

BUILDING SERVICES BRANCH
TESTING AND COMMISSIONING
PROCEDURE NO. 5
FOR
BURGLAR ALARM AND SECURITY
INSTALLATION
IN
GOVERNMENT BUILDINGS
HONG KONG

HONG KONG SPECIAL ADMINISTRATIVE REGION GOVERNMENT

Building Services Branch
Architectural Services Department
(2000 Edition)

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B.S.B. Testing and Commissioning Procedure No. 5 Burglar Alarm and Security Installation

1. Introduction

- 1.1 This procedure is intended to lay down the minimum testing and commissioning requirements to be carried out by the Contractor on a new Burglar Alarm and Security Installation upon completion or on an existing Burglar Alarm and Security Installation after a major alteration. Additional testing and commissioning (T & C) requirements may be proposed by the Contractor as appropriate and agreed by the Project Building Services Engineer (PBSE), e.g. for special equipment supplied and/or installed by the Contractor.
- 1.2 This procedure is also written to facilitate the PBSE and Project Building Services Inspector (PBSI) in carrying out the following aspects of work with respect to T & C.
 - (i) To vet and approve the T & C procedures proposed and submitted by the Contractor.
 - (ii) To witness those T & C procedures as specified.
 - (iii) To receive the T & C certificate and other supporting data.

2. General Requirements

- 2.1 The Contractor shall submit the T&C procedures together with the Testing and Commissioning progress chart in Appendix B to the PBSE for approval. The submission shall be made at least one month before the commencement of T&C.
- 2.2 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.
- 2.3 Upon completion of such T & C procedure, the Contractor shall complete and sign a testing and commissioning certificate as Appendix A, to the effect that agreed T & C procedures have been duly carried out.
- 2.4 Before carrying out any test, the Contractor shall ensure that the installations comply with the statutory requirements and regulations.

2.5 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 security system of the particular project. Sample of T&C procedures for some elements of a Burglar Alarm and Security Installation are attached to Appendix A as blue print for the Contractor to make their T&C procedures proposal. Some basic elements of a Burglar Alarm and Security Installation are list below.

2.5.1 Central Control Unit

2.5.2 Interconnecting Wire

2.5.3 Uninterrupted Power System

2.5.4 Remote Alarm Transmission to a Private Security Control Center

2.5.5 Deterrent System:-

- i) Card Access Control System
- ii) Exit Control Lock
- iii) Duress Push Button
- iv) Tamper Switch
- v) (Other system/device included in the scope of works in the Particular Specification)

2.5.6 Detection System

- i) Motion Detector
- ii) Magnetic Door Contact
- iii) Glass Break Detector
- iv) (Other system/device included in the scope of works in the Particular Specification)

2.5.7 Surveillance System

- i) Closed Circuit Television
- ii) Digital Video Motion Detector
- iii) Watchman Tour System
- iv) (Other system/device included in the scope of works in the Particular Specification)

The above checklists 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.

- 2.6 The commissioning procedures and test records are classified as “Restricted” and are to be distributed on a “Need to Know” basis.

3. Testing and Inspection

- 3.1 The Contractor shall carry out the tests and inspections as shown in Part 3 and record the test results on Part 4 of Appendix A and as agreed between the Project BSE and the Contractor.
- 3.2 The Contractor shall provide all the necessary staff, labour, materials and equipment for a thorough test and examination of the installation.

4. Statutory Inspection/Commissioning

- 4.1 After the proper testing and commissioning of the Burglar Alarm and Security Installation, the Contractor shall notify the appropriate Authority, through the PBSE, on the completion of the installation and its readiness for inspection and testing.

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. The equipment shall be calibrated by laboratories accredited by the Hong Kong Laboratory Accreditation Scheme (HKLAS) or other recognised accredited laboratories.

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 Appendix A of this procedure and that the results are satisfactory. A record of the tests has been prepared and submitted to the PBSE.

Signature of Contractor's Representative _____

Full Name of Contractor's Representative _____

Designation of Contractor's Representative _____

Name and Stamp of Contractor _____

Date _____

Notes : 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 Unit</u>		
3.1.1	The Central Control Unit 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

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Appendix A

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.2	<u>Interconnecting Wire</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
3.3	<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
3.4	<u>Remote Alarm Transmission to a Private Security Control Centre</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 CCU.	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Appendix A

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.5	<u>Programme for Card Access Control System</u>		
3.5.1	Check access codes are provided according to the level of holder and proper access levels are provided.	*Yes/No	*Yes/No
3.5.2	Check setting of current time and date.	*Yes/No	*Yes/No
3.5.3	Check proper fields are allocated to each cardholder, including time allowed for in/out and area of access.	*Yes/No	*Yes/No
3.5.4	Check proper fields are allocated to each cardholder, including required personnel data.	*Yes/No	*Yes/No
3.5.5	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
3.5.6	Check whether building plans are updated.	*Yes/No	*Yes/No
3.5.7	Check whether graphics are clear and accurate.	*Yes/No	*Yes/No
3.5.8	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Appendix A

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.6	<u>Card Reader for Card Access Control System</u>		
3.6.1	Card reader, door strike, door contactors, manual locks and door are properly installed and no visual sign of damage.	*Yes/No	*Yes/No
3.6.2	Protected items/areas are properly covered by detection devices.	*Yes/No	*Yes/No
3.6.3	Device is secured with protected cover, if specified.	*Yes/No	*Yes/No
3.6.4	Outdoor devices are protected by weatherproof housing and the sealing gaskets are intact and effective.	*Yes/No	*Yes/No
3.6.5	Device is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.6.6	Device is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.6.7	LED and audio tone provided with different colour and tone for authorized /unauthorized entry.	*Yes/No	*Yes/No
3.6.8	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Appendix A

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.7	<u>Exit Control Lock</u>		
3.7.1	Door to be protected by the lock is securely fixed.	*Yes/No	*Yes/No
3.7.2	Device is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.7.3	Device is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.7.4	Additional items (if required):	*Yes/No	*Yes/No
3.8	<u>Duress Button</u>		
3.8.1	For outdoor device, sealing gaskets are intact and effective.	*Yes/No	*Yes/No
3.8.2	Device is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.8.3	Device is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.8.4	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Appendix A

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

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Appendix A

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.10	<u>Glassbreak Detector</u>		
3.10.1	Protected items/areas are within detection range of the detector.	*Yes/No	*Yes/No
3.10.2	Detector is secured with protected cover, if specified.	*Yes/No	*Yes/No
3.10.3	Outdoor detector is protected by weatherproof housing and the sealing gaskets are intact and effective.	*Yes/No	*Yes/No
3.10.4	Detector is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.10.5	Detector is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.10.6	Each door/window protected are properly erected and fixed.	*Yes/No	*Yes/No
3.10.7	Additional items (if required):	*Yes/No	*Yes/No
3.11	<u>Magnetic Door Contact</u>		
3.11.1	Door contact is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.11.2	Door contact is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.11.3	When door close, the gap between door and door frame is within the specified separation of the door contact.	*Yes/No	*Yes/No
3.11.4	Door frame constructed in a way to prevent tampering of door contact from unprotected side of the door.	*Yes/No	*Yes/No
3.11.5	Wirings are protected and concealed from tampering and mechanical damage.	*Yes/No	*Yes/No
3.11.6	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Appendix A

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.12	<u>Tamper Switch</u>		
3.12.1	Tamper switch is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.12.2	Tamper switch is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.12.3	No gap or alternative path to allow tampering of the tamper switch.	*Yes/No	*Yes/No
3.12.4	Wirings are protected and concealed from tampering and mechanical damage.	*Yes/No	*Yes/No
3.12.5	Additional items (if required):	*Yes/No	*Yes/No
3.13	<u>Electric Door Strike</u>		
3.13.1	Door to be protected by the lock is securely fixed.	*Yes/No	*Yes/No
3.13.2	Device is securely fixed and not subject to vibration.	*Yes/No	*Yes/No
3.13.3	Device is clean and no sign of damage and tampering.	*Yes/No	*Yes/No
3.13.4	Strike fit to the strike slot.	*Yes/No	*Yes/No
3.13.5	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Appendix A

		Items tested/ checked by <u>Contractor</u>	Items witnessed by <u>PBSE/PBSI</u>
3.14	<u>Watchman Tour System</u>		
3.14.1	Check access codes are provided according to the level of holder and proper access levels are provided.	*Yes/No	*Yes/No
3.14.2	Check setting of current time and date.	*Yes/No	*Yes/No
3.14.3	Check proper designation is allocated to each data collector.	*Yes/No	*Yes/No
3.14.4	All Data Collectors are clean and no visual damage.	*Yes/No	*Yes/No
3.14.5	Additional items (if required):	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Appendix A

Items tested/ Items witnessed
checked by by
Contractor PBSE/PBSI

3.15 Comments

*Yes/No/N.A. *Yes/No/N.A.

Note: * Delete if not applicable

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Part 4 : Test Record attached to the Test Certificate**4.1 Burglar Alarm and Security****4.1.1 Central Control Unit***(For system with standby computer, one record sheet for each computer)**(For system with standby 'LAN', one record sheet for each LAN)**(For system with standby computer and standby LAN, one record sheet for each combination)*

Location of Central Control Unit:	
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 LCP1 LCP2 LCP3 . . .	*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 LCP1 LCP2 LCP3 . . .	*Yes/No	*Yes/No	

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Appendix A

		Items tested/checked by Contractor	Items witnessed by PBSE/PBSI	Remark
c)	'LAN' line changeover test (for system with standby 'LAN') - plug out the connection of 1 no. 'LAN' with the computer, check that if it automatic change over to use another 'LAN' then generate an alarm and check if the computer receive it or not.	*Yes/No	*Yes/No	
d)	Activate multiple alarms, check if the CCU react according to prescribed sequence.	*Yes/No	*Yes/No	
e)	Check if the monitor screen can refresh without lagging behind the alarm action during multiple alarm condition.	*Yes/No	*Yes/No	
f)	Check if summary screen with required data are provided and can be activated by a designated key.	*Yes/No	*Yes/No	
g)	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	
h)	Call and print report on a listing of points in arm.	*Yes/No	*Yes/No	
i)	Call and print report on a listing of points in unarmed.	*Yes/No	*Yes/No	
j)	Call and print report on a history listing of alarm for a particular input point.	*Yes/No	*Yes/No	
k)	Call and print report on a history listing of alarm for a particular output point.	*Yes/No	*Yes/No	
l)	Call and print report on a listing of points in programmed time arm/unarm.	*Yes/No	*Yes/No	
m)	Call and print report on a listing of points in trouble state.	*Yes/No	*Yes/No	
n)	Call and print report on a listing of points in alarm.	*Yes/No	*Yes/No	
o)	Call and print report on a listing of points in manual bypass.	*Yes/No	*Yes/No	
p)	Call and print report on a history listing of alarm for past period to be specified by the operator.	*Yes/No	*Yes/No	

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PBSE/*PBSI)

Appendix A

		Items tested/checked by Contractor	Items witnessed by PBSE/PBSI	Remark
q)	Call up data in the streamer and check if data match with the past event.	*Yes/No	*Yes/No	
r)	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	

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PBSE/*PBSI)

4.1.2 Interconnection Wire

(One record sheet for LAN, one record sheet for each LCP and its devices)
 (For system with standby 'LAN', one record sheet for each LAN)

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

4.1.2.1 Functional test

		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):		

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PBSE/*PBSI)

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

		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):		

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PBSE/*PBSI)

4.1.4 Remote Alarm Transmission to a Private Security Control Centre

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

4.1.4.1 Power supply

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 center and requested to test continuity of telephone wire.		
b)	Activate an alarm and request control center to confirm receipt of alarm.		
c)	Activate multiple alarms and request control center 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 CCU.		
e)	Restore telephone plug and repeat test (b).		
f)	Additional items (if required):		

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PBSE/*PBSI)

4.1.5 Programme for Card Access Control System

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

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

		Items tested/checked by Contractor	Items witnessed by 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

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PBSE/*PBSI)

4.1.6 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/(_____)

4.1.6.1 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

4.1.6.2 Functional test

		Items tested/checked by Contractor			Items witnessed by PBSE/PBSI
			event logged on CCU	CCTV at correct position	
a)	Present a valid card, door open, close and shut according to schedule.	*Yes/No	*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	*Yes/No
c)	Present a valid card but with incorrect time zone, door should not open. Continue to present the card 3 time, alarm shall activate.	*Yes/No	*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	*Yes/No
e)	Present a valid card but with incorrect point of access, the door should not open.	*Yes/No	*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	*Yes/No
g)	Remote 'off' each card reader from CCU and then check if the door can be opened by manual key and no alarm arisen.	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Appendix A

		Items tested/checked by Contractor			Items witnessed by PBSE/PBSI
			event logged on CCU	CCTV at correct position	
h)	Remote 'on' the card reader from CCU and then check if card reader function properly by perform test a, b, c, d, and e again.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
i)	Activate anti-tampering alarm by loose the cover housing, alarm shall activate.	*Yes/No	*Yes/No	*Yes/No	*Yes/No
j)	Additional items (if required):	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PBSE/*PBSI)

4.1.7 Exit Control Lock

(One record sheet for each individual lock)

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

4.1.7.1 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

4.1.7.2 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	CCTV position correct	Alarm 'off' after reset	
a)	Simulation Test Push open the lock.	*Yes/No	*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	*Yes/No
c)	Remote Off Function Test Remote off the device at the Central Control Unit, then activate device.	*Yes/No	*Yes/No	*Yes/No	N/A	*Yes/No
d)	Remote On Function Test Remote turn on the device at the Central Control Unit, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

4.1.8 Duress 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/

4.1.8.1 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 Unit, 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 Unit, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

4.1.9 Motor 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/(_____)

4.1.9.1 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

4.1.9.2 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'	CCTV position correct	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	*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	*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	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

		Items tested/checked by Contractor				Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on'	CCTV position correct	Alarm 'off' after reset	
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	*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	*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	*Yes/No
g)	Covering Range Test 6 A person crawls across the detection range.	*Yes/No	*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	*Yes/No
i)	Tamper Alarm Function Test Disassembly the fixing cover or loosen the screws.	*Yes/No	*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	*Yes/No
k)	Walk Test	*Yes/No	*Yes/No	*Yes/No	*Yes/No	*Yes/No
l)	Remote Off Function Test Remote off the device at the Central Control Unit, then activate device.	*Yes/No	*Yes/No	*Yes/No	N/A	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

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

4.1.10 Glassbreak Detector

(One record sheet for each individual detector)

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

4.1.10.1 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

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

4.1.10.2 Functional test

		Items tested/checked by Contractor				Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on'	CCTV position correct	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	*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	*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	*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	*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	*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	*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	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

		Items tested/checked by Contractor				Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on'	CCTV position correct	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	*Yes/No
i)	Tamper Alarm Function Test Disassembly the fixing cover or loosen the screws.	*Yes/No	*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	*Yes/No
k)	Remote Off Function Test Remote off the device at the Central Control Unit, then activate device.	*Yes/No	*Yes/No	N/A	*Yes/No	*Yes/No
l)	Remote On Function Test Remote turn on the device at the Central Control Unit, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

4.1.11 Magnetic Door Contact

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

4.1.11.1 Functional test

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

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

4.1.12 Tamper Switch

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

4.1.12.1 Functional test

		Items tested/checked by Contractor				Items witnessed by PBSE/PBSI
		Local alarm 'on'	Central control console alarm 'on'	CCTV position correct	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	*Yes/No
b)	Deactivate the tamper switch (by closing the casing, or press close the microswitch manually).	*Yes/No	*Yes/No	N/A	*Yes/No	*Yes/No
c)	Line Fault Test Open and short the lines of the system.	*Yes/No	*Yes/No	*Yes/No	*Yes/No	*Yes/No
d)	Remote Off Function Test Remote off the device at the Central Control Unit, then activate device.	*Yes/No	*Yes/No	N/A	*Yes/No	*Yes/No
e)	Remote On Function Test Remote turn on the device at the Central Control Unit, then activate device.	*Yes/No	*Yes/No	*Yes/No	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

4.1.13 Electric Door Strike

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

4.1.13.1 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

4.1.13.2 Functional test

		Items tested/checked by Contractor	Items witnessed by PBSE/PBSI
a)	Simulation Test 1 Turn on electricity supply to the strike, the strike shall close.	*Yes/No	*Yes/No
b)	Simulation Test 2 Turn off electricity supply to the strike, the strike shall close.	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

4.1.14 Watchman Tour System

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

4.1.14.1 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 _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PBSE/*PBSI)

Testing and commissioning progress chart “Burglar Alarm and Security Installation”

Contract No. : _____

Contract Title : _____

Name of Contractor/Sub-contractor : _____

Contract Period : ___ / ___ /20___ to ___ / ___ /20___ * Revised/Actual Completion Date : ___ / ___ /20___

Testing and Commissioning Progress Chart for Burglar Alarm and Security Installation (Rev.) ⁽¹⁾														
Dates ⁽²⁾														Remark
Activities	Reference to Appendix A	S	A	S	A	S	A	S	A	S	A	S	A	
1. Visual inspection														
Central control console	3.1													
G/F														
1/F														
2/F														
3/F														
4/F														

Roof														
Submission of Record of Test														
2. Installation of peripherals														
Central control console	3.1													
G/F														
1/F														
2/F														
3/F														
4/F														

Submission of Record of Test														
3. Installation of cable	3.2													
G/F														
1/F														
2/F														
3/F														
4/F														

Submission of Record of Test														

Testing and Commissioning Progress Chart “Burglar Alarm and Security Installation”

Testing and Commissioning Progress Chart for Burglar Alarm and Security Installation (Rev.) ⁽¹⁾																				
Dates ⁽²⁾																				Remark
Activities	Reference to Appendix A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	
4.	Cable continuity test	4.12																		
	G/F																			
	1/F																			
	2/F																			
	3/F																			
	4/F																			
	Submission of Record of Test																			
5.	Signal level test																			
	Central control console	3.1																		
	G/F																			
	1/F																			
	2/F																			
	3/F																			
	4/F																			
	Submission of Record of Test																			
6.	Equipment test*																			
	Central control console	4.1.1																		
	UPS	4.1.3																		
	Remote alarm transmitter	4.1.4																		
	Card access system	4.1.5 & 4.1.6																		
	Exit control lock	4.1.7																		
	Duress button	4.1.8																		
	Motion detector	4.1.9																		
	Glassbreak detector	4.1.10																		
	Magnetic detector	4.1.11																		
	Tamper switch	4.1.12																		
	Electric door strike	4.1.13																		
	Watchman tour system	4.1.14																		
	Others																			
	Submission of Record of Test																			

Testing and Commissioning Progress Chart “Burglar Alarm and Security Installation”

Testing and Commissioning Progress Chart for Burglar Alarm and Security Installation (Rev.) ⁽¹⁾																		Remark			
Dates ⁽²⁾																					
Activities	Reference to Appendix A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A		
7.	Other test specified by PBSE*																				
	Central control console																				
	G/F																				
	1/F																				
	2/F																				
	3/F																				
	4/F																				
	Submission of Record of Test																				
8.	Submission of T&C Certificate																				

Notes

- * Delete if not applicable
- (1) Insert revision no.
- (2) Insert additional columns as necessary
 - S - schedule % completion
 - A - actual % completion