tel. No. :
		Date :
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature -	Post :
	()	Tel. No. :
		Date :

		by Contractor	PBSE/PBSI
a)	No. of access card allowed for the system are more than the minimum specified in the specification () cards.	*Yes/No	*Yes/No
b)	Check password protection by randomly key in passwords. Restore system and key in proper password, check if system function.	*Yes/No	*Yes/No
c)	Call and print a listing of cardholders with an attendance code of 'out'.	*Yes/No	*Yes/No
d)	Call and print a listing of cardholders with an attendance code of 'in'.	*Yes/No	*Yes/No
e)	Call and print a listing of access level and time zone assigned to a specified cardholder.	*Yes/No	*Yes/No
f)	Call and print a listing of cardholders and time zone assigned to a specified access level.	*Yes/No	*Yes/No
g)	Additional items (if required):	*Yes/No	*Yes/No

4.1.5.2 Card Reader for Card Access Control System

(One record sheet for each reader)

Designation of Card Reader:	
Brand and Model:	
Serial No. of Card Reader:	
Principal Technology:	Magnetic card/proximity card with key code/(_____)

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

4.1.5.2.1 Power supply

a)	Rating of detector:	_____ A _____ V
b)	Type of power supply:	Spur unit/socket/
c)	Current rating of power supply:	_____ A
d)	Measured output voltage of power supply:	_____ V
e)	Measured current of detector:	_____ A

4.1.5.2.2 Functional test

		Items tested/checked by Contractor		Items witnessed by PBSE/PBSI
			event logged on Central Control Station	
a)	Present a valid card, door open, close and shut according to schedule.	*Yes/No	*Yes/No	*Yes/No
b)	Present a valid card, keep door open and alarm activate after the preset time.	*Yes/No	*Yes/No	*Yes/No
c)	Present a valid card but with incorrect time zone, door should not open. Continue to present the card, alarm shall activate.	*Yes/No	*Yes/No	*Yes/No
d)	Present a valid card but with 'in' record in other secured area, the door should not open.	*Yes/No	*Yes/No	*Yes/No
e)	Present a valid card but with incorrect point of access, the door should not open.	*Yes/No	*Yes/No	*Yes/No
f)	Present a valid card but with incorrect pass code, the door should not open.	*Yes/No	*Yes/No	*Yes/No
g)	Remote 'off' each card reader from Central Control Station and then check if the door can be opened by manual key and no alarm arisen.	*Yes/No	*Yes/No	*Yes/No

		Items tested/checked by Contractor		Items witnessed by PBSE/PBSI
			event logged on Central Control Station	
h)	Remote 'on' the card reader from Central Control Station and then check if card reader function properly by perform test a, b, c, d, and e again.	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

i)	Activate anti-tampering alarm by loose the cover housing, alarm shall activate.	*Yes/No	*Yes/No	*Yes/No
j)	Additional items (if required):	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

4.1.6 Security Lock and Switch4.1.6.1 Duress Push Button*(One record sheet for each individual device)*

Location of Device:	
Designation of Device:	
Brand and Model:	
Serial No. of Device:	
Principal Technology:	Breakglass/latching push button/

4.1.6.1.1 Functional test

		Items tested/checked by Contractor			Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on' and event logged	Alarm 'off' after reset	
a)	Simulation Test Activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
b)	Tamper Alarm Function Test Disassembly the fixing cover or loosen the screws.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
c)	Line Fault Test Open and short the lines of the system.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
d)	Remote Off Function Test Remote off the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	N/A	*Yes/No
e)	Remote On Function Test Remote turn on the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

4.1.6.2 Exit Control Lock*(One record sheet for each individual lock)*

Location of Lock:	
Designation of Lock:	
Brand and Model:	
Serial No. of Lock:	

4.1.6.2.1 Power supply

a)	Rating of lock:	_____ A _____ V
b)	Type of power supply:	Spur unit/socket/
c)	Current rating of power supply:	_____ A
d)	Measured output voltage of power supply:	_____ V
e)	Measured current of lock:	_____ A

4.1.6.2.2 Functional test

		Items tested/checked by Contractor			Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on' and correct report in event log	Alarm 'off' after reset	
a)	Simulation Test Push open the lock.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
b)	Line Fault Test Open and short the lines of the system.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
c)	Remote Off Function Test Remote off the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	N/A	*Yes/No
d)	Remote On Function Test Remote turn on the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

4.1.6.3 Tamper Switch*(One record sheet for each individual device)*

Location of Tamper Switch:	
Designation of Tamper Switch:	
Brand and Model:	
Serial No. of Tamper Switch:	

4.1.6.3.1 Functional test

		Items tested/checked by Contractor			Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on'	Alarm 'off' after reset	
a)	Activate the tamper switch (depending on the article to be protected, normally by open the casing of the article to be protected).	*Yes/No	*Yes/No	*Yes/No	*Yes/No
b)	Deactivate the tamper switch (by closing the casing, or press close the microswitch manually).	*Yes/No	*Yes/No	*Yes/No	*Yes/No
c)	Line Fault Test Open and short the lines of the system.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
d)	Remote Off Function Test Remote off the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
e)	Remote On Function Test Remote turn on the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

4.1.6.4 Magnetic Door Contact

(One record sheet for each individual device)

Location of Door Contact:	
Designation of Door Contact:	
Brand and Model:	
Serial No. of Door Contact:	

4.1.6.4.1 Functional test

		Items tested/checked by Contractor			Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on'	Alarm 'off' after reset	
a)	Open door/shutter/window.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
b)	Close door/shutter/window.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
c)	Line Fault Test Open and short the lines of the system.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
d)	Remote Off Function Test Remote off the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
e)	Remote On Function Test Remote turn on the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

4.1.7 Doorphone System

Location of Doorphone Control Unit:				
Brand and Model:				
Serial No. of Doorphone Control Unit:				
Location of Doorphone Panel(s):				
Brand and Model:				
Serial No. of Doorphone Panel(s):				
Location of Handsets:				
Brand and Model:				
Serial No. of Handsets:				

4.1.7.1 Power supply

a)	Rating of doorphone control unit:	_____ A _____ V
b)	Type of power supply:	Spur unit/socket/
c)	Current rating of power supply:	_____ A
d)	Measured output voltage of power supply:	_____ V
e)	Measured current of doorphone control unit:	_____ A

4.1.7.2 Functional test

		Items tested/checked by Contractor	Items witnessed by PBSE/PBSI
a)	Entry program mode test	*Yes/No	*Yes/No
b)	Input program mode password test	*Yes/No	*Yes/No
c)	Change program mode password test	*Yes/No	*Yes/No
d)	Change open door password test	*Yes/No	*Yes/No
e)	Change open door timer test	*Yes/No	*Yes/No
f)	Change communication timer test	*Yes/No	*Yes/No
g)	Key in floor & flat no. test	*Yes/No	*Yes/No
h)	Input open door password test	*Yes/No	*Yes/No
i)	Cancel test	*Yes/No	*Yes/No
j)	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

4.1.8 Movement Detector*(One record sheet for each individual detector)*

Location of Detector:	
Designation of Detector:	
Brand and Model:	
Serial No. of Detector:	
Principal Detection Technology:	Microwave/infrared/(_____)

4.1.8.1 Preparation period

		Items tested/checked by Contractor	Items witnessed by PBSE/PBSI
a)	For infrared device, an acclimatization period of up to 24 hours has been allowed.	*Yes/No	*Yes/No

4.1.8.2 Power supply

a)	Rating of detector:	_____ A _____ V
b)	Type of power supply:	Spur unit/socket/
c)	Current rating of power supply:	_____ A
d)	Measured output voltage of power supply:	_____ V
e)	Measured current of detector:	_____ A

4.1.9.3 Functional test

		Items tested/checked by Contractor			Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on'	Alarm 'off' after reset	
a)	Movement Simulation Test A person move around the middle of detection range (____m).	*Yes/No	*Yes/No	*Yes/No	*Yes/No
b)	Covering Range Test 1 A person moves around middle of detection range, (____m) directly face the detector.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
c)	Covering Range Test 2 A person moves around furthest end of detection range, (____m) directly face the detector.	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Items tested/checked by Contractor			
Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Local alarm 'on'	Central control console alarm 'on'	Alarm 'off' after reset	Items witnessed by PBSE/PBSI
d)	Covering Range Test 3 A person moves around nearest end of detection range, (____m) directly face the detector.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
e)	Covering Range Test 4 A person moves around furthest end of detection range, (____m) at the detection edge (___°) right from the detector.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
f)	Covering Range Test 5 A person moves around furthest end of detection range, (____m) at the detection edge (___°) right from the detector.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
g)	Covering Range Test 6 A person crawls across the detection range.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
h)	False Trigger Test Use an instrument, infra-red illuminator to generate an infra-red beam and point to the middle range from the detector (approx. 10m).	*Yes/No	*Yes/No	*Yes/No	*Yes/No
i)	Tamper Alarm Function Test Disassembly the fixing cover or loosen the screws.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
j)	Line Fault Test Open and short the lines of the system.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
k)	Walk Test	*Yes/No	*Yes/No	*Yes/No	*Yes/No
l)	Remote Off Function Test Remote off the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	N/A	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Items tested/checked by Contractor			Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on'	Alarm 'off' after reset	
m)	Remote On Function Test Remote turn on the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
n)	Additional items (if required):	*Yes/No	*Yes/No	*Yes/No	*Yes/No

4.1.9 Glass Breakage Detector

(One record sheet for each individual detector)

Location of Detector:	
Designation of Detector:	
Brand and Model:	
Serial No. of Detector:	
Principal Detection Technology:	

4.1.9.1 Power supply

a)	Rating of detector:	_____ A _____ V
b)	Type of power supply:	Spur unit/socket/
c)	Current rating of power supply:	_____ A
d)	Measured output voltage of power supply:	_____ V
e)	Measured current of detector:	_____ A

4.1.9.2 Functional test

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Items tested/checked by Contractor			Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on'	Alarm 'off' after reset	
a)	Glassbreak Simulation Test Activate Glassbreak Simulator around the middle of detection range (____m).	*Yes/No	*Yes/No	*Yes/No	*Yes/No
b)	Covering Range Test 1 Activate Glassbreak Simulator around middle of detection range, (____m) directly face the detector.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
c)	Covering Range Test 2 Activate Glassbreak Simulator around furthest end of detection range, (____m) directly face the detector.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
d)	Covering Range Test 3 Activate Glassbreak Simulator around nearest end of detection range, (____m) directly face the detector.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
e)	Covering Range Test 4 Activate Glassbreak Simulator around furthest end of detection range, (____m) at the detection edge (____°) right from the detector.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
f)	Covering Range Test 5 Activate Glassbreak Simulator around furthest end of detection range, (____m) at the detection edge (____°) right from the detector.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
g)	Covering Range Test 6 Activate Glassbreak Simulator adjacent to the glass that the detector to protect.	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

		Items tested/checked by Contractor			Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on'	Alarm 'off' after reset	
h)	False Trigger Test Use an instrument, Pin Noise Generator, to generate a background noise of 90 dB around middle of detection range of detector.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
i)	Tamper Alarm Function Test Disassembly the fixing cover or loosen the screws.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
j)	Line Fault Test Open and short the lines of the system.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
k)	Remote Off Function Test Remote off the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
l)	Remote On Function Test Remote turn on the device at the Central Control Station, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

4.1.10 Security Closed Circuit Television Surveillance System*(One record sheet for each individual device)*

Location of Central Control Station:	
Designation of camera:	
Brand and Model:	
No. of Camera:	

4.1.10.1 Power supply

a)	Rating of camera:	_____ A _____ V
b)	Type of power supply:	Spur unit/socket/
c)	Current rating of power supply:	_____ A
d)	Measured output voltage of power supply:	_____ V
e)	Measured current of camera:	_____ A

4.1.10.2 Functional test

4.1.10.2.1 Camera PTZ control check list

Camera No.	Items tested/checked by Contractor						Items witnessed by PBSE/PBSI
	Pan		Tilt		Zoom		
	Left	Right	Up	Down	In	Out	
1							*Yes/No
2							*Yes/No
3							*Yes/No
4							*Yes/No
5							*Yes/No
6							*Yes/No
7							*Yes/No
8							*Yes/No
9							*Yes/No
10							*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

4.1.10.2.2 Camera check list

Camera No.	Items tested/checked by Contractor									Items witnessed by PBSE/PBSI
	Sensitivity	Resolution	Lens	S/N ratio	Auto Iris	Noise Interference Distortion	Brightness Contrast	Colour Balance	Vision Check and Workmanship	
1										*Yes/No
2										*Yes/No
3										*Yes/No
4										*Yes/No
5										*Yes/No
6										*Yes/No
7										*Yes/No
8										*Yes/No
9										*Yes/No
10										*Yes/No

4.1.10.3 Monitor check list

Item	Monitor No.	Items tested/checked by Contractor						Items witnessed by PBSE/PBSI
		Dimension	Resolution	Brightness Adjustment	Contrast Adjustment	Color Adjustment	Audio Volume Adjustment	
1								*Yes/No
2								*Yes/No
3								*Yes/No
4								*Yes/No
5								*Yes/No
6								*Yes/No
7								*Yes/No
8								*Yes/No
9								*Yes/No
10								*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature -	Post :	
	()	Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature -	Post :	
	()	Tel. No. :	
		Date :	

4.1.11 Watchman Tour System

Location of Data Transfer Unit and Computer:	
Designation of Tamper Switch:	
Brand and Model:	
No. of Data Collector:	

4.1.11.1 Functional test

		Items tested/checked by Contractor	Items witnessed by PBSE/PBSI
a)	No. of data collectors allowed for the system are more than the minimum specified in the specification () no.	*Yes/No	*Yes/No
b)	Check password protection by randomly key in passwords. Restore system and key in proper password, check if system function.	*Yes/No	*Yes/No
c)	Simulation Test 1 Arrange a tour with designed route and collect data with a Data Collector. Check if correct 'next station' indicated in the readout of the Data Collector. Then transfer the collected data to the Data Transfer Unit and Computer. Print and check against the designed routing and time of recording.	*Yes/No	*Yes/No
d)	Simulation Test 2 Arrange a tour with deviated from a designed route and collect data with a Data Collector. Then transfer the collected data to the Data Transfer Unit and Computer. Print and check against the designed route and time of recording. Check if warning of deviation shown in the printout.	*Yes/No	*Yes/No
e)	Simulation Test 3 Arrange several tours and collect data with different Data Collectors. Then transfer the collected data to the Data Transfer Unit and Computer. Print and check against the designed route, time of recording, and correct staff identification.	*Yes/No	*Yes/No

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

Testing and Commissioning Progress Chart for Burglar Alarm and Security Installation (Rev.) ⁽¹⁾		Dates ⁽²⁾																Remark	
Activities	Reference to Annex A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A
3.	Installation of cable	3.2																	
	G/F																		
	1/F																		
	2/F																		
	3/F																		
	4/F																		
	Submission of Record of Test																		
4.	Cable continuity test	4.1.2																	
	G/F																		
	1/F																		
	2/F																		
	3/F																		
	4/F																		
	Submission of Record of Test																		
5.	Signal level test																		
	Central control Station																		
	G/F																		
	1/F																		
	2/F																		
	3/F																		
	4/F																		
	Submission of Record of Test																		

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	

	(Rev.) ⁽¹⁾	Dates ⁽²⁾																Remark	
	Activities	Reference to Annex A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S		A
8.	Submission of T&C Certificate																		

Notes

* Delete as appropriate

(1) Insert revision no.

(2) Insert additional columns as necessary

S - schedule % completion

A - actual % completion

Tested / Checked by : (Name of Contractor's Representative)	Signature - ()	Post :	
		Tel. No. :	
		Date :	
Witnessed by : (Name(s) of *PBSE/PBSI)	Signature - ()	Post :	
		Tel. No. :	
		Date :	