TEST REPORT
EN 60950-1
Information technology equipment – Safety – Part 1: General requirements

Report Number ..... :	**0413.002.3.04**
Date of issue ..... :	03/04/2018
Total number of pages ..... :	50 (Attachments 62 pages)
Applicant's name ..... :	CUBITECH S.A.
Address ..... :	Kiprou 4-6, Tavros 177 78, Greece
Test specification:	
Standard(s) ..... :	EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 +AC:2011+A2:2013
Test procedure ..... :	As above mentioned standard
Non-standard test method ..... :	NA
Test Report Form No ..... :	TRF EN 60950-1 V1.0
Test Report Form(s) Originator ..... :	Labor S.A.
Master TRF ..... :	18/02/2015
Test item description ..... :	Cubis Network Video Recorder
Trade Mark ..... :	cubitech
Manufacturer ..... :	Same as applicant
Model/Type reference ..... :	Cubis Standard

Tested by (name + signature) :	**Approved by (name + signature) :**
MARIA RIGA ELECTRICAL ENGINEER NTUA	ANTONIOS POLITIS ELECTRICAL ENGINEER LAB MANAGER

Testing procedure and testing location:

☑ Testing Laboratory..... : LABOR S.A.

Testing location/ address ..... : 84 ETHNIKIS ANTISTASEOS STR 15351 PALLINI

☐ Associated Testing Laboratory ..... : NA

Testing location/ address ..... : NA

List of Attachments (including a total number of pages in each attachment):

●Attachment 1: Cubis Standard- Key features and specifications (4) pages.
●Attachment 2: Quick User Guide- Cubis Software (7) pages.
●Attachment 3: User Manual for using Cubis Software (51) pages.

Summary of testing:

SAMPLES OF THE PRODUCTS HAVE BEEN TESTED ACCORDING TO THE ABOVE MENTIONED STANDARD AND COMPLIED WITH IT'S APPLICABLE REQUIREMENTS

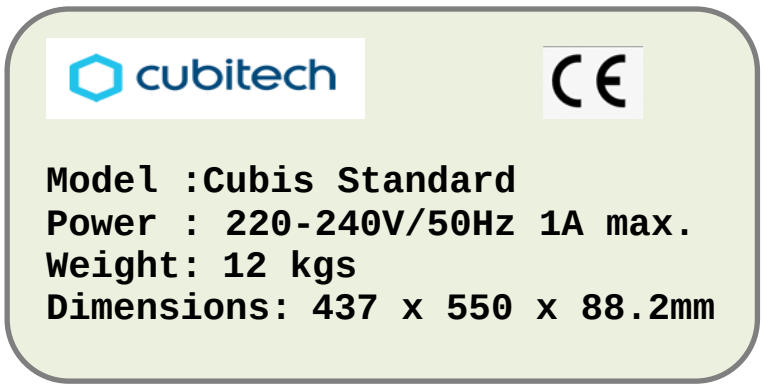
Tests performed (name of test and test clause):	**Testing location:**
All applicable tests	LABOR S.A. 84 ETHNIKIS ANTISTASEOS STR 15351 PALLINI

Summary of compliance with National Differences:

Greece

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Possible test case verdicts:

- test case does not apply to the test object ..... : NA (Not Applicable)
- test object does meet the requirement ..... : P (Pass)
- test object is not tested the requirement..... : NT (Not Tested)
- test object does not meet the requirement..... : F (Fail)

Testing:

Date of receipt of test item..... : 23/03/2018

Date (s) of performance of tests..... : 23/03/2018- 30/03/2018

General remarks:

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

This test report does not entitle to carry or approval any safety mark on this or similar(s) products.

General product information:

System matched with storage up to 8 HDD bays for footage coming from surveillance cameras.

Clause	Requirement - Test	Result - Remark	Verdict
1	GENERAL		-
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard Components and subassemblies that comply with IEC 62368-1 are acceptable as part of an equipment covered by this standard without further evaluation other than to give consideration to the appropriate use of the component or subassembly in the end-product.	Components, which were found to affect safety aspects, comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards. (see appendedtable 1.5.1)	P
1.5.2	Evaluation and testing of components	Components, which are certified to IEC and/or national standards, are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls		NA
1.5.4	Transformers		NA
1.5.5	Interconnecting cables		P
1.5.6	Capacitors bridging insulation		NA
1.5.7	Resistors bridging insulation		NA
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		NA
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		NA
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		NA
1.5.8	Components in equipment for IT power systems		NA
1.5.9	Surge suppressors		NA
1.5.9.1	General		NA
1.5.9.2	Protection of VDRs		NA
1.5.9.3	Bridging of functional insulation by a VDR		NA
1.5.9.4	Bridging of basic insulation by a VDR		NA
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		NA
1.6	Power interface		P
1.6.1	AC power distribution systems	TN-S Power Distribution System	P
1.6.2	Input current	See appended table 1.6.2	P
1.6.3	Voltage limit of hand-held equipment		NA

Clause	Requirement - Test	Result - Remark	Verdict
1.6.4	Neutral conductor		P
1.7	Marking and instructions		P
1.7.1	Power rating		P
1.7.1.1	Rated voltage(s) or voltage range(s) (V):	220~240 AC	P
	Symbol for nature of supply, for d.c. only:		NA
	Rated frequency or rated frequency range (Hz) :	50Hz	NA
	Rated current (mA or A) :	1A max	P
1.7.1.2	Manufacturer's name or trade-mark or identification mark:	See copy of marking plate.	P
	Model identification or type reference :	See copy of marking plate.	P
	Symbol for Class II equipment only:	Class I equipment	NA
	Other markings and symbols :	See copy of marking plate.	P
1.7.2	Safety instructions and marking		P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Note on installation manual	NA
1.7.2.3	Overcurrent protective device		NA
1.7.2.4	IT power distribution systems		NA
1.7.2.5	Operator access with a tool		NA
1.2.7.6	Ozone		NA
1.7.3	Short duty cycles		NA
1.7.4	Supply voltage adjustment .....:	No voltage/frequency setting	NA
	Methods and means of adjustment; reference to installation instructions .....:		NA
1.7.5	Power outlets on the equipment .....:		NA
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference).....:		NA
1.7.7	Wiring terminals		P
1.7.7.1	Protective earthing and bonding terminals .....:		P
1.7.7.2	Terminals for a.c. mains supply conductors	Appliance inlet for connection to detachable power supply cord	NA
1.7.7.3	Terminals for d.c. mains supply conductors		NA
1.7.8	Controls and indicators	Power supply push button	P
1.7.8.1	Identification, location and marking.....:	Adjacent to the switch	P
1.7.8.2	Colours .....:		NA
1.7.8.3	Symbols according to IEC 60417 ..... :	- ⏻ for push button	P
1.7.8.4	Markings using figures .....:		NA
1.7.9	Isolation of multiple power sources .....:		NA
1.7.10	Thermostats and other regulating devices .....:		NA

Clause	Requirement - Test	Result - Remark	Verdict
1.7.11	Durability	Rubbed with cloth soaked with water for 15 s and again for 15 s with the cloth soaked with petroleum spirit. After this test the label was still legible. There was not possible to remove the label easily and showed no curling.	P
1.7.12	Removable parts	Marking plate not placed on removable parts	NA
1.7.13	Replaceable batteries .....:		NA
	Language(s) .....:		-
1.7.14	Equipment for restricted access locations .....:	Not for restricted access location	NA
2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	Operator access area: screen/keyboard	P
2.1.1.1	Access to energized parts	No hazardous energized parts	NA
	Test by inspection :		NA
	Test with test finger (Figure 2A) :		NA
	Test with test pin (Figure 2B) :		NA
	Test with test probe (Figure 2C):		NA
2.1.1.2	Battery compartments		NA
2.1.1.3	Access to ELV wiring		NA
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		NA
2.1.1.4	Access to hazardous voltage circuit wiring		NA
2.1.1.5	Energy hazards:		NA
2.1.1.6	Manual controls	Handles earthed via protective conductor	P
2.1.1.7	Discharge of capacitors in equipment		NA
	Measured voltage (V); time-constant (s):		-
2.1.1.8	Energy hazards - d.c. mains supply	No d.c. mains supply	NA
	a) Capacitor connected to the d.c. mains supply .. :		NA
	b) Internal battery connected to the d.c. mains supply:		NA
2.1.1.9	Audio amplifiers:	No operator access	NA
2.1.2	Protection in service access areas		P
2.1.3	Protection in restricted access locations		NA
2.2	SELV circuits		P
2.2.1	General requirements		P

Clause	Requirement - Test	Result - Remark	Verdict
2.2.2	Voltages under normal conditions (V) :	42.4Vpeak or 60Vdc are not exceeded in SELV circuit under normal condition	P
2.2.3	Voltages under fault conditions (V) :	Under fault conditions voltages never exceed 71V peak and 120Vdc and do not exceed 42.4V peak or 60V dc for more than 0.2 sec.	P
2.2.4	Connection of SELV circuits to other circuits :	Interconnected SELV circuits GreatWall Server power supply with secondary output (12V, 5V, 3.3V).	P
2.3	TNV circuits		NA
2.3.1	Limits		NA
	Type of TNV circuits:		–
2.3.2	Separation from other circuits and from accessible parts		NA
2.3.2.1	General requirements		NA
2.3.2.2	Protection by basic insulation		NA
2.3.2.3	Protection by earthing		NA
2.3.2.4	Protection by other constructions:		NA
2.3.3	Separation from hazardous voltages		NA
	Insulation employed:		–
2.3.4	Connection of TNV circuits to other circuits		NA
	Insulation employed:		–
2.3.5	Test for operating voltages generated externally		NA
2.4	Limited current circuits		NA
2.4.1	General requirements	No limited current circuits	NA
2.4.2	Limit values		NA
	Frequency (Hz):		–
	Measured current (mA):		–
	Measured voltage (V):		–
	Measured circuit capacitance (nF or uF):		–
2.4.3	Connection of limited current circuits to other circuits		NA
2.5	Limited power sources	GreatWall power supply GW-2U600 600Watt max.output	NA
	a) Inherently limited output		NA
	b) Impedance limited output		NA

Clause	Requirement - Test	Result - Remark	Verdict
	c) Regulating network limited output under normal operating and single fault condition		NA
	d) Overcurrent protective device limited output		NA
	Max. output voltage (V), max. output current (A), max. apparent power (VA):		NA
	Current rating of overcurrent protective device (A) .		-
2.6	Provisions for earthing and bonding	Class I equipment	P
2.6.1	Protective earthing		P
2.6.2	Functional earthing		NA
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors	0,5 mm ^{2} (I < 3A)	P
	Rated current (A), cross-sectional area (mm2), AWG :	Imax:1A	P
2.6.3.3	Size of protective bonding conductors	Rated current <16A : Size not specified	P
	Rated current (A), cross-sectional area (mm2), AWG	Same as above	P
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) :		NA
2.6.3.5	Colour of insulation	Green-yellow cables used	P
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals	Appliance inlet for connection to detachable supply cord→ main protective earthing terminal	P
	Rated current (A), type, nominal thread diameter (mm) :	Protective earthing terminal : Appliance inlet for connection to detachable supply cord Protective bonding terminal : Inside the GreatWall assembly	P
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		NA
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment		P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or overcurrent protective devices	P
2.6.5.3	Disconnection of protective earth	Relevant parts removed at the same time	P
2.6.5.4	Parts that can be removed by an operator		P
2.6.5.5	Parts removed during servicing		P

Clause	Requirement - Test	Result - Remark	Verdict
2.6.5.6	Corrosion resistance		NA
2.6.5.7	Screws for protective bonding	Protective bonding continuity provided through GreatWall Power Supply Unit	NA
2.6.5.8	Reliance on telecommunication network or cable distribution system		NA
2.7	Overcurrent and earth fault protection in primary circuits		NA
2.7.1	Basic requirements		NA
	Instructions when protection relies on building installation		NA
2.7.2	Faults not simulated in 5.3.7		NA
2.7.3	Short-circuit backup protection		NA
2.7.4	Number and location of protective devices :		NA
2.7.5	Protection by several devices		NA
2.7.6	Warning to service personnel:		NA
2.8	Safety interlocks		NA
2.8.1	General principles		NA
2.8.2	Protection requirements		NA
2.8.3	Inadvertent reactivation		NA
2.8.4	Fail-safe operation		NA
2.8.5	Moving parts		NA
2.8.6	Overriding		NA
2.8.7	Switches and relays		NA
2.8.7.1	Contact gaps (mm):		NA
2.8.7.2	Overload test		NA
2.8.7.3	Endurance test		NA
2.8.7.4	Electric strength test		NA
2.8.8	Mechanical actuators		NA
2.9	Electrical insulation	Class I equipment	P
2.9.1	Properties of insulating materials	Cubis Standard metallic enclosure grounded via protective bonding.For internal components and power supply unit: See table 1.5.1	P
2.9.2	Humidity conditioning		NA
	Relative humidity (%), temperature (°C) :		–
2.9.3	Grade of insulation	Functional, basic, supplementary	P
2.9.4	Separation from hazardous voltages	Inaccessible conductive parts	NA
	Method(s) used:		-
2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General		P
2.10.1.1	Frequency		P

Clause	Requirement - Test	Result - Remark	Verdict
2.10.1.2	Pollution degrees ..... :	Pollution Degree 2	P
2.10.1.3	Reduced values for functional insulation		NA
2.10.1.4	Intervening unconnected conductive parts		NA
2.10.1.5	Insulation with varying dimensions		NA
2.10.1.6	Special separation requirements		NA
2.10.1.7	Insulation in circuits generating starting pulses		NA
2.10.2	Determination of working voltage	220V-240V~	P
2.10.2.1	General	Actual working voltage applied	P
2.10.2.2	RMS working voltage	230V~	P
2.10.2.3	Peak working voltage	240V~	P
2.10.3	Clearances	See appended table 2.10.3 and 2.10.4	P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages	Normal transient voltage considered	P
	a) AC mains supply ..... :	Overvoltage category II for primary circuit and transient voltage 2500Vpeak	P
	b) Earthed d.c. mains supplies ..... :		NA
	c) Unearthed d.c. mains supplies ..... :		NA
	d) Battery operation ..... :		NA
2.10.3.3	Clearances in primary circuits		P
2.10.3.4	Clearances in secondary circuits		P
2.10.3.5	Clearances in circuits having starting pulses		NA
2.10.3.6	Transients from a.c. mains supply ..... :	Secondary circuit transient voltage:1500Vpeak	P
2.10.3.7	Transients from d.c. mains supply ..... :		NA
2.10.3.8	Transients from telecommunication networks and cable distribution systems :		NA
2.10.3.9	Measurement of transient voltage levels		NA
	a) Transients from a mains supply		NA
	For an a.c. mains supply :		NA
	For a d.c. mains supply :		NA
	b) Transients from a telecommunication network :		NA
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests.....:	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation		NA
2.10.5.1	General		NA
2.10.5.2	Distances through insulation	See appended table 2.10.5	NA

Clause	Requirement - Test	Result - Remark	Verdict
2.10.5.3	Insulating compound as solid insulation		NA
2.10.5.4	Semiconductor devices		NA
2.10.5.5.	Cemented joints		NA
2.10.5.6	Thin sheet material - General		NA
2.10.5.7	Separable thin sheet material		NA
	Number of layers .....:		—
2.10.5.8	Non-separable thin sheet material		NA
2.10.5.9	Thin sheet material - standard test procedure		NA
	Electric strength test		—
2.10.5.10	Thin sheet material - alternative test procedure		NA
	Electric strength test		—
2.10.5.11	Insulation in wound components		NA
2.10.5.12	Wire in wound components		NA
	Working voltage :		NA
	a) Basic insulation not under stress :		NA
	b) Basic, supplemetary, reinforced insulation:		NA
	c) Compliance with Annex U :		NA
	Two wires in contact inside wound component; angle between 45° and 90° :		NA
2.10.5.13	Wire with solvent-based enamel in wound components		NA
	Electric strength test		—
	Routine test		NA
2.10.5.14	Additional insulation in wound components		NA
	Working voltage :		NA
	- Basic insulation not under stress :		NA
	- Supplemetary, reinforced insulation:		NA
2.10.6	Construction of printed boards		P
2.10.6.1	Uncoated printed boards	See appended table 2.10.3 and 2.10.4	P
2.10.6.2	Coated printed boards		NA
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		NA
2.10.6.4	Insulation between conductors on different layers of a printed board		NA
	Distance through insulation		NA
	Number of insulation layers (pcs):		NA
2.10.7	Component external terminations	See appended table 2.10.3 and 2.10.4	NA

Clause	Requirement - Test	Result - Remark	Verdict
2.10.8	Tests on coated printed boards and coated components		NA
2.10.8.1	Sample preparation and preliminary inspection		NA
2.10.8.2	Thermal conditioning		NA
2.10.8.3	Electric strength test	See appended table 5.2	NA
2.10.8.4	Abrasion resistance test		NA
2.10.9	Thermal cycling		NA
2.10.10	Test for Pollution Degree 1 environment and insulating compound		NA
2.10.11	Tests for semiconductor devices and cemented joints		NA
2.10.12	Enclosed and sealed parts		NA
3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection		P
3.1.2	Protection against mechanical damage		P
3.1.3	Securing of internal wiring		P
3.1.4	Insulation of conductors	The insulation of conductors suitable for the application and the working voltage.	P
3.1.5	Beads and ceramic insulators		NA
3.1.6	Screws for electrical contact pressure		P
3.1.7	Insulating materials in electrical connections		NA
3.1.8	Self-tapping and spaced thread screws		NA
3.1.9	Termination of conductors	Terminations fixed	P
	10 N pull test		P
3.1.10	Sleeving on wiring	Used and retained in position	P
3.2	Connection to a mains supply	An appliance inlet for connection of detachable supply power cord	P
3.2.1	Means of connection		-
3.2.1.1	Connection to an a.c. mains supply		P
3.2.1.2	Connection to a d.c. mains supply		NA
3.2.2	Multiple supply connections		NA
3.2.3	Permanently connected equipment		NA
	Number of conductors, diameter of cable and conduits (mm) :		—
3.2.4	Appliance inlets	See above.	P
3.2.5	Power supply cords	See above.	P
3.2.5.1	AC power supply cords		P
	Type :	See list of components	—
	Rated current (A), cross-sectional area (mm^2), AWG:	I max< 3A, flexible / 0.5mm^2	—
3.2.5.2	DC power supply cords		NA
3.2.6	Cord anchorages and strain relief		NA

Clause	Requirement - Test	Result - Remark	Verdict
	Mass of equipment (kg), pull (N) :		—
	Longitudinal displacement (mm) :		—
3.2.7	Protection against mechanical damage		NA
3.2.8	Cord guards		NA
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm):		—
3.2.9	Supply wiring space		NA
3.3	Wiring terminals for connection of external conductors		NA
3.3.1	Wiring terminals		NA
3.3.2	Connection of non-detachable power supply cords		NA
3.3.3	Screw terminals		NA
3.3.4	Conductor sizes to be connected		P
	Rated current (A), cord/cable type, cross-sectional area (mm^2):	I max< 3A, flexible / 0.5mm^2	—
3.3.5	Wiring terminal sizes		NA
	Rated current (A), type, nominal thread diameter (mm) .....:		—
3.3.6	Wiring terminal design		NA
3.3.7	Grouping of wiring terminals		NA
3.3.8	Stranded wire		NA
3.4	Disconnection from the mains supply		NA
3.4.1	General requirement		NA
3.4.2	Disconnect devices		NA
3.4.3	Permanently connected equipment		NA
3.4.4	Parts which remain energized		NA
3.4.5	Switches in flexible cords		NA
3.4.6	Number of poles - single-phase and d.c. equipment		NA
3.4.7	Number of poles - three-phase equipment		NA
3.4.8	Switches as disconnect devices		NA
3.4.9	Plugs as disconnect devices		NA
3.4.10	Interconnected equipment		NA
3.4.11	Multiple power sources		NA
3.5	Interconnection of equipment		P
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits:	SELV - SELV	P
3.5.3	ELV circuits as interconnection circuits		NA
3.5.4	Data ports for additional equipment		NA
4	PHYSICAL REQUIREMENTS		P

Clause	Requirement - Test	Result - Remark	Verdict
4.1	Stability		NA
	Angle of 10°		NA
	Test force (N) :		NA
4.2	Mechanical strength	Rack mounted equipment	P
4.2.1	General		P
4.2.2	Steady force test, 10 N	10N applied to components other than parts serving as an enclosure.	P
4.2.3	Steady force test, 30 N		P
4.2.4	Steady force test, 250 N	250N applied to outer enclosure. No energy or other hazards.	P
4.2.5	Impact test		NA
	Fall test		NA
	Swing test		NA
4.2.6	Drop test; height (mm) :		NA
4.2.7	Stress relief test		NA
4.2.8	Cathode ray tubes	No CRT	NA
	Picture tube separately certified:		NA
4.2.9	High pressure lamps	No high pressure lamp.	NA
4.2.10	Wall or ceiling mounted equipment; force (N) :		NA
4.3	Design and construction		P
4.3.1	Edges and corners	Edges and corners not hazardous to operators	P
4.3.2	Handles and manual controls; force (N) .....:	20N applied to the handles of the front part of the server.	P
4.3.3	Adjustable controls		NA
4.3.4	Securing of parts	All inner components securely attached	P
4.3.5	Connection by plugs and sockets		P
4.3.6	Direct plug-in equipment		NA
	Torque.....:		–
	Compliance with the relevant mains plug standard		NA
4.3.7	Heating elements in earthed equipment		NA
4.3.8	Batteries		NA
	- Overcharging of a rechargeable battery		NA
	- Unintentional charging of a non-rechargeable battery		NA
	- Reverse charging of a rechargeable battery		NA
	- Excessive discharging rate for any battery		NA

Clause	Requirement - Test	Result - Remark	Verdict
4.3.9	Oil and grease		NA
4.3.10	Dust, powders, liquids and gases		NA
4.3.11	Containers for liquids or gases		NA
4.3.12	Flammable liquids .....:		NA
	Quantity of liquid (l) .....:		NA
	Flash point (°C) .....:		NA
4.3.13	Radiation		NA
4.3.13.1	General		NA
4.3.13.2	Ionizing radiation		NA
	Measured radiation (pA/kg).....:		—
	Measured high-voltage (kV) .....:		—
	Measured focus voltage (kV) .....:		—
	CRT markings .....:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		NA
	Part, property, retention after test, flammability classification.....:		NA
4.3.13.4	Human exposure to ultraviolet (UV) radiation :		NA
4.3.13.5	Laser (including LEDs)		NA
	Laser class .....:		—
4.3.13.6	Other types.....:		NA
4.4	Protection against hazardous moving parts	Fan blades not considered likely to cause injury.	NA
4.4.1	General		NA
4.4.2	Protection in operator access areas .....:		NA
4.4.3	Protection in restricted access locations.....:		NA
4.4.4	Protection in service access areas		NA
4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L.....:		—
4.5.3	Temperature limits for materials	See appended table 4.5	P
4.5.4	Touch temperature limits	See appended table 4.5	P
4.5.5	Resistance to abnormal heat .....:	No hazardous voltages mounted directly on thermoplastic parts	NA

Clause	Requirement - Test	Result - Remark	Verdict
4.6	Openings in enclosures		NA
4.6.1	Top and side openings	Openings on the right side of the server give no access to hazardous voltages	NA
	Dimensions (mm) :	<5mm at any dimension	NA
4.6.2	Bottoms of fire enclosures		NA
	Construction of the bottom, dimensions (mm) .. :		—
4.6.3	Doors or covers in fire enclosures		NA
4.6.4	Openings in transportable equipment		NA
4.6.4.1	Constructional design measures		NA
	Dimensions (mm).....:		—
4.6.4.2	Evaluation measures for larger openings		NA
4.6.4.3	Use of metallized parts		NA
4.6.5	Adhesives for constructional purposes		NA
	Conditioning temperature (°C), time (weeks).....:		—
4.7	Resistance to fire	Metals, ceramic materials and glass comply without test	P
4.7.1	Reducing the risk of ignition and spread of flame		P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	P
4.7.2	Conditions for a fire enclosure	fire enclosure not necessary	NA
4.7.2.1	Parts requiring a fire enclosure		NA
4.7.2.2	Parts not requiring a fire enclosure		P
4.7.3	Materials		P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures		NA
4.7.3.3	Materials for components and other parts outside fire enclosures		NA
4.7.3.4	Materials for components and other parts inside fire enclosures		NA
4.7.3.5	Materials for air filter assemblies		NA
4.7.3.6	Materials used in high-voltage components	No high voltage component.	NA
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	Class I equipment	P
5.1.2	Configuration of equipment under test (EUT)		P

Clause	Requirement - Test	Result - Remark	Verdict
5.1.2.1	Single connection to an a.c. mains supply		NA
5.1.2.2	Redundant multiple connections to an a.c. mains supply		P
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		NA
5.1.3	Test circuit		-
5.1.4	Application of measuring instrument		-
5.1.5	Test procedure		-
5.1.6	Test measurements		P
	Supply voltage (V) .....:	230V	—
	Measured touch current (mA) .....:	0.68mA	P
	Max. allowed touch current (mA) .....:	3.5mA	—
	Measured protective conductor current (mA) :		—
	Max. allowed protective conductor current (mA) ... :		—
5.1.7	Equipment with touch current exceeding 3,5 mA	See above	NA
5.1.7.1	General .....:		NA
5.1.7.2	Simultaneous multiple connections to the supply		NA
5.1.8	Touch currents to communication networks and cable distribution systems and from telecommunication networks		NA
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		NA
	Supply voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks		NA
	a) EUT with earthed telecommunication ports :		NA
	b) EUT whose telecommunication ports have no reference to protective earth		NA
5.2	Electric strength		P
5.2.1	General	See appended table 5.2	P
5.2.2	Test procedure		P
5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	NA
5.3.2	Motors		P
5.3.3	Transformers		NA

Clause	Requirement - Test	Result - Remark	Verdict
5.3.4	Functional insulation .....:		P
5.3.5	Electromechanical components		NA
5.3.6	Audio amplifiers in ITE .....:		NA
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs.	NA
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests		P
5.3.9.2	After the tests		P
6	CONNECTION TO TELECOMMUNICATION NETWORKS		NA
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		NA
6.1.1	Protection from hazardous voltages		NA
6.1.2	Separation of the telecommunication network from earth		NA
6.1.2.1	Requirements		NA
	Supply voltage (V) .....:		—
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions .....:		NA
6.2	Protection of equipment users from overvoltages on telecommunication networks		NA
6.2.1	Separation requirements		NA
6.2.2	Electric strength test procedure		NA
6.2.2.1	Impulse test		NA
6.2.2.2	Steady-state test		NA
6.2.2.3	Compliance criteria		NA
6.3	Protection of the telecommunication wiring system from overheating		NA
	Max. output current (A) .....:		—
	Current limiting method .....:		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		NA
7.1	General	No connection to cable distribution system existing	NA
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		NA
7.3	Protection of equipment users from overvoltages on the cable distribution system		NA

Clause	Requirement - Test	Result - Remark	Verdict
7.4	Insulation between primary circuits and cable distribution systems		NA
7.4.1	General		NA
7.4.2	Voltage surge test		NA
7.4.3	Impulse test		NA
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		NA
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		NA
A.1.1	Samples .....:		—
	Wall thickness (mm).....:		—
A.1.2	Conditioning of samples; temperature (°C).....:		NA
A.1.3	Mounting of samples.....:		NA
A.1.4	Test flame (see IEC 60695-11-3)		NA
	Flame A, B, C or D .....:		—
A.1.5	Test procedure		NA
A.1.6	Compliance criteria		NA
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material .....:		—
	Wall thickness (mm).....:		—
A.2.2	Conditioning of samples; temperature (°C).....:		NA
A.2.3	Mounting of samples.....:		NA
A.2.4	Test flame (see IEC 60695-11-4)		NA
	Flame A, B or C.....:		—
A.2.5	Test procedure		NA
A.2.6	Compliance criteria		NA
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—

Clause	Requirement - Test	Result - Remark	Verdict
	Sample 3 burning time (s).....:		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		NA
	Sample 1 burning time (s).....:		—
	Sample 2 burning time (s).....:		—
	Sample 3 burning time (s).....:		—
A.3	Hot flaming oil test (see 4.6.2)		NA
A.3.1	Mounting of samples		NA
A.3.2	Test procedure		NA
A.3.3	Compliance criterion		NA
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		NA
B.1	General requirements		NA
	Position .....:		—
	Manufacturer.....:		—
	Type .....:		—
	Rated values .....:		—
B.2	Test conditions		NA
B.3	Maximum temperatures		NA
B.4	Running overload test		NA
B.5	Locked-rotor overload test		NA
	Test duration (days) .....:		—
	Electric strength test: test voltage (V) .....:		—
B.6	Running overload test for d.c. motors in secondary circuits		NA
B.6.1	General		NA
B.6.2	Test procedure		NA
B.6.3	Alternative test procedure		NA
B.6.4	Electric strength test; test voltage (V) .....:		NA
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		NA
B.7.1	General		NA
B.7.2	Test procedure		NA

Clause	Requirement - Test	Result - Remark	Verdict
B.7.3	Alternative test procedure		NA
B.7.4	Electric strength test; test voltage (V) ..... :		NA
B.8	Test for motors with capacitors		NA
B.9	Test for three-phase motors		NA
B.10	Test for series motors		NA
	Operating voltage (V) .....:		—
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		NA
	Position :		—
	Manufacturer:		—
	Type :		—
	Rated values :		—
	Method of protection:		—
C.1	Overload test		NA
C.2	Insulation		NA
	Protection from displacement of windings ..... :		NA
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		P
D.1	Measuring instrument	D1 Used	P
D.2	Alternative measuring instrument		NA
E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		NA
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES(see 2.10 and Annex G)		P
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		NA
G.1	Clearances		NA
G.1.1	General		NA
G.1.2	Summary of the procedure for determining minimum clearances		NA
G.2	Determination of mains transient voltage (V)		NA
G.2.1	AC mains supply ..... :		NA

Clause	Requirement - Test	Result - Remark	Verdict
G.2.2	Earthed d.c. mains supplies ..... :		NA
G.2.3	Unearthed d.c. mains supplies ..... :		NA
G.2.4	Battery operation ..... :		NA
G.3	Determination of telecommunication network transient voltage (V) ..... :		NA
G.4	Determination of required withstand voltage (V)		NA
G.4.1	Mains transients and internal repetitive peaks ..... :		NA
G.4.2	Transients from telecommunication networks ..... :		NA
G.4.3	Combination of transients		NA
G.4.4	Transients from cable distribution systems		NA
G.5	Measurement of transient voltages (V)		NA
	a) Transients from a mains supply		NA
	For an a.c. mains supply		NA
	For a d.c. mains supply		NA
	b) Transients from a telecommunication network		NA
G.6	Determination of minimum clearances .....:		NA

H	ANNEX H, IONIZING RADIATION (see 4.3.13)		NA

J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS		NA
	Metal(s) used .....:		—

K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		NA
K.1	Making and breaking capacity		NA
K.2	Thermostat reliability; operating voltage (V) .....:		NA
K.3	Thermostat endurance test; operating voltage (V)		NA
K.4	Temperature limiter endurance; operating voltage (V) .....:		NA
K.5	Thermal cut-out reliability		NA
K.6	Stability of operation		NA

L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		NA
L.1	Typewriters		NA

Clause	Requirement - Test	Result - Remark	Verdict
L.2	Adding machines and cash registers		NA
L.3	Erasers		NA
L.4	Pencil sharpeners		NA
L.5	Duplicators and copy machines		NA
L.6	Motor-operated files		NA
L.7	Other business equipment		NA

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		NA
M.1	Introduction		NA
M.2	Method A		NA
M.3	Method B		NA
M.3.1	Ringing signal		NA
M.3.1.1	Frequency (Hz) ..... :		—
M.3.1.2	Voltage (V) ..... :		—
M.3.1.3	Cadence; time (s), voltage (V) ..... :		—
M.3.1.4	Single fault current (mA) ..... :		—
M.3.2	Tripping device and monitoring voltage ..... :		NA
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		NA
M.3.2.2	Tripping device		NA
M.3.2.3	Monitoring voltage (V) ..... :		NA

N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		NA
N.1	ITU-T impulse test generators		NA
N.2	IEC 60065 impulse test generator		NA

P	ANNEX P, NORMATIVE REFERENCES		—

Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		NA
	a) Preferred climatic categories .....:		NA
	b) Maximum continuous voltage .....:		NA

Clause	Requirement - Test	Result - Remark	Verdict
	c) Pulse current .....:		NA
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		NA
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		NA
R.2	Reduced clearances (see 2.10.3)		NA
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		NA
S.1	Test equipment		NA
S.2	Test procedure		NA
S.3	Examples of waveforms during impulse testing		NA
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		NA
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		NA
		See separate test report	—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		P
V.2	TN power distribution systems		P
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		NA
W.1	Touch current from electronic circuits		NA
W.1.1	Floating circuits		NA
W.1.2	Earthed circuits		NA
W.2	Interconnection of several equipments		NA
W.2.1	Isolation		NA
W.2.2	Common return, isolated from earth		NA
W.2.3	Common return, connected to protective earth		NA
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clauseC.1)		NA
X.1	Determination of maximum input current		NA

Clause	Requirement - Test	Result - Remark	Verdict
X.2	Overload test procedure		NA
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		NA
Y.1	Test apparatus .....:		NA
Y.2	Mounting of test samples .....:		NA
Y.3	Carbon-arc light-exposure apparatus .....:		NA
Y.4	Xenon-arc light exposure apparatus .....:		NA
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		P
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		NA
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		NA
DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		P
EE	ANNEX EE, Household and home/office document/media shredders		NA
			-

EN 60950-1:2006 - CENELEC COMMON MODIFICATIONS		
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations	P

Clause	Requirement - Test	Result - Remark	Verdict

General	Delete all the "country" notes in the reference document according to the following list list: 1.4.8 Note 2 — 1.5.1 Note 2 & 3 — 1.5.7.1 Note 1.5.8 Note 2 — 1.5.9.4 Note — 1.7.2.1 Note 4, 5 & 6 2.2.3 Note — 2.2.4 Note — 2.3.2 Note 2.3.2.1 Note 2 — 2.3.4 Note 2 — 2.6.3.3 Note 2 & 3 2.7.1 Note — 2.10.3.2 Note 2 — 2.10.5.13 Note 3 3.2.1.1 Note — 3.2.4 Note 3. — 2.5.1 Note 2 4.3.6 Note 1 & 2 — 4.7 Note 4 — 4.7.2.2 Note 4.7.3.1 Note 2 — 5.1.7.1 Note 3 & 4 — 5.3.7 Note 1 6 Note 2 & 5 — 6.1.2.1 Note 2 — 6.1.2.2 Note 6.2.2 Note 6. — 2.2.1 Note 2 — 6.2.2.2 Note 7.1 Note 3 — 7.2 Note — 7.3 Note 1 & 2 G.2.1 Note 2 — Annex H Note 2	P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	NA
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances within the EU: see Directive 2002/95/EC in electrical and electronic equipment is restricted	P
1.7.2.1	Add the following NOTE: NOTE Z1 In addition, the instructions shall include, as far as applicable, a warning that excessive sound pressure from earphones and headphones can cause hearing loss	NA

Clause	Requirement - Test	Result - Remark	Verdict
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		P
2.7.2	This subclause has been declared 'void'		--
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		--
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: | Up to and including 6 | | 0,75 [a)] | | Over 6 up to and including 10 | (0,75) [b)] 1,0 | | Over 10 up to and including 16 | (1,0) [c] 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition [a)]. In NOTE 1, applicable to Table 3B, delete the second sentence		--
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: | Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A		--
4.3.13.6	Add the following NOTE: NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC		--
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.		--

Clause	Requirement - Test	Result - Remark	Verdict
Bibliography	Additional EN standards.		--
ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS		--

1.5.1	TABLE: List of critical components				
Object/part No.	Manufacturer/ Trademark	Type/model	Technical data	Standard	Mark(s) of conformity[1])
Desktop Memory	crucial by Micron	DDR4	Operating Voltage: 1.2V,Speed :2133MHz ,4GB capacity		CE
RAID Controller	LSI	MegaRAID SAS 9261-8i	Operating Voltage: 3.3V, Clock Speed: 800 MHz. Buffer size 512MB, 600MBps data rate		CE, FC
Processor	intel	Intel® Core™ i5-7400	6M Cache, up to 3.50 GHz, Maximum Memory Size:64 GB		CE,
CPU Cooler	intel	Intel® E97379-003	Operating Voltage: 12Vdc Current: 0.2A		CE,
Motherboard	GIGABYTE	GA-H270-Gaming 3	Operating System: Windows® 10, 24-pin main power connector, 8-pin ATX12V connector		CE, FC
Surveillance Hard Drivers	WD	WD10PURZ	Operating Voltage: 5Vdc/ 12Vdc, 1TB, Read/write power require- ments: 3.3W		RoHS compliant, CE
Cooling Fan	JIAHONGXING TECH Co.LTD	JHX8025S12	Operating Voltage: 12Vdc / Curent : 0.15-0.2A		CE
Internal Solid State Drive	CORSAIR	CSSD-F240GBMP500	Active Read : 4.89W Active Write: 4.81W		CE, FC
Switching Power supply	Great Wall	GW-CRPS800	Input: 100- 240V~, Frequency: 50/60Hz Current: 10-5A DCoutput: 12V Total Power: 800W		CE, FC, , EAC

Clause	Requirement - Test	Result - Remark	Verdict

Network Adapter	TP-LINK	TG-3468	Transmission Rate: -10/100/1000Mbps for Half-Duplex mode -20/200/2000Mbps for Full-Duplex mode		CE, FC
Server Slide Rails	REPON	W-1175-A	Mounting Screw		Tested with appliance
Internet Server	TOPLOONG 拓普龙科技	TOP2U550L-A	File Server • NAS / iSCSI SAN		Tested with appliance
Remarks:					

1.6.2 TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Prated (W)	P (W)	Fuse #	Ifuse (A)	Condition/status
240	0,4	--	75,4	--	--	
Supplementary information:For the input current measurement, two cameras were on service.						

Clause	Requirement - Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance and measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
Functional:							
functional insulation, clause 5.3.4c)	<71	3.3V, 5V, 12V	0.2	>>0.2	--	--	
Basic/supplementary	<420	230	2.0	>>2.5	2.5	>>2.5	
Supplementary information:							

4.3.8	`TABLE: Batteries								NA
The tests of 4.3.8 are applicable only when appropriate battery data is not available									
Is it possible to install the battery in a reverse polarity position?							No (polarized connector)		
Non-rechargeable batteries			Rechargeable batteries						
Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
N/A	N/A	N/A					N/A	N/A	

Test results:		Verdict
- Chemical leaks		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		
Supplementary information:		

Clause	Requirement - Test	Result - Remark	Verdict

4.5	TABLE: Temperature rise						P
	Supply voltage (V) ..... :	240 V	--	--	---		
	Ambient T_{min} (°C)..... :	21.0	--	--	--		
	Ambient T_{max} (°C) ..... :	21.0	--	--	--		
Maximum measured temperature T of part/at:		T (°C)					Allowed T_{max}(°C)
ON/OFF Push button		22.9					85
Appliance Inlet		24.5					75
Supply cord (from mains)		26.4					75
Power supply metallic enclosure		24.9					60
Heat sink MegaRAID Controller		25,8					105
CPU Cooler		24.8					105
Cooling fan		29.2					70
Hard disk WD purple		26.8					65
Metallic enclosure		27.1					60
Supplementary information: All temperatures measured with thermocouples; max. ambient operating temperature assumed 40ºC							

Temperature T of winding: --	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
Supplementary information:							

4.5.5	TABLE: Ball pressure test of thermoplastic parts		NA
	Allowed impression diameter (mm) .....: < 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)
Enclosure			
Supplementary information:			

Clause	Requirement - Test	Result - Remark	Verdict

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
please refer to table 1.5					
Supplementary information:					

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional:				
				NA
Basic/supplementary				
Primary – PE		AC	1500	No

5.3	TABLE: Fault condition tests						P
	Ambient temperature (°C).....:						21,0
	Power source for EUT: Manufacturer, model/type, output rating						---
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation	
Middle cooling fan	Lock rotor	240				PASS	
Supplementary information:							

Clause	Requirement - Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1

EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Information technology equipment - Safety -
PART 1: GENERAL REQUIREMENTS

Differences according to.....: EN 60950-1:2006/A11:2009/A1:2010/A12:2011

Attachment Form No .....: EU_GD_IEC60950_1 B II
Attachment Originator.....: SGS Fimko Ltd
Master Attachment .....: Date 2011 -08

EN 60950-1:2006/A11:2009/A1:2010/A12:2011 - CENELEC COMMON MODIFICATIONS

Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Contents	annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions		—
General	Delete all the "country" notes in the reference document(IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 — 1.5.1 Note 2 & 3 — 1.5.7.1 Note 1.5.8 Note 2 — 1.5.9.4 Note — 1.7.2.1 Note 4, 5 & 2.2.3 Note — 2.2.4 Note — 2.3.2 Note 2.3.2.1 Note 2 — 2.3.4 Note 2 — 2.6.3.3 Note 2 & 3 2.7.1 Note — 2.10.3.2 Note 2 — 2.10.5.13 Note 3 3.2.1.1 Note — 3.2.4 Note 3. — 2.5.1 Note 2 4.3.6 Note 1 & 2 — 4.7 Note 4 — 4.7.2.2 Note 4.7.3.1Note 2 — 5.1.7.1 Note 3 & 4 — 5.3.7 Note 1 6 Note 2 & 5 — 6.1.2.1 Note 2 — 6.1.2.2 Note 6.2.2 Note — 6.2.2.1 Note 2 — 6.2.2.2 Note 7.1 Note 3 — 7.2 Note — 7.3 Note 1 & 2 G.2.1 Note 2 — Annex H Note 2		—

Clause	Requirement - Test	Result - Remark	Verdict
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note 2		—
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		NA
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		NA
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC		NA
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		NA
1.7.2.1 (A12.2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		NA
	Zx Protection against excessive sound pressure from personal music players		NA

Clause	Requirement - Test	Result - Remark	Verdict
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipments for personal use, that: - is designed to allow the user to listen to recorded or broadcast sound or video; and - primarily uses headphones or earphones that can be worn in or on or around the ears; and - allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: - while the personal music player is connected to an external amplifier; or - while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: - hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.		NA
	- analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		NA

Clause	Requirement - Test	Result - Remark	Verdict
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: - equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is < 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and - a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is < 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. OTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx.		NA
	All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and		NA
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its listening device), the acoustic output shall be < 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be < 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1.		NA

Clause	Requirement - Test	Result - Remark	Verdict
	For music where the average sound pressure (long term $L_{Aeq,T)}$ measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T)}$ which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		NA
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: - the symbol of Figure 1 with a minimum height of 5 mm; and - the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods." **Figure 1 - Warning label (IEC 60417-6044)** Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		NA
	Zx.4 Requirements for listening devices (headphones and earphones)		NA
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T,}$ the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be > 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA - 75 mV correspond with 85dBA - 27 mV and 100 dBA - 150 mV		NA

Clause	Requirement - Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be < 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		NA
	Zx.4.3 Wireless listening devices In wireless mode: - with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and - respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and - with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be < 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		NA
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		NA
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;		NA

Clause	Requirement - Test	Result - Remark	Verdict
	c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		NA
2.7.2	This subclause has been declared 'void'.		
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		NA
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 | 0,75 [a] | Over 6 up to and including 10| (0,75) [b] 1,0 | Over 10 up to and including 16| (1,0) [c] 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition [a]. In NOTE 1, applicable to Table 3B, delete the second sentence.		NA
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A		NA
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).		NA
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		NA
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 uSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.		NA

Clause	Requirement - Test	Result - Remark	Verdict
Bibliography	Additional EN standards.		—
ZA	**NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS**		—
ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS			
1.2.4.1	In **Denmark,** certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		NA
1.2.13.14	In **Norway** and **Sweden,** for requirements see 1.7.2.1 and 7.3 of this annex.		NA
1.5.7.1	In **Finland, Norway** and **Sweden,** resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		NA
1.5.8	In **Norway,** due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		NA
1.5.9.4	In **Finland, Norway** and **Sweden,** the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		NA

Clause	Requirement - Test	Result - Remark	Verdict
1.7.2.1	In **Finland, Norway** and **Sweden,** CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettava suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet ma tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag" In **Norway** and **Sweden,** the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system.It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing - and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."		NA
	NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.		NA
	Translation to Norwegian (the Swedish text will also be accepted in Norway):		NA
	"Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr - og er tilkoplet et kabel-TV nett, kan forarsake brannfare. For a unnga dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet."		NA
	Translation to Swedish:		NA

Clause	Requirement - Test	Result - Remark	Verdict
	"Utrustning som ar kopplad till skyddsjord via jordat vagguttag och/eller via annan utrustning och samtidigt ar kopplad till kabel-TV nat kan i vissa fall medfora risk for brand. For att undvika detta skall vid anslutning av utrustningen till kabel-TV nat galvanisk isolator finnas mellan utrustningen och kabel-TV natet."		NA
1.7.5	In **Denmark,** socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		NA
2.2.4	In **Norway,** for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		NA
2.3.2	In **Finland, Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		NA
2.3.4	In **Norway,** for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		NA
2.6.3.3	In the **United Kingdom,** the current rating of the circuit shall be taken as 13 A, not 16 A.		NA
2.7.1	In the **United Kingdom,** to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		NA
2.10.5.13	In **Finland, Norway** and **Sweden,** there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		NA

Clause	Requirement - Test	Result - Remark	Verdict
3.2.1.1	In **Switzerland,** supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998:Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE . 250 V,16 A		NA
3.2.1.1	In **Denmark,** supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		NA

Clause	Requirement - Test	Result - Remark	Verdict
3.2.1.1	In **Spain,** supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		NA
3.2.1.1	In the **United Kingdom,** apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		NA
3.2.1.1	In **Denmark,** supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		NA

Clause	Requirement - Test	Result - Remark	Verdict
3.2.1.1	In **Spain,** supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		NA
3.2.1.1	In the **United Kingdom,** apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		NA
3.2.1.1	In **Ireland,** apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		NA
3.2.4	In **Switzerland,** for requirements see 3.2.1.1 of this annex.		NA
3.2.5.1	In the **United Kingdom,** a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.		NA
3.3.4	In the **United Kingdom,** the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.		NA

Clause	Requirement - Test	Result - Remark	Verdict
4.3.6	In the **United Kingdom,** the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		NA
4.3.6	In **Ireland,** DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		NA
5.1.7.1	In **Finland, Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: •STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; •STATIONARY PLUGGABLE EQUIPMENT TYPE B; •STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		NA

Clause	Requirement - Test	Result - Remark	Verdict
	In **Finland, Norway** and **Sweden,** add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.		NA
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).		NA
	It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.		NA
	A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:		NA
	-the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1;		NA
	- the additional testing shall be performed on all the test specimens as described in EN60384-14:		NA
	- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		NA

Clause	Requirement - Test	Result - Remark	Verdict
6.1.2.2	In **Finland, Norway** and **Sweden,** the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		NA
7.2	In **Finland, Norway** and **Sweden,** for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		NA
7.3	In **Norway** and **Sweden,** for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		NA
7.3	In **Norway,** for installation conditions see EN 60728-11:2005.		NA

ATTACHMENT 1 : PHOTO DOCUMENTATION	
DIFFERENT VIEWS OF EUT	
	
Image 1	Image 2

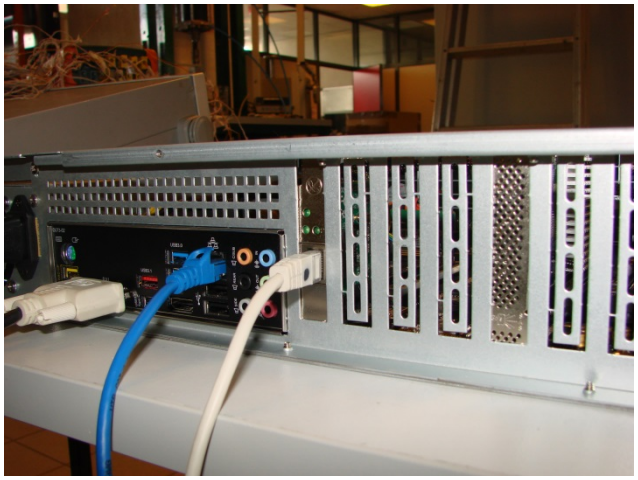



Image 3	Image 4
	
Image 5	Image 6

Image 7

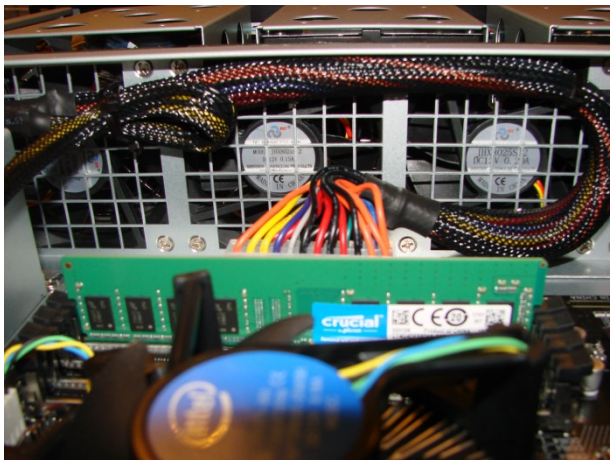


Image 8

Image 9

Image 10

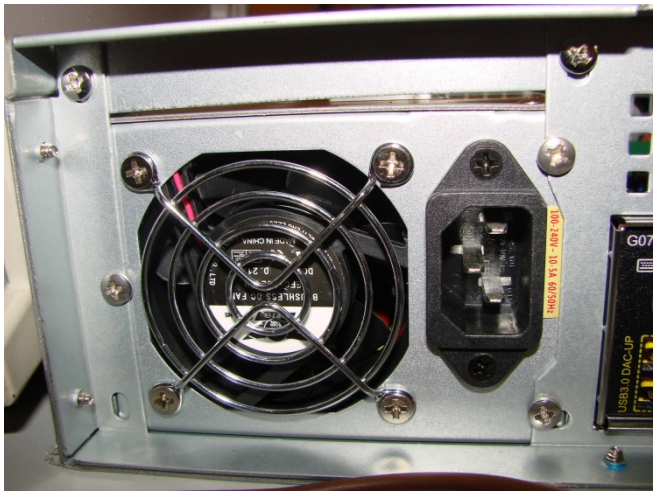


Image 11

Image 12

Cubis Standard

Barebone System for Advanced IP Video Management

Key Features

- Optimized for Cubis Software
- Superior recording capability with the use of up to 8 Internal HDDs
- Perfect airflow for long lasting operation
- Rackmounted, with Raid 5 option
- 2 years warranty

For simple networking of unlimited number of systems and maximum camera inputs up to 128 per system, Cubis Standard can be integrated through multiple systems to provide a single point of administration. Designed and engineered under Cubitech's strict quality assurance procedures, Cubis Standard is the low cost solution for medium to large scale installations.

Features

- Simple networking of unlimited number of NVR systems through Cubis Software
- Maximum camera inputs up to 128 per system
- Multiple systems can work together in a single location
- Easily upgradable
- Easily integrated with Cubis Software centralized monitoring software
- Controlled and configured locally or remotely by Cubis VMS software for unified user experience
- Supports advanced Raid features

VMS Compatibility

The Cubis Standard is designed for optimized integration with all Cubis Software versions and Add-on Modules. With industry wide specifications, Cubis Software complies with the requirements of every type of a security project. With supreme upgradability and scalability, Cubis Software provides a seamless and easy delivery of its supreme capabilities.

Cubis Basic

Cubis Advanced

Cubis Modules

Key Features

- Up to 128 Channels supported
- Dual SSD or M.2 SSD Disk preloaded (depending on model)
- Up to 8 x 8TB HDD capacity
- Raid HDD configuration (levels 0, 1, 10, 1E, and JBOD)
- Optional additional Raid configuration (RAID levels 5, 5EE, 6, 50, 60)
- Maximum effective storage up to 58.2TB (JBOD)
- Door Included
- Rails optional
- 8 Internal bays
- Industrial design
- Rack mounted
- Controlled or configured locally or remotely by Cubis Software
- Fully integrated with all Cubis Cubis Software versions

Specifications

Total Video channels	Up to 128ch
Total Throughput	Up to 960Mbps
LAN card	Up to 2 x1 Gbit
CPU	Up to i7 or Xeon (depending on model)
Memory	4GB up to 16GB (depending on model)
Effective Storage	Up to 58,2TB
Max number of Storage	Internal storage : 2 x M.2 SSD or 2 X SSD (depending on model)
Raid Capability 0, 1, 10, 1E, and JBOD	Yes
Raid Capability 5, 5EE, 6, 10, 50, 60	Option
USB Ports	8 (2x3.0 + 6x2.0)
Hot swap Hdd	No
Network Interface	10M/100M/1000M self-adaptive ethernet interface
Lan port	1
HDMI	1
VGA	1
DVI-D	1
PS/2	1
Audio jacks	6
Operation System	Windows 10 Professional*
VMS	Licence Dongle, 1 Basic or Advanced Server licence and 2 Basic or Advanced Camera licences. For above 16 channels, please choose Advanced Server & Camera licences.

Wallmounted	No
Rackmounted	Yes
Rails	Option
Redundant PSU	Option
Input Voltage	220~240V AC
Size	2U
Weight	12 kg / 26,5 lbs
Dimensions (WxLxH)	437 x 550 x 88.2mm
Warranty	2 years, parts and labor

* It is included

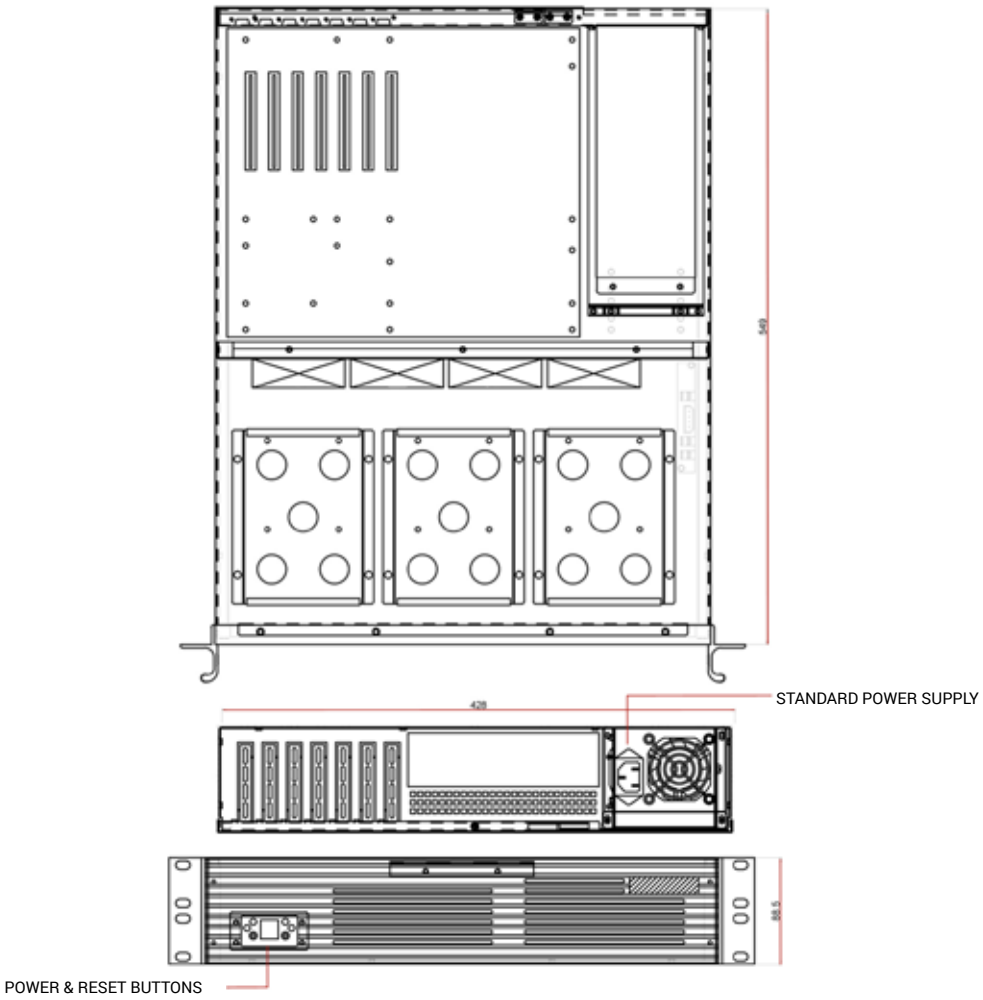
Models

PART No.	MODEL	MAX IP CHANNELS
2120002	CBST-32IP	32
2120003	CBST-64IP	64
2120004	CBST-128IP	128

Accessories

PART No.	MODEL
7056036	Raid 5 Controller
7064016	Ethernet D I/O 8ch
3020046	PCIe Ethernet 1 port
3012158	PCIe Ethernet 4 ports
7033026	M.2 SSD 128GB

Dimensions



Quick User Guide

Cubis Software

October 2017

cubitech

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4-6 Kiprou Str., 177 78 Tavros, Athens, Greece, T.: +30 210 9580888, F.: +30 210 9580885
www.cubitech.com

Contents

Welcome

The User Manual you are holding describes the basic use of a Cubis Server and Cubis Client, which is composed from Cubis Server and the software provided, Cubis Client. Even though you are not obligated to have special knowledge on CCTV systems, this doesn't mean that the User Manual apply to beginners but to people that have basic knowledge of computer systems.

The information provided will help you easily use the program. After you read this User Manual you'll be able to see and hear live or recorded Video and Audio , export footage and perform basic settings on the system.

What is Cubis Software

Cubis Server is the Central Monitoring and Digital recording CCTV station. It can be connected from 4 to 64 cameras, while the internal LAN card or external xDSL modem can multiple the cameras that the system can control, giving the option to monitor even more cameras.

Minimum pc requirements for installing Cubis Software

The minimum pc requirements for installing Cubis client are the following:

PC WITH:

1. Intel® Core™ i3 with 4GB RAM and above.
2. VGA supporting DirectDraw TM .
3. O/S Windows 7, Windows 8, Windows 10, Windows Server 2016
4. Direct X 9.0c Drivers and above.
5. Cubis Client.

Notes

DIRECT X: The DirectX 9.0c drivers are included in the Cubis Client CD.

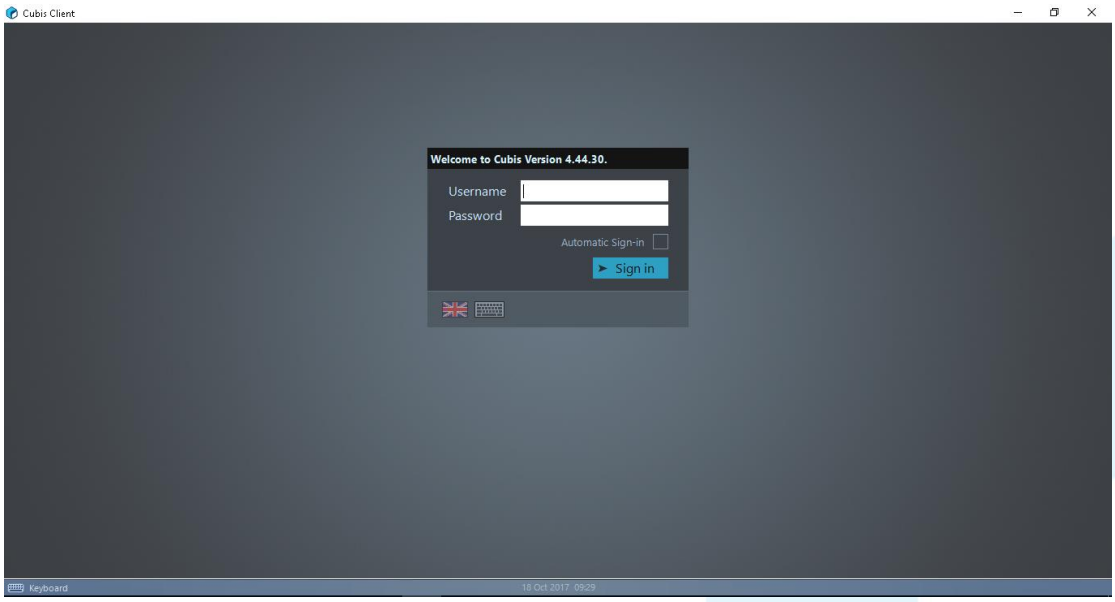
Using Cubis Software

To login to the Client (is included during Server setup process) please use the following credentials.

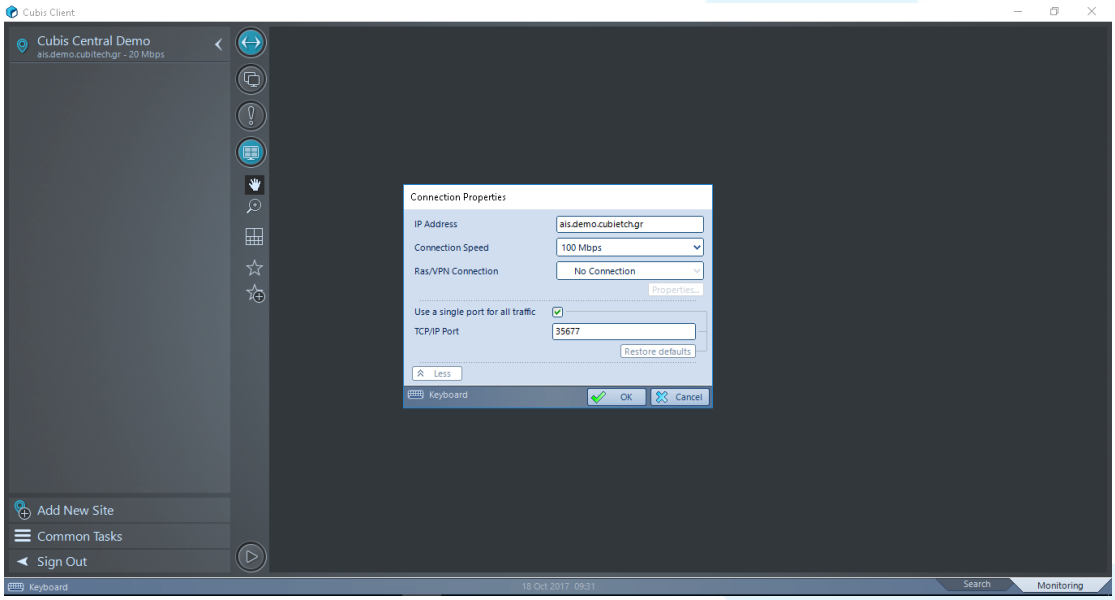
Username: admin

Password: cubitech

1. Type the username and password and click “Sign in”.



2. Click “Add New Site” and use the following details to connect to the server locally.

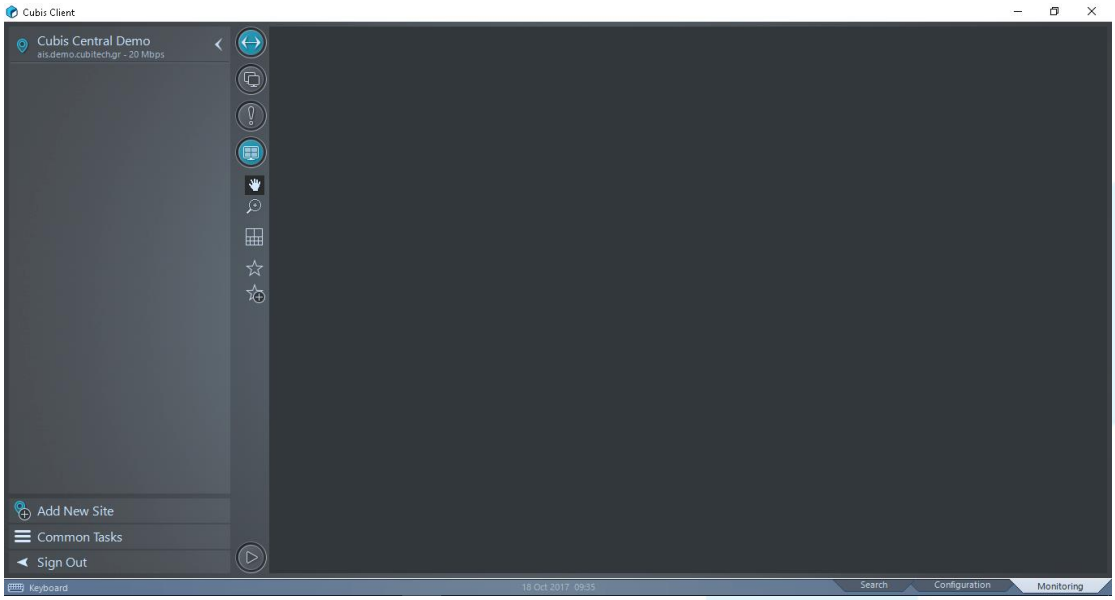


IP Address: Localhost or the Desired DNS that you want to connect

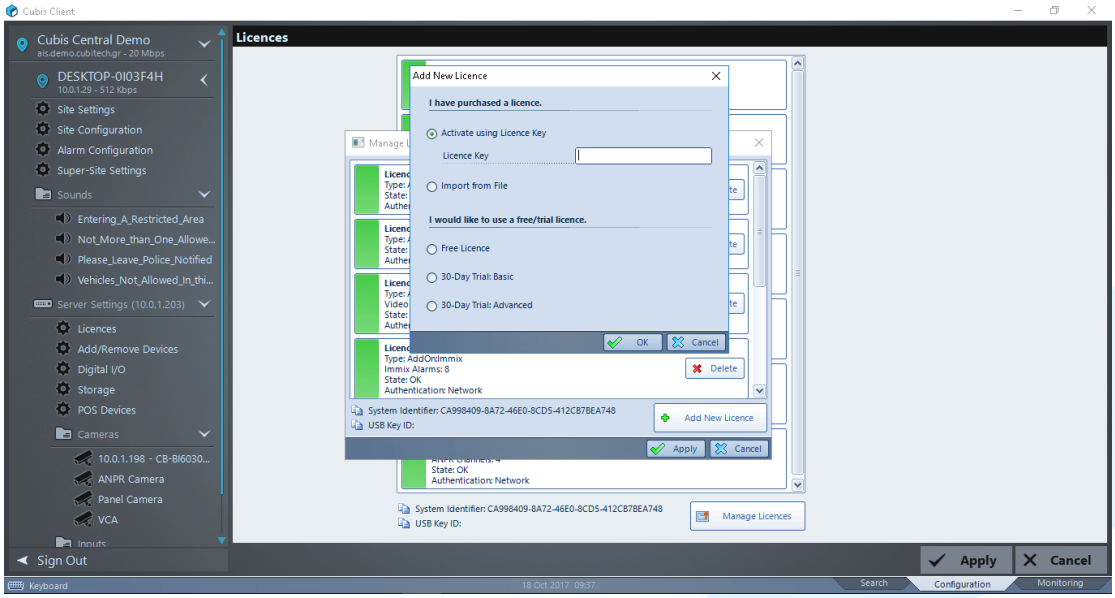
Connection Speed: 100Mbps

Ras/VPN Connection: No Connection

3. You are connected to Server. This is the main view that you can get images from cameras. Cameras will be displayed in “Active Connections”.

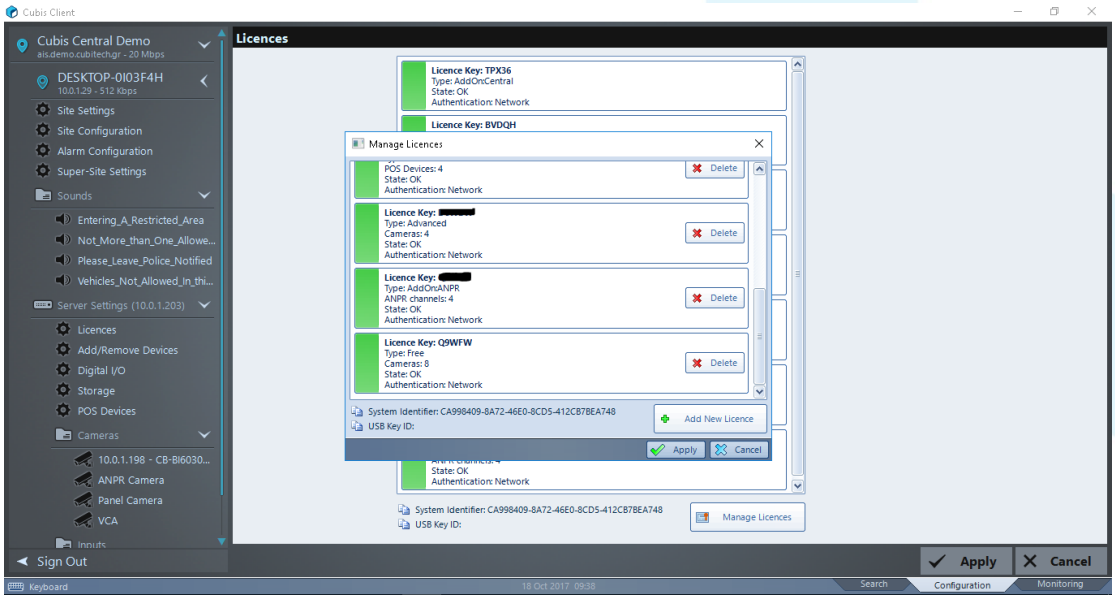


4. Click “Configuration” and then “Licences”.
5. Click “Manage Licences” for the “Manage Licences” windows to appear.
6. Click “Add New Licence” to add your licence or you’re the free licence.

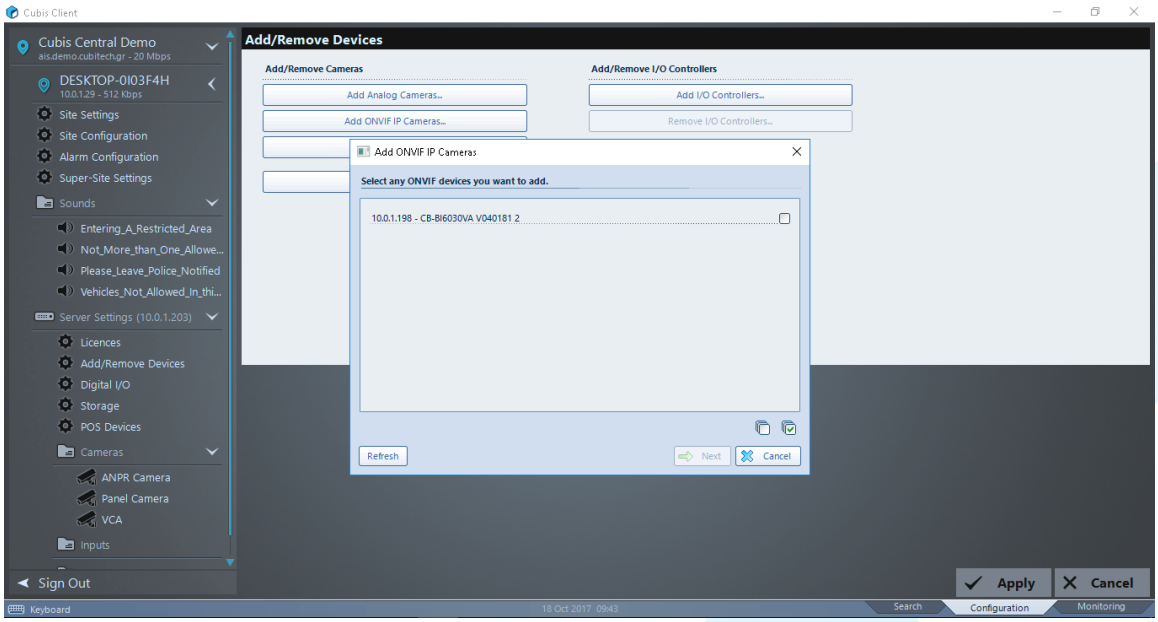


7. Activate your server using the License key you have been provided by your supplier or use any of the Free/Trial licenses Available. Please ensure constant internet connection to ensure license details. Your server must always have Internet connection for License verification. Else you can use a hasp key that can be provided by your supplier. To complete the process click OK

8. Once you have selected your free/trial licence or added the Licence code then the licence details will appear. Click “Add New Licence” to save this licence to the server you are using. You have successfully activated your server.



9. To add cameras and start using the server click “Add ONVIF IP cameras.”. You will be able to scan and add any



Cubitech

Cubis©

User Manual for using Cubis Software

Contents

Contents

0

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The information provided will help you easily use the program. After you read this User Manual you'll be able to see and hear live or recorded Video and Audio[1], export footage and perform basic settings on the system.

What is Cubis Server

Cubis Server is the Central Monitoring and Digital recording CCTV station. It can be connected from 4 to 64 cameras, while the internal LAN card or external xDSL modem can multiple the cameras that the system can control, giving the option to monitor even more cameras.

[1] Since the Server supports audio.

Minimum pc requirements for installing Cubis Software

The minimum pc requirements for installing Cubis client are the following:

PC WITH:

1. Intel® Core™ i3 with 4GB RAM and above.
2. VGA supporting DirectDraw TM .
3. O/S Windows 7, Windows 8, Windows 10, Windows Server 2016
4. Direct X 9.0c Drivers and above.
5. Cubis Client.

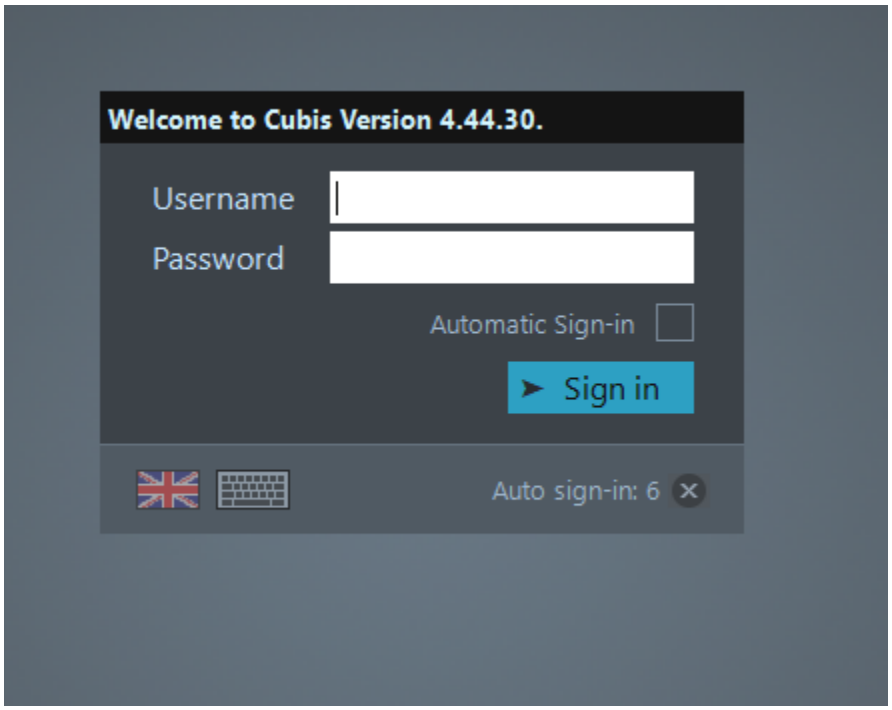
NOTES

DIRECT X

The DirectX 9.0c drivers are included in the Cubis Client CD.

Login

The login screen will be displayed every time you start Cubis Client. To login, type your personal username and password and click Sign in.



The default username and password is:

User Name	:	**admin**
Password	:	**cubitech**

This username and password is strongly suggested to be changed after your first login to the system.
On how to change the username and password please refer to page 37.

If you wish Cubis Client to memorize your login information you will have to select the auto login function. This results to saving the last username and password you have used and to be used without having to enter your login information again.

Notes: The username and password you will enter to Cubis Client will be used for authoring to Cubis server. You can use whatever username and password you wish but in order to connect to Cubis Server you already have to enter your login information to Cubis Server. Either way the access will not be granted.

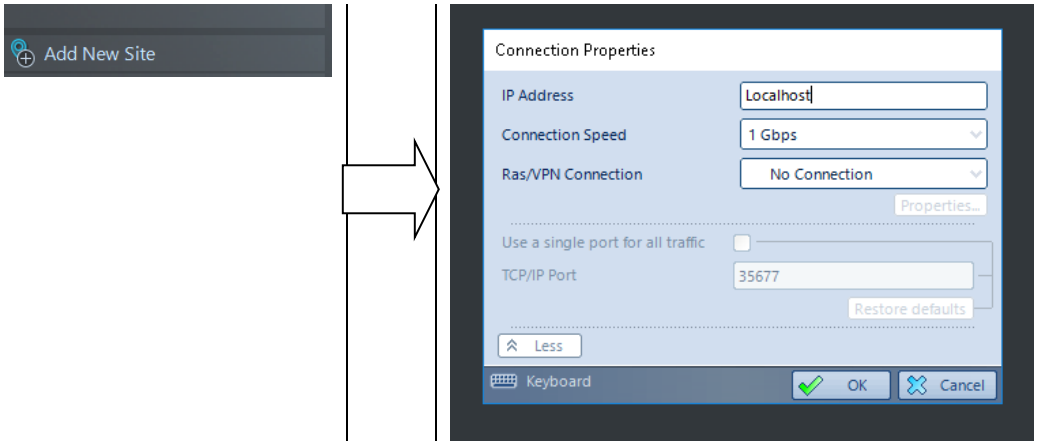
Connect to sites

On the first start of Cubis Client there is no site created. You should create a new and use the remote site connection details to connect.

Creating a new connection for use with LAN

To connect to any Cubis Server you should follow the following precedure:

Start Cubis Client. On the left side of the monitoring screen there is the active connections panel. Right click anywhere there or just click on the New Site button to create a new connection.



The Connection Properties tab is displayed.

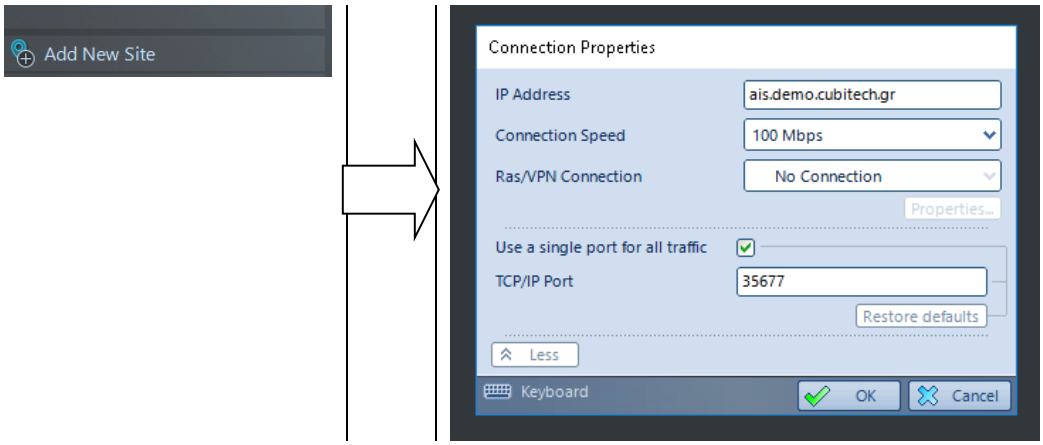
Each connection has a set of properties that you have to setup:

IP Address	:	Enter the IP Address in which the Cubis server is. The format is usually xxx.xxx.xxx.xxx. i.e: 10.0.1.3 or Localhost
Connection speed	:	Enter the true connection speed like 10MBps or 100Mbps. That speed depends from your LAN Speed.
RAS/VPN connection	:	Select No Ras Connection.
Use Single port for all traffic	:	All traffic will be routed from one port only (Default is checked).
TCP/IP Port	:	The port from which all traffic will be routed (Default port is 35677).

Creating a new connection for use with WAN

To connect to Cubis Server using your internet connection you should follow the following procedure:

Ensure that your PC has access to the internet. Start Cubis Client. On the left side of the monitoring screen there is the active connections panel. Right click anywhere there or just click on the New Site button to create a new connection.



The Connection Properties tab is displayed.

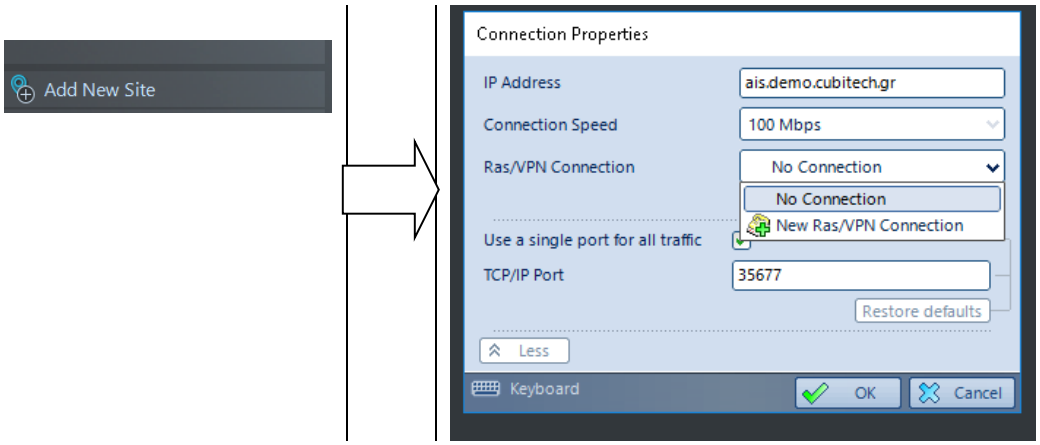
Each connection has a set of properties that you have to setup:

IP Address	:	Enter the IP Address or the DNS Name of your DSL line in which the Cubis server is installed. The format is usually xxx.xxx.xxx.xxx or name.dns.domain i.e: 213.16.179.33 or ais.demo.cubitech.gr.
Connection speed	:	Select the maximum upload speed that xDSL or leased line supports where Cubis server is connected. Usually that speed varies from 128Kbps to 512Kbps.
RAS /VPN connection	:	Select No Ras Connection.
Use Single port for all traffic	:	All traffic will be routed from one port only (Default is checked).
TCP/IP Port	:	The port from which all traffic will be routed (Default port is 35677).

Creating a new connection for use with ISDN

To connect to a Cubis Server using ISDN you should follow the following procedure:

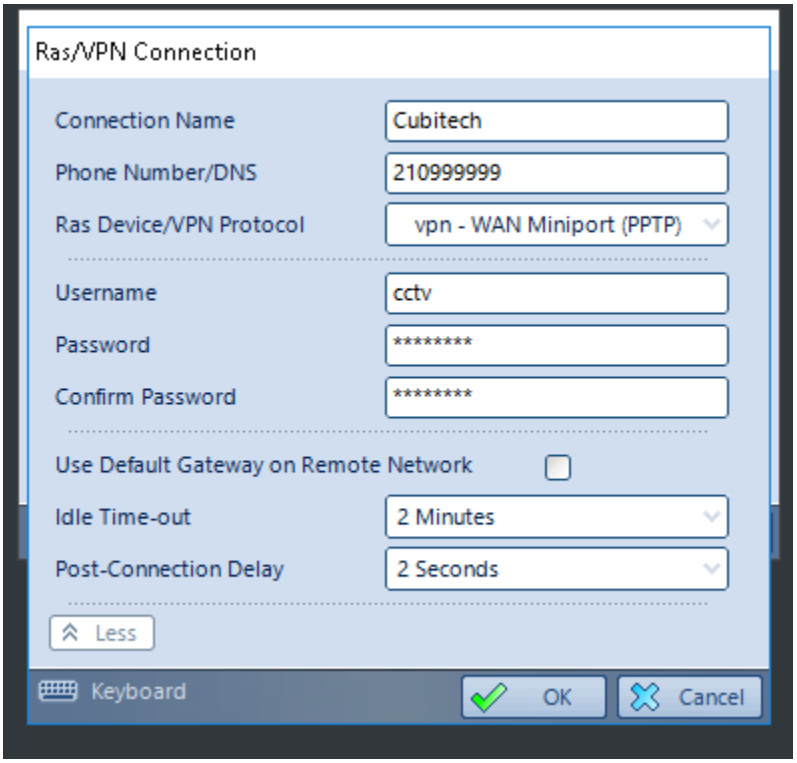
Ensure that your pc has ISDN Modem installed. Start Cubis Client. On the left side of the monitoring screen there is the active connections panel. Right click anywhere there or just click on the New Site button to create a new connection.



The Connection Properties tab is displayed.

Each connection has a set of properties that you have to setup:

IP Address		:	Enter the IP Address 10.1.1.10.
Connection speed		:	Select the 128Kbps. That is the maximum speed ISDN supports when both channels are active
RAS /VPN connection		:	Select New RAS connection. The dialog box for entering the required information to use the ISDN line will appear. Click on More.
	RAS Connection Name	:	Enter a name for the Connection.
	Phone Number	:	Enter the phone number where Cubis Server is installed.
	RAS Device	:	Select the ISDN modem on your PC.
	Username	:	Enter the Username for the dial up. The default is "cctv"
	Password	:	Enter the password for the dial up. The default is "cctv+ 5 last letters from the serial number" i.e. cctvsl570
	Confirm Password	:	Re-write your password.
	Use Default Gateway on Remote Network	:	Select if you have other RAS devices connected on your PC.
	Idle Time-Out	:	Select the time after the connection will drop if not activity.
	Post – Connection Delay	:	Select a time that after the connection is established the Client will attempt a connection to Cubis Server.
Use Single port for all traffic		:	All traffic will be routed from one port only (Default is checked).
TCP/IP Port		:	The port from which all traffic will be routed (Default port is 35677).

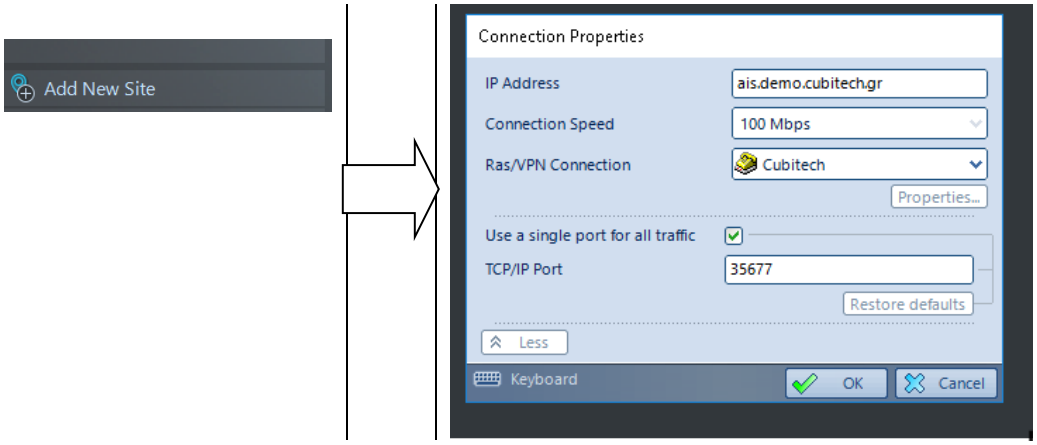


Notes: Cubis server must have an ISDN modem install for this connection type to work properly.

Creating a new connection for use with VPN

To connect to a Cubis Server using VPN you should follow the following procedure:

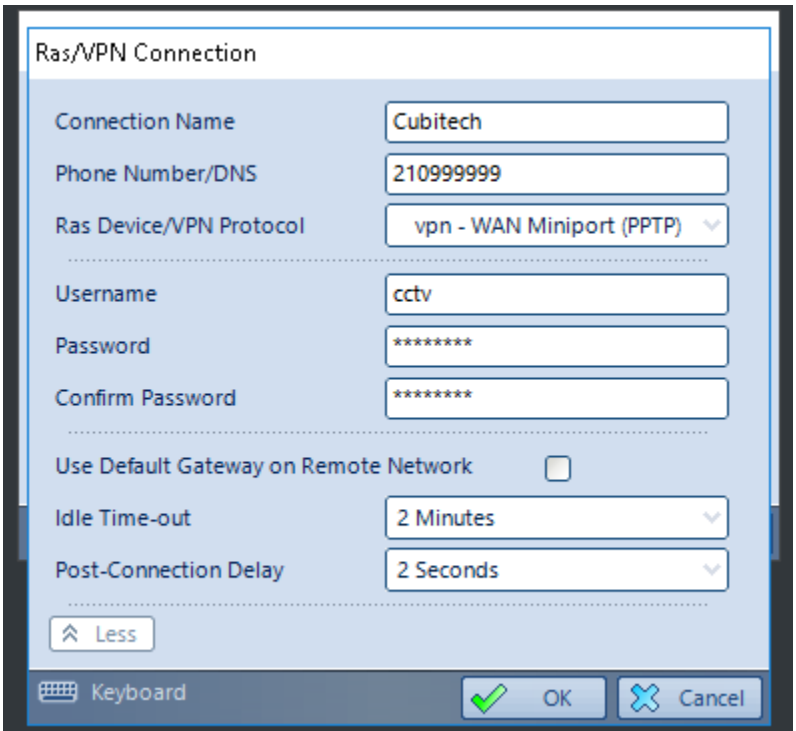
Ensure that your PC has access to the internet your VPN server is running and you have the connection credentials. Start Cubis Client. On the left side of the monitoring screen there is the active connections panel. Right click anywhere there or just click on the New Site button to create a new connection.



The Connection Properties tab is displayed.

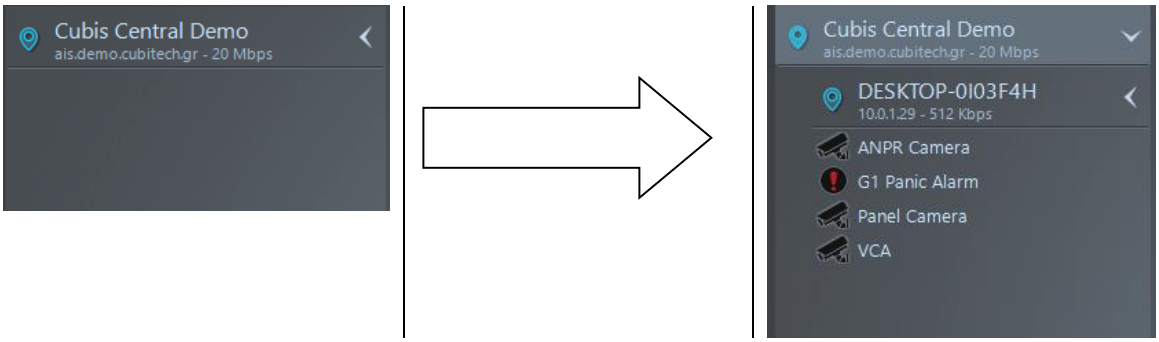
Each connection has a set of properties that you have to setup:

IP Address		:	Enter the IP Address 10.1.1.10.
Connection speed		:	Select the desired speed according to the remote host maximum upload speed.
RAS /VPN connection		:	Select New RAS connection. The dialog box for entering the required information to use a VPN connection. Click on More.
	RAS Connection Name	:	Enter a name for the Connection.
	Phone Number/DNS	:	Enter the IP Address (LAN IP Address) where Cubis Server is installed.
	RAS Device/VPN Protocol	:	Select the VPN Connection set on your PC.
	Username	:	Enter the Username for the VPN Connection.
	Password	:	Enter the Password for the VPN Connection.
	Confirm Password	:	Re-write your password.
	Use Default Gateway on Remote Network	:	Select if you have other RAS devices connected on your PC.
	Idle Time-Out	:	Select the time after the connection will drop if not activity.
	Post – Connection Delay	:	Select a time that after the connection is established the Client will attempt a connection to Cubis Server.
Use Single port for all traffic		:	All traffic will be routed from one port only (Default is checked).
TCP/IP Port		:	The port from which all traffic will be routed (Default port is 35677).



Connecting to a remote system

Connect to your site after having created the new connection.
Click once on the site that appears in the Active Connections panel.

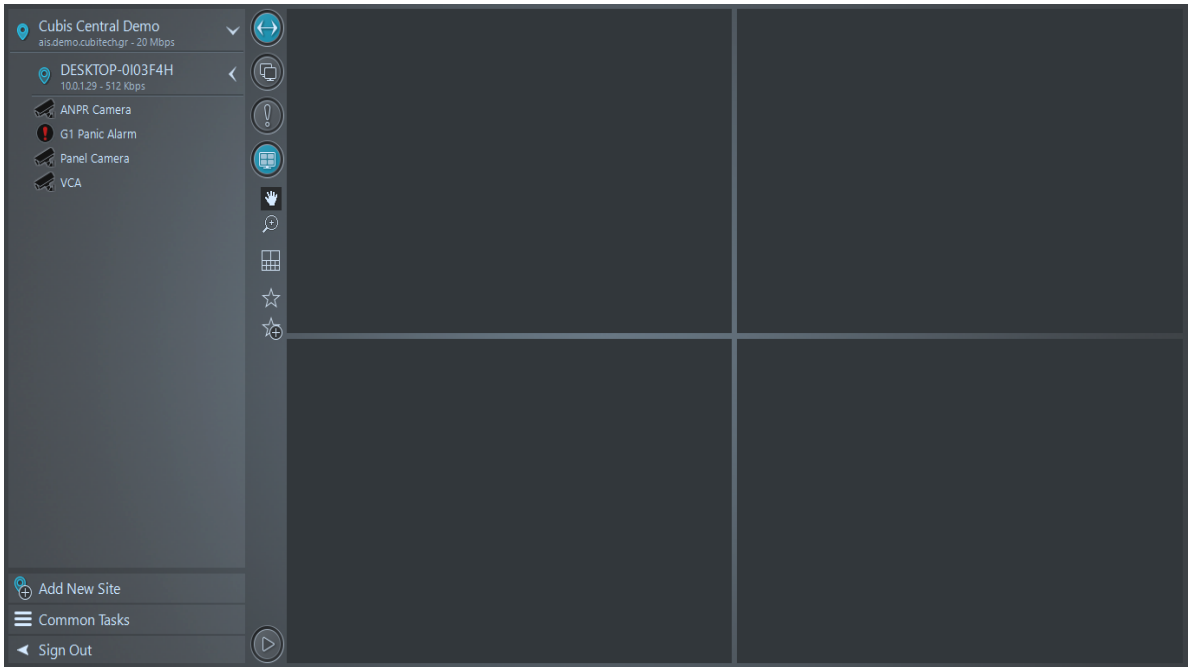


As you can see from the above picture the connected site named Cubis has Three (3) cameras installed.

Camera 1
Camera 2
…..

MONITORING SCREEN

The Monitoring Screen is the tab in which you can live view video, pause live video, export footage by connecting to any Cubis Server. You can monitor from 1 camera (full screen) to 64 cameras in the same time. Some cameras displaying live video other displaying recorded footage. You can see the current time at the bottom centre of Cubis Client and enable the on-screen keyboard by clicking the Keyboard icon on the bottom left corner. At any time, you can sign out by clicking the "Sign Out" button.



Basic Functions

The monitoring screen Tools.

Show/Hide Tree: Hide the active connection and the cameras.

TV-out Control: from this menu you can control the output Display to the External Monitor Device.

A**larm Monitoring:** you can monitor Alarm and export them.

Show/Hide Layout: hide the layout of the cameras.

Selection Tool: Drag and drop cameras or change them position to the layout.

Digital Zoom: Zoom on any camera.

Layout: Set the layout of the cameras and have option to disconnect all cameras from current view.

Favourite: Manage your favourite layout, delete, change the name, and manage your layouts.

Add Favourite: add a new Layout as Favourite.

Add New Site: you can add as many sites as you want to Display.

Common Tasks: Do multiple exports, select the Media Viewer to see exported footage, change the client setting using Client options, check your connection, Setup your Connection to the internet (locally displayed only), request remote assistance or Contact Support.

Sing out: log out of the application, to the Log in screen.

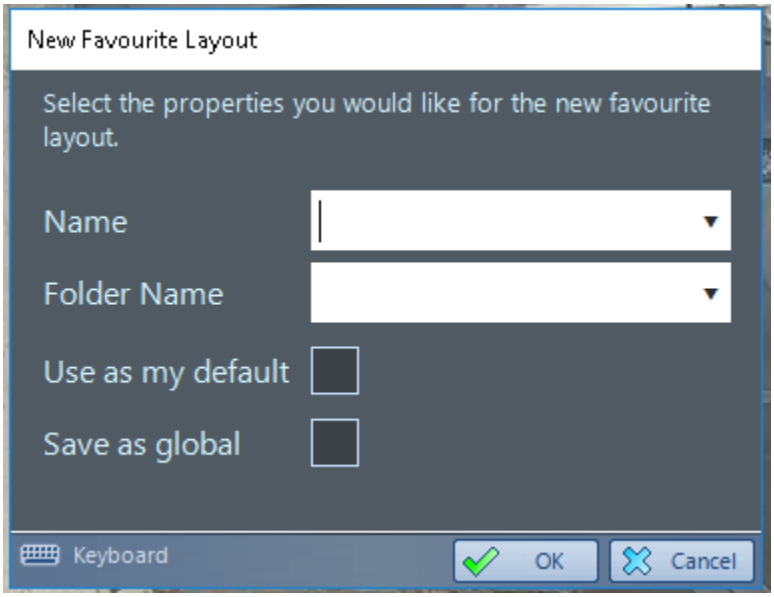
Layout

Select the desired Layout to monitor the camera you wish. The available Layouts are from 1 camera to 36 or 64 cameras simultaneously.

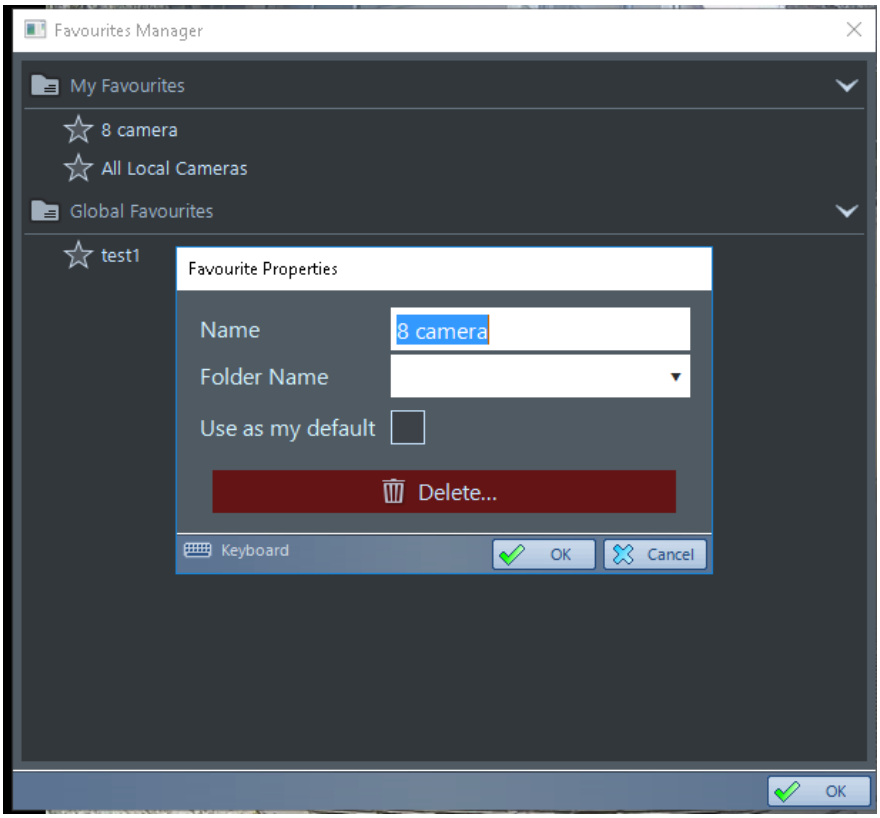
Notes: The performance (camera fps update rate) of the displayed cameras depends on numerous factors like monitor resolution, cpu performance, video performance, lan performance, connection speed.

Add Favourites

Save Current Layout: Open the cameras on the monitor tab you wish to monitor in the desired positions. Click on the Add Favourites. Enter the desired name for this Layout. Type the name of your custom Folder or select an old Folder (if exists) from the drop-down list. Click on the tab "Use this as my default" if you wish this Layout to be displayed every time you start Cubis Client. Click on the tab "Save this as global" to save this layout for all Users of the Cubis client.



Manage Favourites: Another way to manage multiple layouts is from Manage Favourites. The available options are:

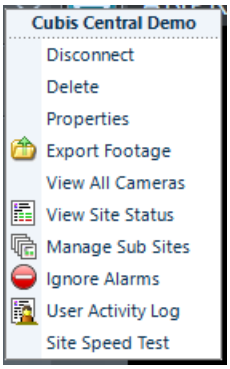


Make Default or Make non-Default: Click on it to enable or disable the use of this Layout as Default during login.
Rename: Rename the Layout you have selected.
Delete: Delete the Layout you have selected.
Custom Group Name : Type the Name for a Custom Group
Group by Site : The Grouping will be done by Each Site name.

Make Default or Make non-Default: Click on it to enable or disable the use of this Layout as default during login.
Rename: Rename the Layout you have selected.
Delete: Delete the Layout you have selected.

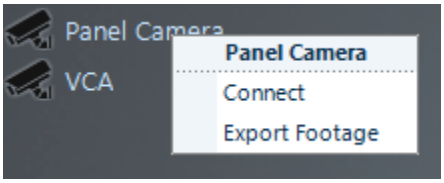
Active Connections

Options on site: Right click on the Site name. The options for the site will appear:



Disconnect – Connect: Click to connect or to disconnect from a site.
Delete: Delete the site from the active Connections.
Properties: Display the connection properties tab.
Export Footage: Export footage from multiple cameras.
View All Cameras: Instant add all the Site cameras to the layout.
View Site Status: Get information about the current Users Connected, DNS name, Server IP Address, S/W Version of the Server, Restarts of the servers in the last 7 days and information about the record status of the cameras.
Manage Sub Sites: remove Sub Sites, Disable or Enable.
Ignore Alarms: Disable all alarms form this Site.
User Activity Log: Display information about each user activity. (Only available to Administrator users)
Site Speed Test: Test the connect between the site and the Server.
Get Update: Update your client to the latest version. (it will be displayed only if the server has a newer version than your client)

Options on Camera: Right click on a camera to display the options available.

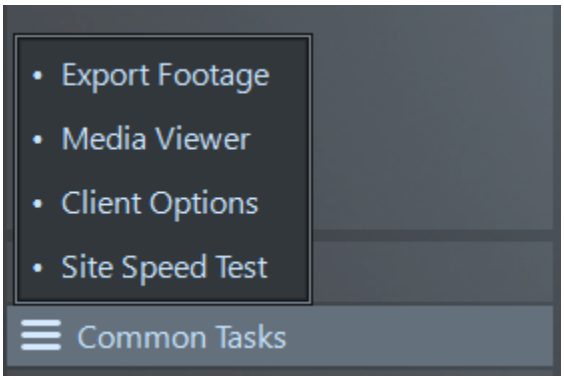


Connect: Click on "Connect" to enable video transmission from the camera to your pc.

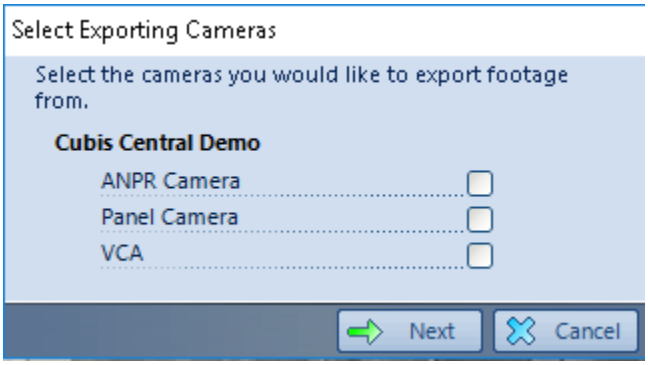
Export Footage: Click to export recorded footage from Cubis Server to your PC.

Common Tasks

Select the Media Viewer to see exported footage, choose the way the cameras should be displayed or do display the contact information for support.

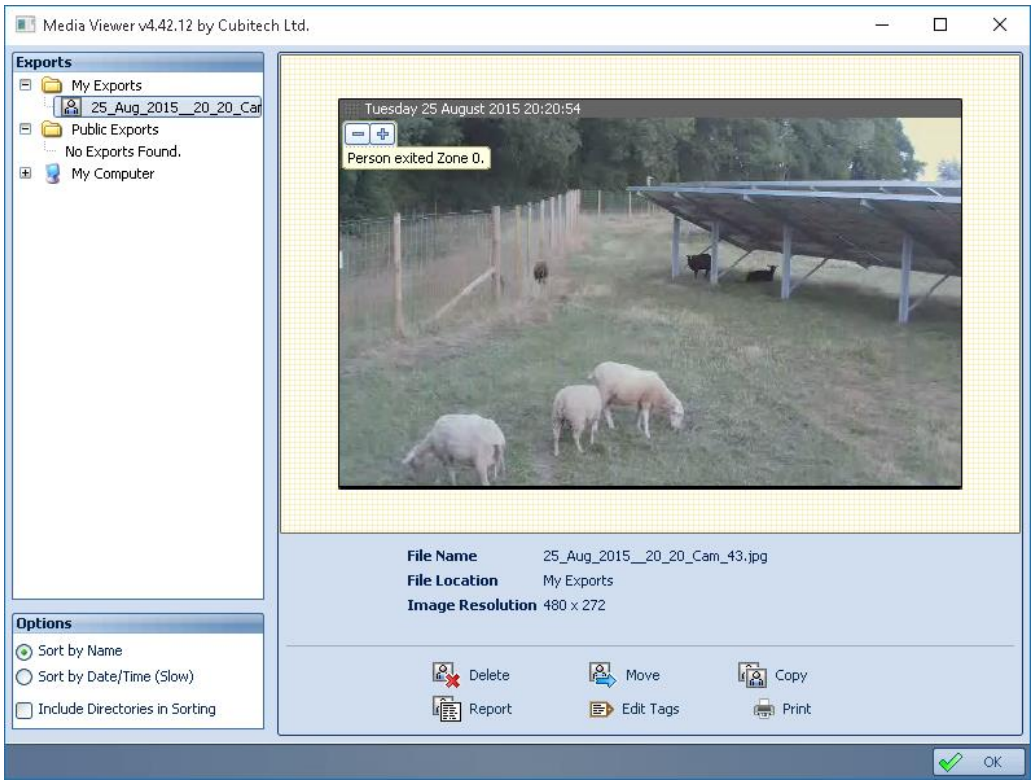


Export Footage: This feature will help you easily export video from multiple cameras in the same time.
Click on export footage to display the camera selection.



Select the camera from which you wish to export simultaneously video and click Next.
The classic video export windows will be displayed. Please refer to video camera export.

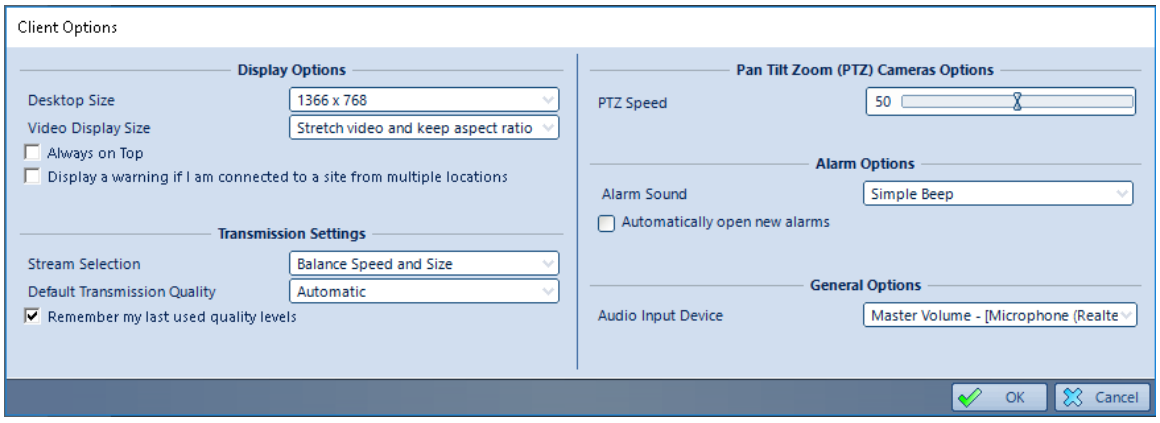
Media Viewer: The Media viewer is the program you can use to see your snapshots and playback any exported video. The snapshots and the exports are distinguished by the icons located on the left of the export name.



The export icon is ( ).
The snapshot icon is ( ).
The attention icon is ( ).

Client Options:

The Client options will give you a list of changes like changing the language for the client, also change the Video Display Size you can made to affect the size of the video camera panel. Change the report options for the exports and setup the Auto-Reconnect function and setup two-way audio.



Display Options		
Desktop Size	:	Change the Resolution of your monitor.
Video Display Size	:	Select if you want the video to be stretch to all available space in the client or to keep the Video Display Size in standard.
Show connection speeds in Active Connections	:	Connection speed will be displayed next to the Site Name on the Active Connections.
Always on Top	:	Set the Client to be on top of all open windows.
Display a Warning	:	Display a warning if I am connected to a site from multiple locations.
Export Report Windows Options		
Show the report window for all completed exports	:	Display report window for all exports
Show the report window only if errors occur during exports.	:	Display report window only in case that an error will occur during export process
Never show the export report windows.	:	The report windows will never be displayed.
Pan Tilt Zoom (PTZ) Cameras Options		
PTZ Speed	:	Move the slider to the desired number to set the speed of movement for the PTZ camera.
Alarm Options		
Alarm Sound	:	Select from 3 different states for the alarm sound notification Silence, Simple Beep, Alert Sound 1.
Automatically open new Alarms	:	Open New alarms automatically when received to a central station.
Transmission Settings		
Stream Selection	:	Select one of the options available to select desired transmission
Default Transmission Quality	:	Select the transmission quality. ***Applies only to CubisNX systems.***
Remember my last used quality levels	:	Save the last used setting applied for quality boost. ***Applies only to CubisNX systems.***
Quality Boost for Priority Cameras	:	Choose the level of boost used for priority cameras. ***Applies only to CubisNX systems.***
General Options		
Audio Input Device	:	Select the audio Input Device for capturing voice and transmitting to the remote side (Server Side).

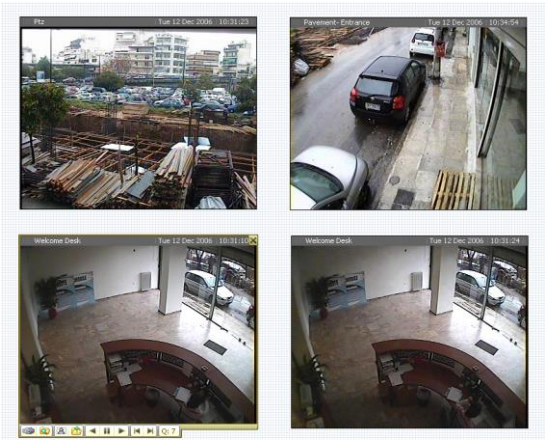
Print List of Alarms: Print selected list of alarms.

Virtual Keyboard

On the bottom left corner you will find the on screen keyboard (Keyboard). The on screen keyboard will help you setup the system and write any text you wish. The Virtual Keyboard language selection will give you the option to choose between English and Greek layout.

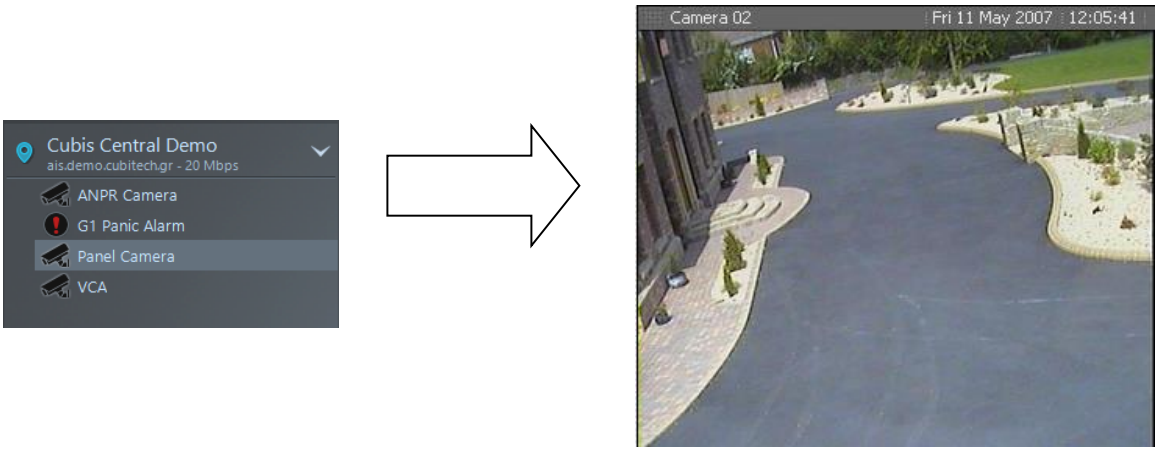
Camera Panel

You can use the camera panel to monitor cameras from multiple Cubis Servers



Connect to a camera for live monitoring

To see live video from a camera, click on the camera you wish from the active connections. The camera will start to display live video on the camera panel.



Controlling a Camera

Once you click on a camera on the active connections panel the camera will start to display live video. Move your mouse over the live video to display the camera controls.

: Live Audio

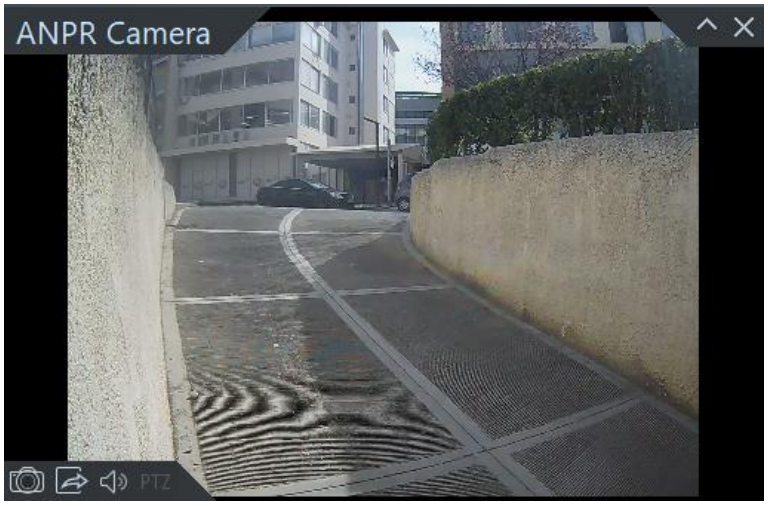
: Take a Snapshot

: Export Footage

: Maximize Screen

: Close Camera

: Call Pre-sets

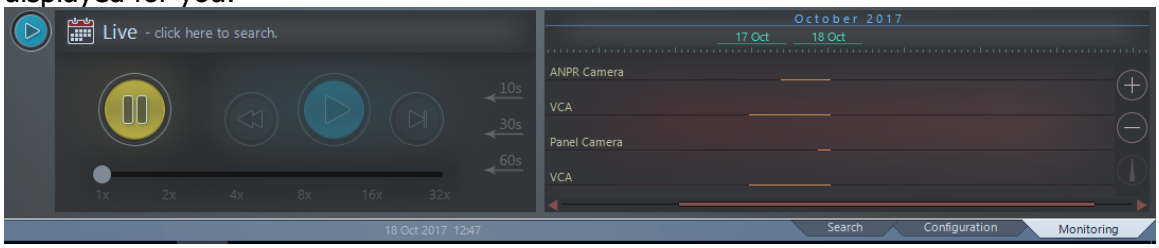


Live Audio

You can hear to the audio at any time simply by pressing the live audio button  .

Archive footage

To search for archive video from a specific camera just click on the search button () located on the Tools at the bottom of the screen. The search for archive will be displayed for you:



Using your mouse, click on the desired recording date, select the time you wish to start the playback by moving the bar on the timetable. The green refers to the video which is set with time lapse recording whereas the orange refers to motion detection recording.

Once you select the time, the playback will start automatically.

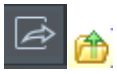
During the playback your control buttons are the following:

The playback will start from the point you choose. If the camera is set to record only with motion detection, please consider that there will be blanks on the recording during the time there was no motion detected on the camera.

Export Video

The export can be done with two ways. Either by camera or from multiple cameras.

By Camera

Select the camera from which you wish to export video. Click on the export button  . The export guide will start.

Step 1: Choose the exact date and time you wish the export to start. In the example we have selected Tuesday, 08 May 2012, 09:55:37

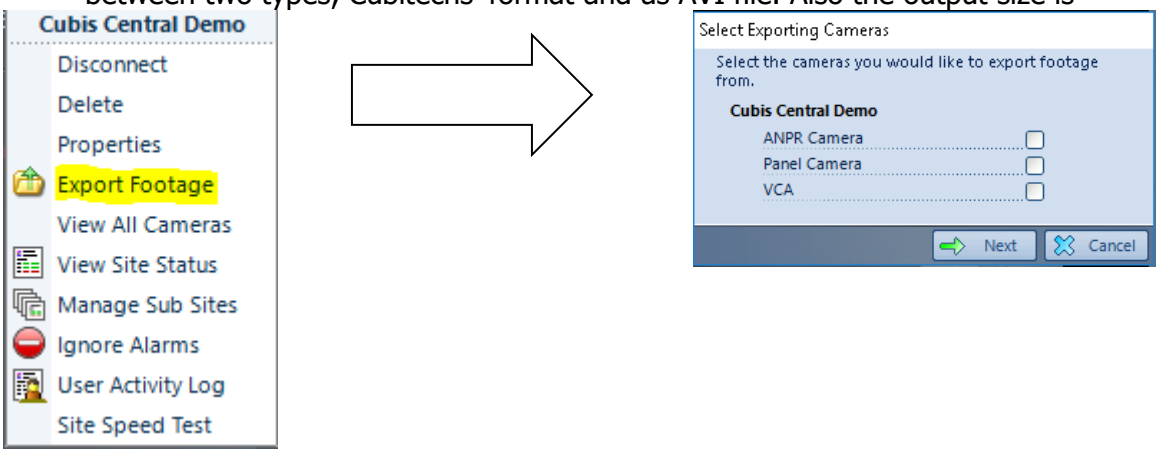
Step 2 : Set the export duration. In this example the duration is set to 30 seconds. Click next.

Step 3: Type the name for this export. The default name suggested by the export guide is the date and time stamp of the export.

Step 4: Choose where you want the export to be saved.

Step 5: Choose the type of file you wish to export the video. You can choose

between two types, Cubitechs' format and as AVI file. Also the output size is



much smaller than AVI. The file type AVI can be played in most of the PC using Windows.

Step 6 : Choose if you want to include archive audio footage to your exported video.

Multiple Export

1. To start a multiple export the procedure is almost the same like export from a single camera. The difference is that you can start the multiple export using the button that exists in the Common tasks. Click on Multiple export and select the cameras you wish to do a multiple export.

Follow the above guide to finish the multiple exports.

CONFIGURATION

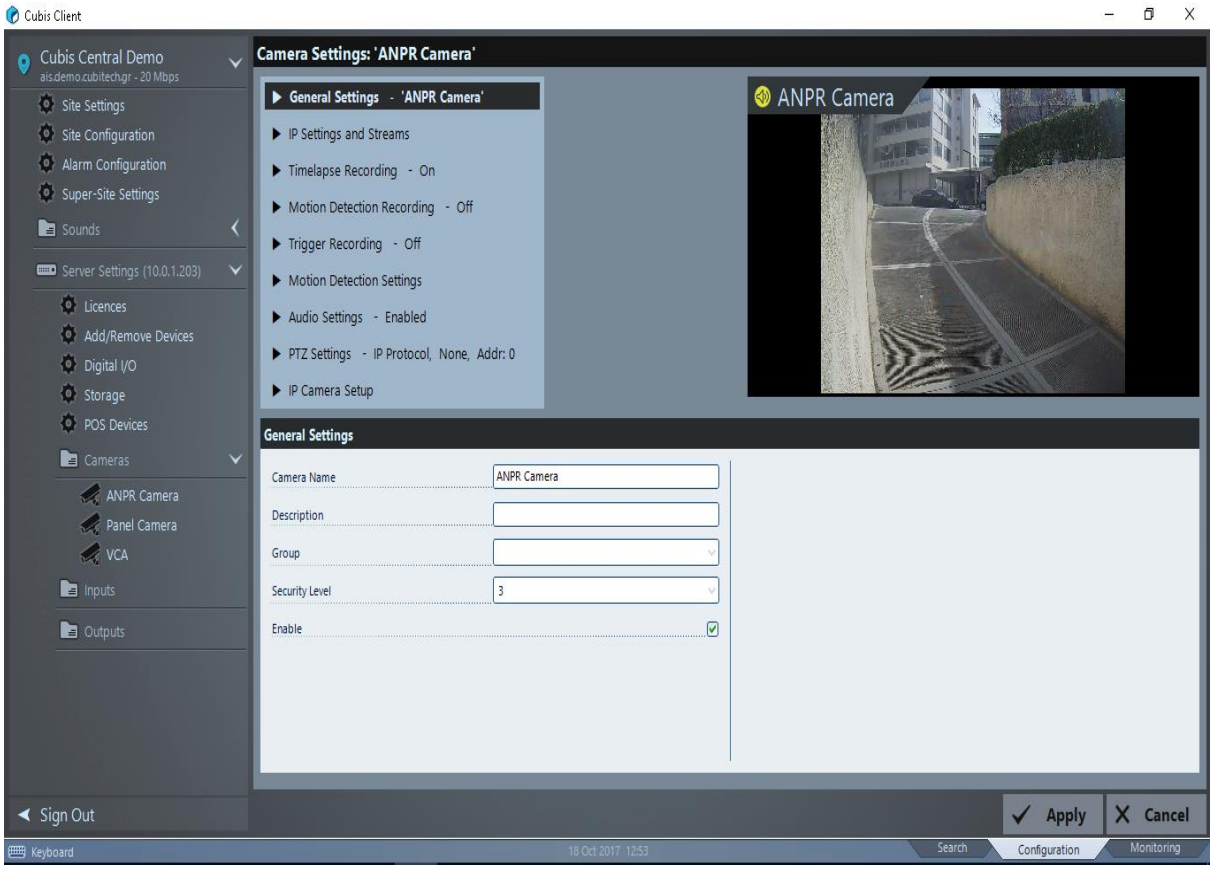
The configuration will help you setup the system according to your needs.

Accessing the configuration

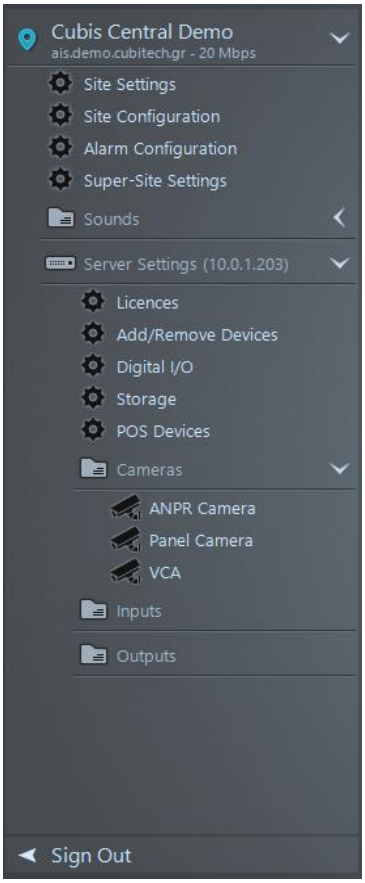
In order to access the configuration you must have configuration access.
To enter the configuration click on the bottom right corner the tab configuration.

About the configuration

The configuration is divided to two parts. On the left you can access the menu of the configuration whereas on the right you can make the changes.



Selecting cameras in the configuration



On the top it is displayed the system in which you are going to make any changes. In this example we are connected to system **CUBIS.**

Site Settings: You can change the Site information add or remove users and change DNS name and Central site connection.
Site Configuration: Change the IP of the system (only local) the date and time of the system and load the customisation.
Alarm Configuration: Create alarms triggered from video loss, External inputs or from video motion.
Add/Remove Cameras: Remove or Add cameras.
Digital I/O: Configure the Digital Inputs and Outputs.
Storage: Allocate and change the storage space for each camera.
Cameras: Camera 1... Camera 32. Change the settings for each camera.

Simply by clicking on each of the above the settings will appear on the right side of the screen.

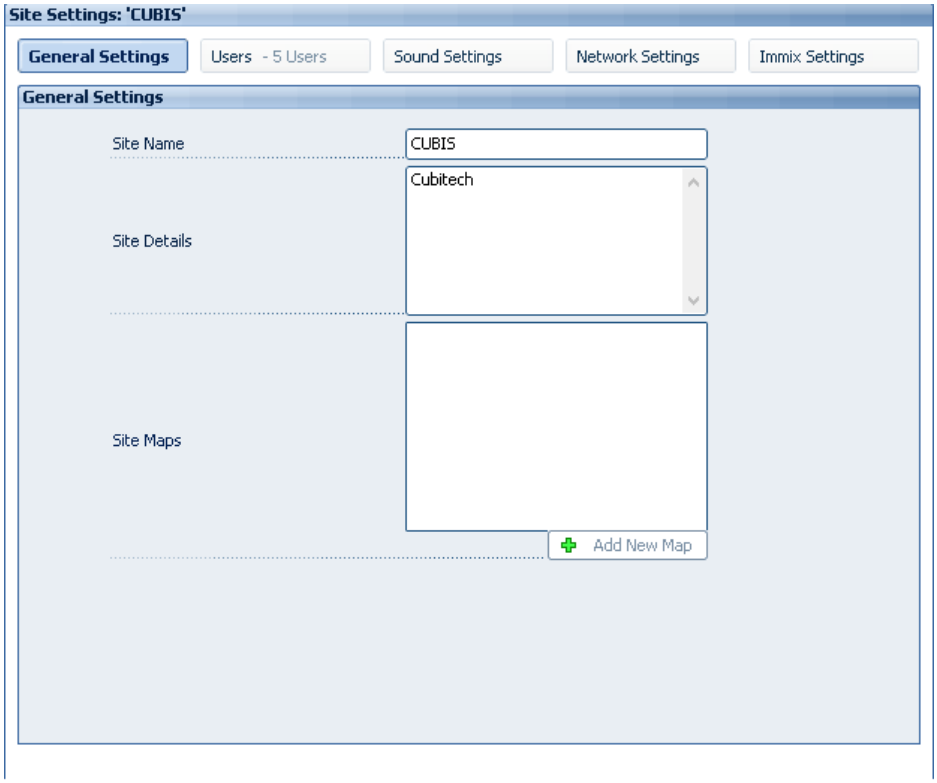
Site Settings

In the Site Settings you can access to the General Settings , Users and also Network Settings.

General Settings	–	General information about the Server
Users	–	User Management
Sound Settings	–	Setup sounds for local plyback
Network Settings	–	DYNDNS and settings for Connecting to Cubis Central
Immix Settings	–	Setup the seetings for Immix server

General Settings

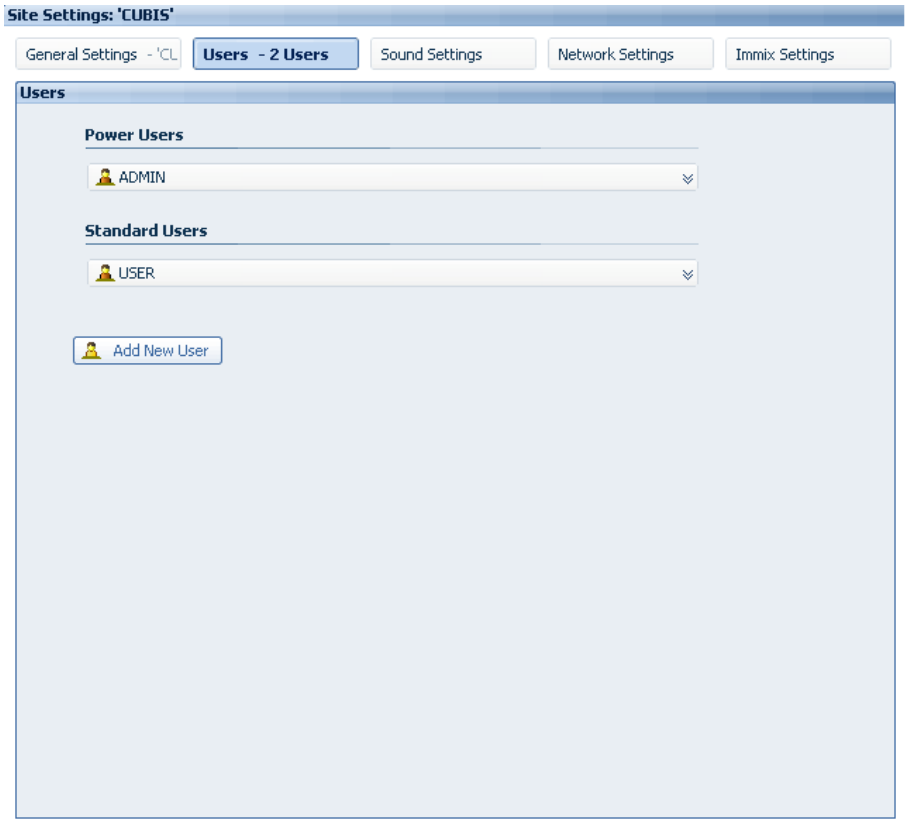
You can change the Site Name to what you desire. Also on the Site details type any description you want for Cubis Server.



Site Name	:	Set a name for the Site
Site Details	:	Type any description for the site
Site Maps	:	Add an image of your installation

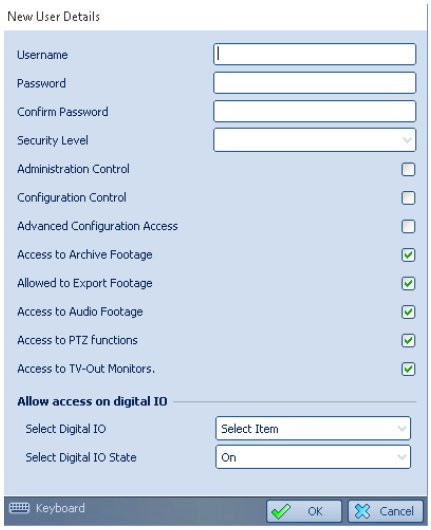
Users

On the user settings you can add or delete users change password or event change the rights for each one.



Add new user – Access levels

To add a new user click on the button Add New User. The following screen will appear in the Cubis Client:



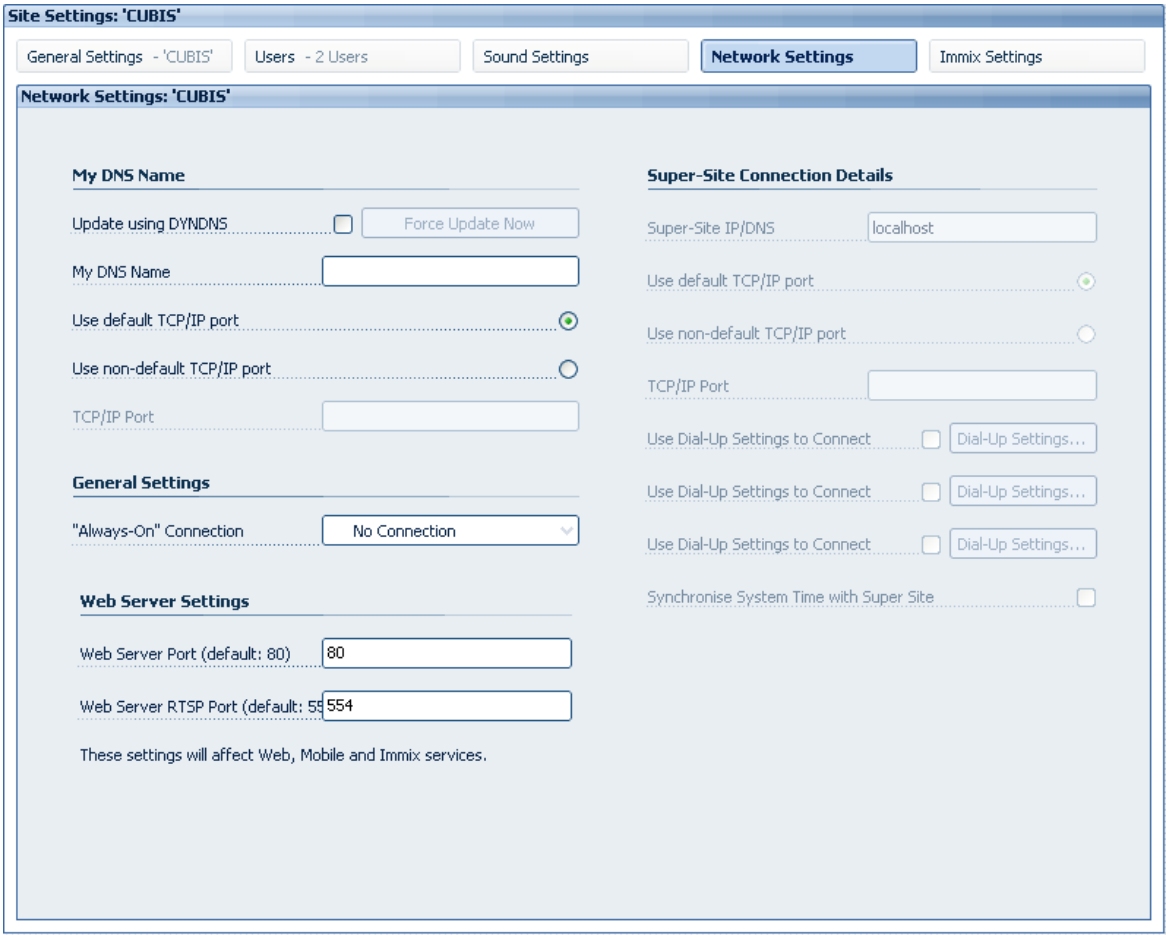
USERS		
Username	:	Enter the desired username for the user. i.e. *Cubis*.
Password	:	Enter the desired password.
Confirm password	:	Enter the password again.
Security Level	:	Choose the security level for the user.
Administration Control	:	Grant access to the user for administration settings.
Configuration Control	:	Grant access to the user for Configuration of Cubis Software.
Advanced Configuration access	:	Grant access to the user for advanced configuration rights.
Access to Archive Footage	:	Grant access to the user to access archive footage.
Allowed to Export Footage	:	Grant access to the user to export archive footage.
Access to Audio Footage	:	Grant access to the user for live and archive footage of audio.
Access to TV-Out Monitors	:	Grant access to the user of the Tv-Out controls.
Access to PTZ functions	:	Grant access to the user of the PTZ controls.
Allow Access on Digital IO	:	Grand access to use according to the Digital I/O State.
Select Digital IO	:	Select the Digital IO you wish to use for the controlling access.
Select Digital IO State	:	Select the state in which the access will be denied.

Delete a user

To delete a user select the user configuration screen. Select the user and click on Delete User button.

Network Settings

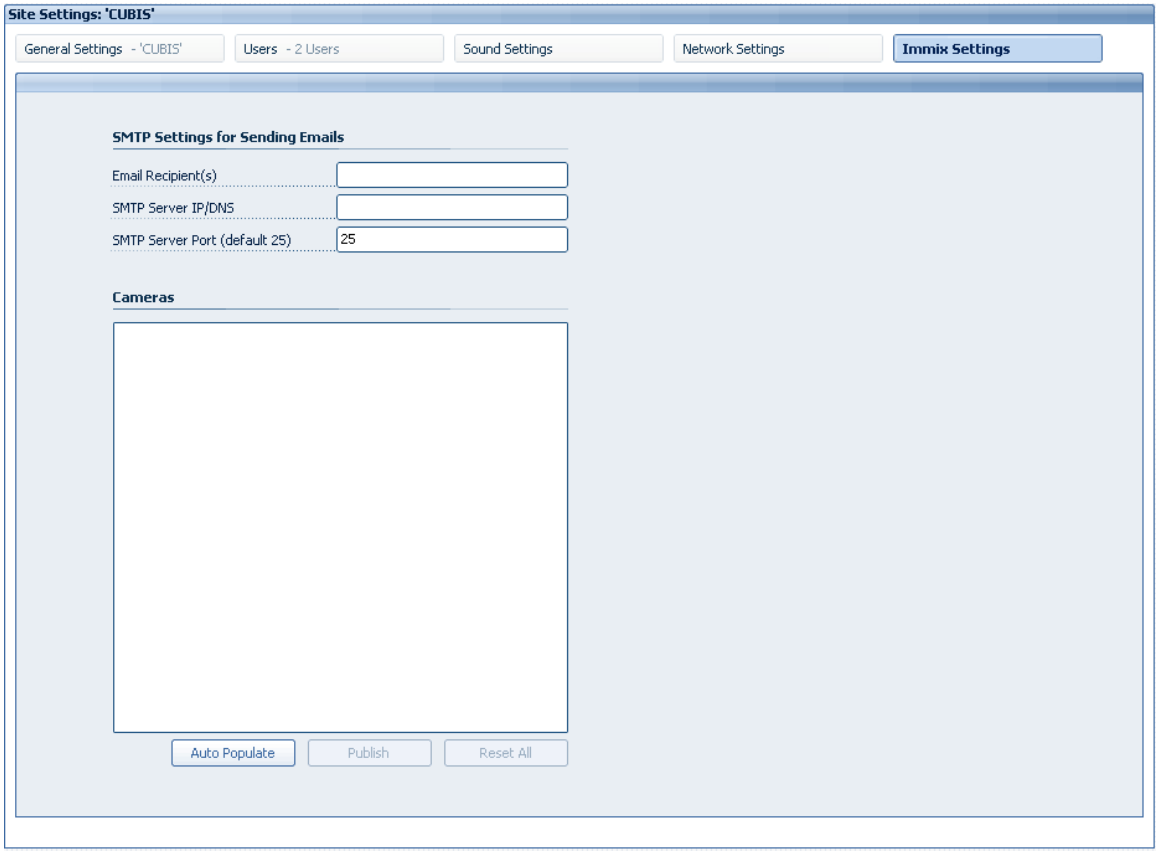
At the network settings you can easily set an account for use with Cubitech' DynDns Service and also make all the appropriate settings for connecting a Cubis to a CubisCentral.



DNS Name		
Update Using DYNDNS	:	Click this tab to enable update with DynDns.
Force Update Now	:	Select this to make a Force Update. Note that if too many Force updates happen the Server will report an Abuse. Only Use when all settings are correct.
My DNS Name	:	Type in your DNS Name for use with cubitech.gr domain. Please contact Cubitech or your local representative for enabling the Cubitech DYNDNS account. In case that you already have a Cubitech DNS name type the full name in the box.
Use Default TCP/IP port	:	Use the default port for transmitting images.
Use non-default TCP/IP port	:	Use custom port for transmitting images.
Super-Site Connection Details		
Super-Site IP/DNS	:	Type the IP Address or the DNS of CubisCentral.
Use default TCP/IP port	:	Use the default port for connecting to a CubisCentral.
Use non-default TCP/IP port	:	Use a custom port for connecting to a CubisCentral.
Use Dial-Up Settings to Connect	:	In case of your xDSL, leased line fails to send the alarms to the Cubis Central a Dial-Up connection can be started for sending the signals. The CubisCentral must also support this function.
Synchronize System Time with Super Site	:	Select this if you want your Cubis Server time to synchronize with the time of the CubisCentral.
General Settings		
"Always-On Connection	:	Create a connection that will always be connected to a Cubis Central Server.

ImmixSettings

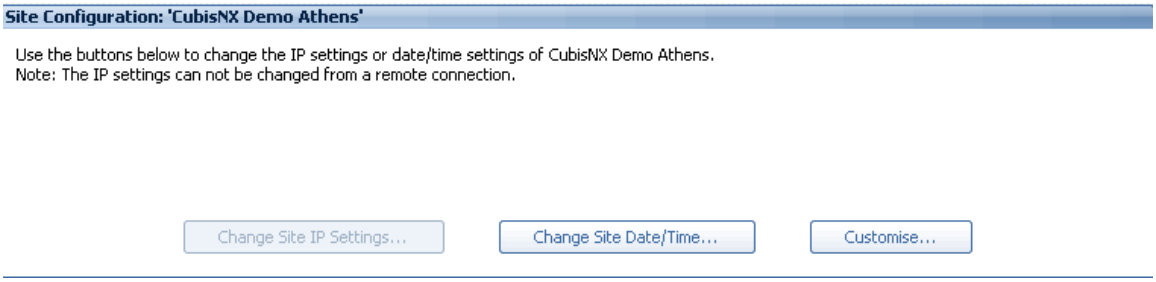
Setup the immix settings for the connection to the Immix server



SMTP Settings for Sending Emails		
Email Recipients(s)	:	Type the email address containinh the S ID. i.e S1000@immixalarms.com
SMTP Server IP/DNS	:	Type the email server IP or DNS address
SMTP Server port (default 25)	:	Type the port of the SMTP Server
		Cameras
Cameras Panel	:	Drag n' drop the cameras from the active connections.
Auto populate	:	Add all cameras to the Immix cameras list
Publish	:	Publish the cameras to Immix alarms
Reset All	:	Delete all cameras from Immix list and unpublish

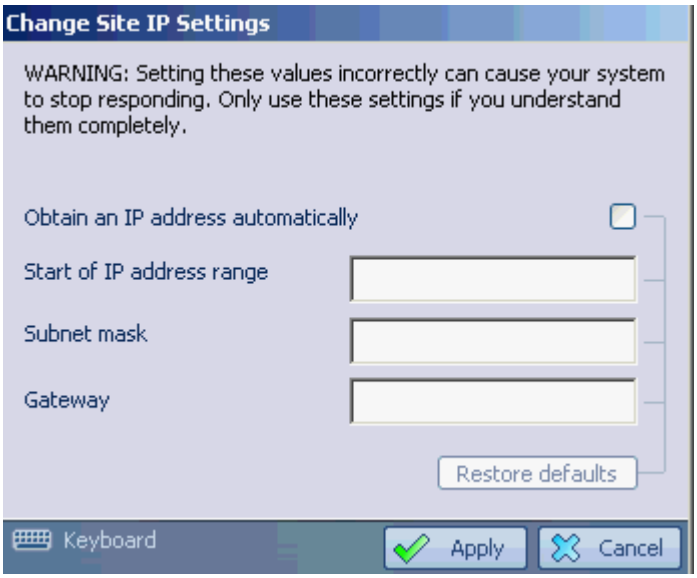
Site Configuration

The Site Configuration you can change the IP configuration of the Cubis Server, set a new date/time and enter a Customisation code (for installers only).



Change Site IP Settings

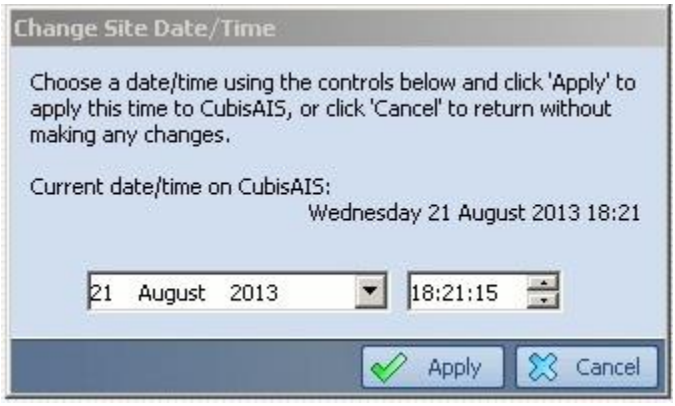
The "Change Site IP Settings" will allow you to change the IP settings of your Cubis Server. This option is available only Locally.



Obtain an IP address automatically	:	Click this tab to obtain an IP address automatically
Start of IP address range	:	Type the IP address you want to assign to the Cubis Server. If there are slave Systems on the LAN the Master Cubis server will assign them the IP address automatically according to the IP address of the Master. i.e One system installation 192.168.1.10 Master-Slave installation Master :192.168.1.10 Slave 1: 192.168.1.11 Slave 2: 192.168.1.12
Subnet mask	:	Type the Subnet mask i.e 255.255.255.0
Gateway	:	Type the IP Address of your Gateway.

Change Site Date/Time

The "Change Site Date/Time" will allow you to change the date and time of your Cubis server. Use the drop down list button to choose the Date and the navigation buttons to change the time.



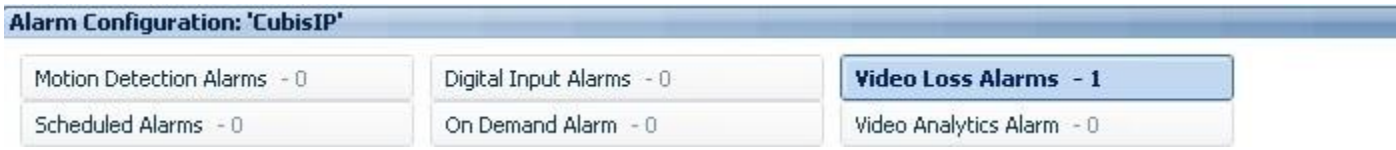
Notes: In case that you change the date or time backwards then the system will stop recording until the last recorded image time is the same with the time you have set.

Alarm Configuration

The alarm configuration screen allows you to enable and change settings for the Video alarms that will be sent to a Cubis Central Station. The alarms are distinguished to 3 categories. The alarms caused by Motion detection, Video Loss and Digital Input.

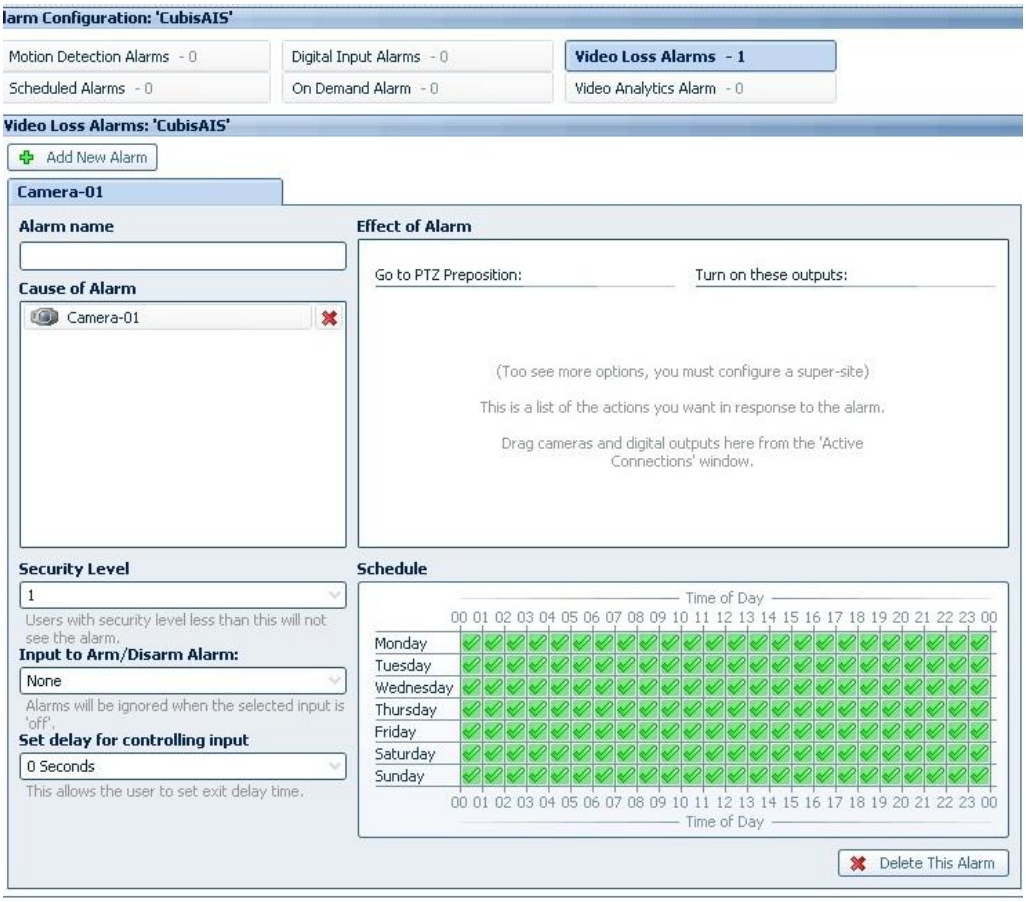
Setting up the alarms

To setup an alarm click on "Alarm Configuration" in the Active Connection Panel of the Configuration tab. Select the type of the alarm you want to create ,"Motion Detection Alarms", "Digital Input Alarms", "Video Loss Alarms", "Scheduled Alarms", "On Demand Alarm", "Video Analytics Alarm" and click 



Creating an alarm

After you have setup the basic for the alarm you can create a new alarm. When the  button is pressed the following will appear.



This is the main page for creating the alarms.
Drag and drop the camera from the Active Connection Panel to the Cause of Alarm that you want to trigger the alarm and send alarms to a CubisCentral Station. At this point you can add more than one camera that you want to trigger a specific alarm.
The camera names you have dragged and dropped will appear in the list of "Cause of Alarm".

Then the "Effect of Alarm" must be setup.

Effect of Alarm

Store Alarm Footage	:	Drag n Drop cameras that you want to store alarm footage when the alarm is triggered.
Transmit Live From	:	Drag n Drop cameras that you want to Transmit Live Video the CubisCentral Station.
Send email Alerts	:	Type the email that you want to send the event of the triggered alarm or just a notification that an alarm has occurred.

Turn on these outputs	:	If you want to enable an Output you have to Drag n Drop the configured output from the active connection.
Go to PTZ Preposition	:	If there is a PTZ camera configured, Drag n Drop the specific PTZ camera that you want to enable a Preposition and select the Preposition.

Security level

Set the Security level for this Alarm. Users that have less security than the alarm will not be able to access the event of the alarm.

Input to Arm/Disarm Alarm

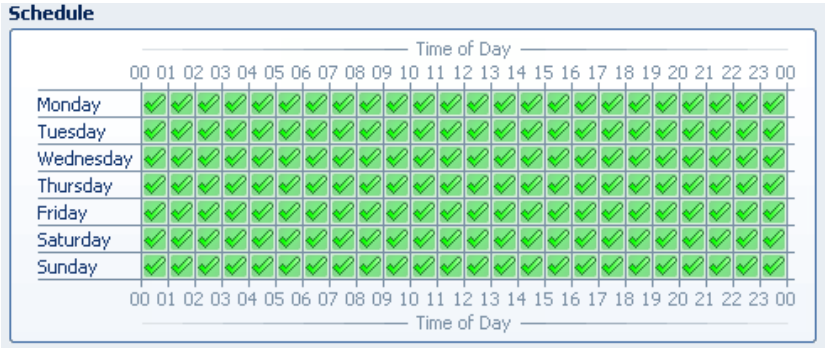
Select an input from the drop down list to control the alarms.
In case that an input is selected and the state of the input is "Off" then the alarms will be ignored and will not be sent to the CubisCentral station.
When the input status is changed to "On" the alarms will be sent accordingly to the Schedule set.

Set delay for controlling input

When a digital input is activated, we can set an extra delay time before server will generate an alarm.

Schedule

For setting up a schedule when the alarms will be activated or not you can use the following weekly schedule.



Super-Site Settings

Description and licences when enabled

Licences

Description of licences

Add/Remove Devices

In this menu you can Add cameras remove cameras and save space on the Hard Disk Drive.

Add Analog Cameras...

Add Analog cameras to you Cubis system click on "Add Cameras..." button. And select the desired number of cameras you wish to add.

Add ONVIF IP Cameras...

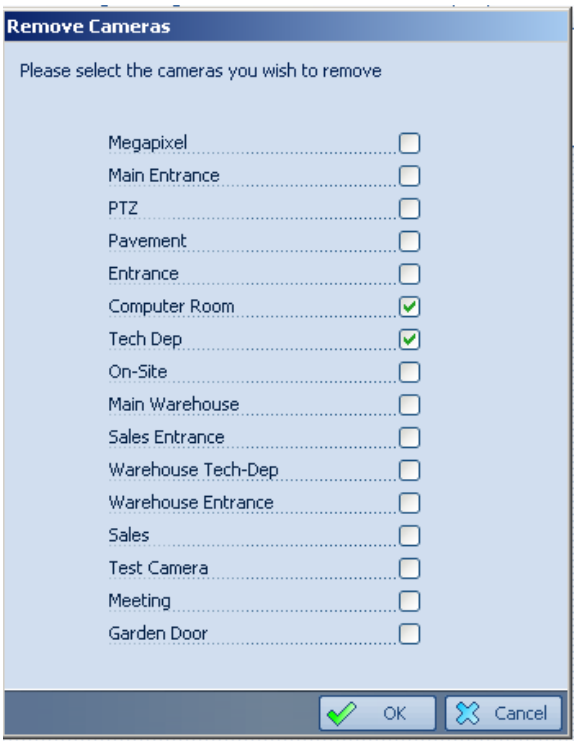
Add Only ONVIF IP cameras to you Cubis system. Select the desired number of cameras you wish to add. Follow the on screen guide to add the cameras and setup basic functions.

Add IP Cameras...

Add Only IP cameras using the RTSP link, to your Cubis system.

Remove Cameras...

If you want to remove cameras click on the "Remove Cameras..." button. And select the desired camera video inputs you wish to delete.



Press OK. The cameras you have selected will be deleted will all their settings. Also the Allocated hard disk space will be free to be used for other cameras.

Notes: Make sure that you have reallocated your storage so that there is enough free space available for the cameras that will be added.

Add I/O Controllers…

Test descriptin etc

Remove I/O Controllers…

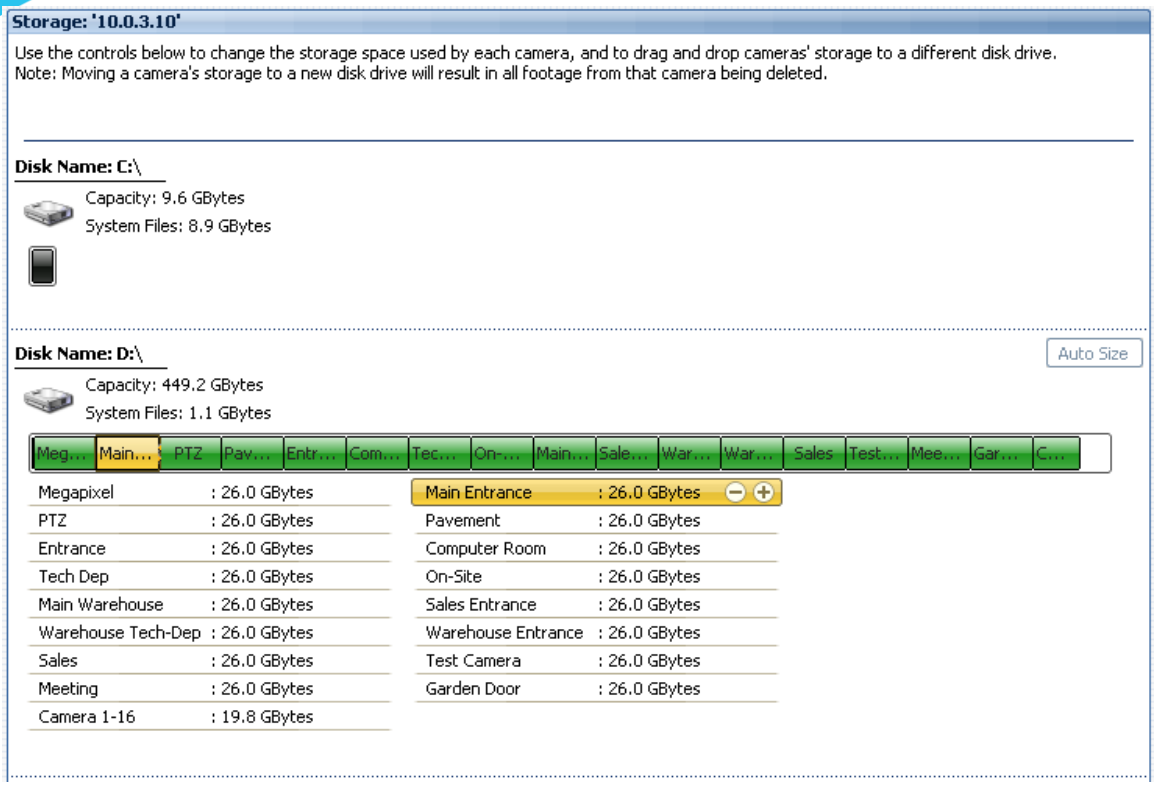
Test descriptin etc

Digital I/O

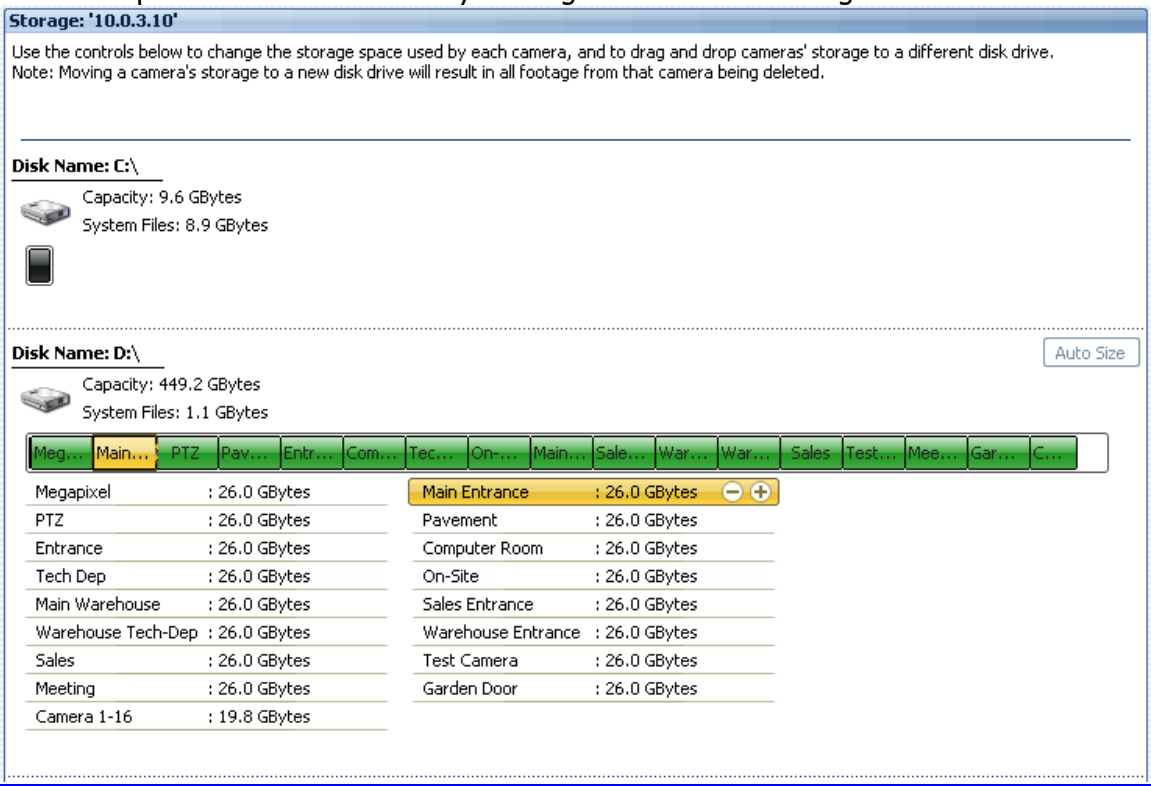
Text description etc

Storage

The Storage will show you all the information about the HDD installed to the system and also let you allocate the hard disk space for each camera.



The system can "Auto Size" the available storage for each camera by clicking the "Auto Size" button or you can control the storage for each camera by moving the mouse over the camera list on the bottom of the graph and clicking on "+" for increasing the HDD allocated space for the camera or by clicking on "-" for decreasing it.



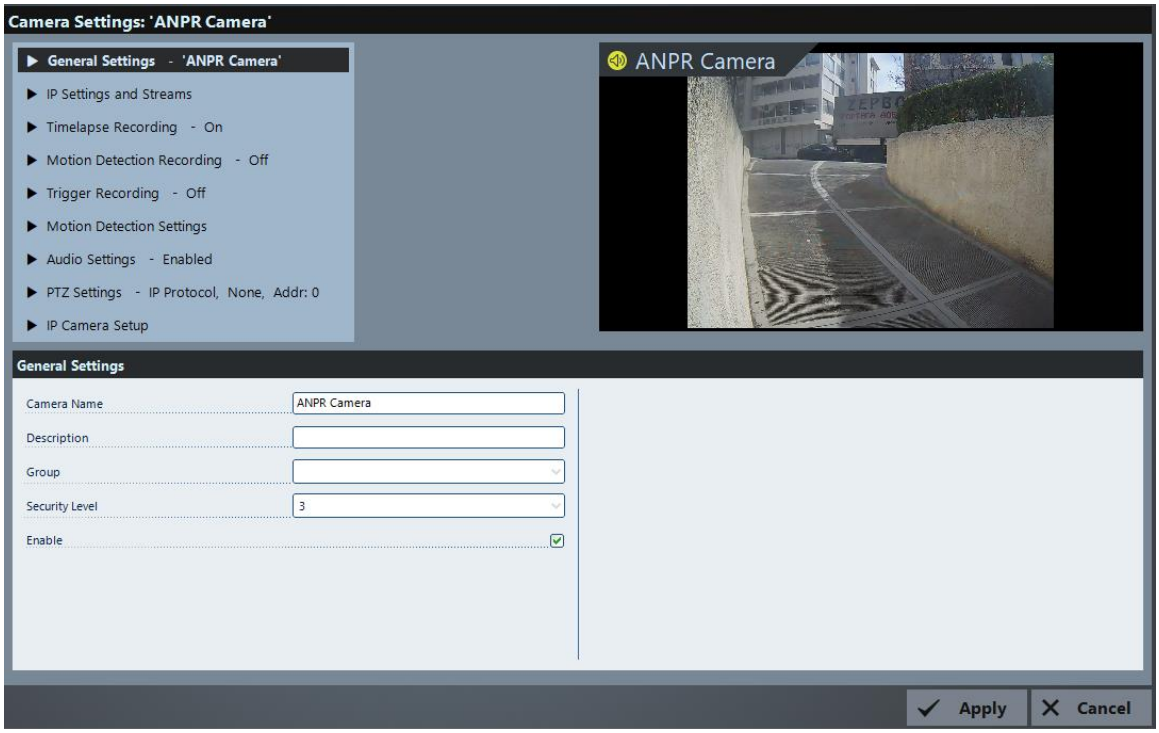
Else you can move your mouse to the graph and select the end of the box for each camera and slide it either to the right for increasing the size or to the left for decreasing the size of the allocated space for the camera.

If the Cubis Server is equipped with more than one HDD then you can Drag 'n drop the cameras from one HDD to another.

Camera Settings

You can make changes among several settings like the name of the camera, Security level, resolution, brightness, sharpness etc.

Select the camera you want to make changes i.e. Camera 02, the camera settings will be displayed.

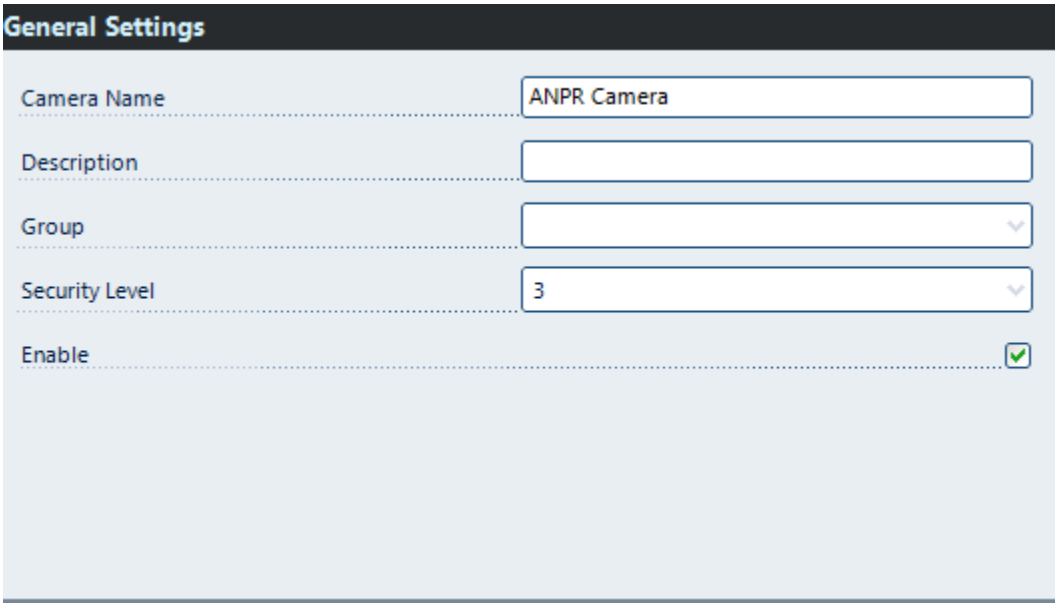


Each camera has a set of settings divided to the following.

General Settings	:	Change the image settings of the camera like, Camera name, brightness, contrast, colour, security level i.e.
IP settings and Streams		
Time Lapse Recording	:	Set the camera to record with time lapse. Set the desired Fps and also the schedule.
Motion Detection Recording		
Trigger Recording	:	Set the camera to record when a Digital Input is activated. Set the desired fps, the pre / post event time and also the schedule.
Motion Detection Settings		
Audio Settings	:	Set an audio channel to a camera input and change the audio quality for the audio input.
PTZ Settings	:	Setup the system to work with PTZ camera. Also set the Patrol type.
IP Camera Setup	:	Use the web interface of the IP cameras within Cubis.

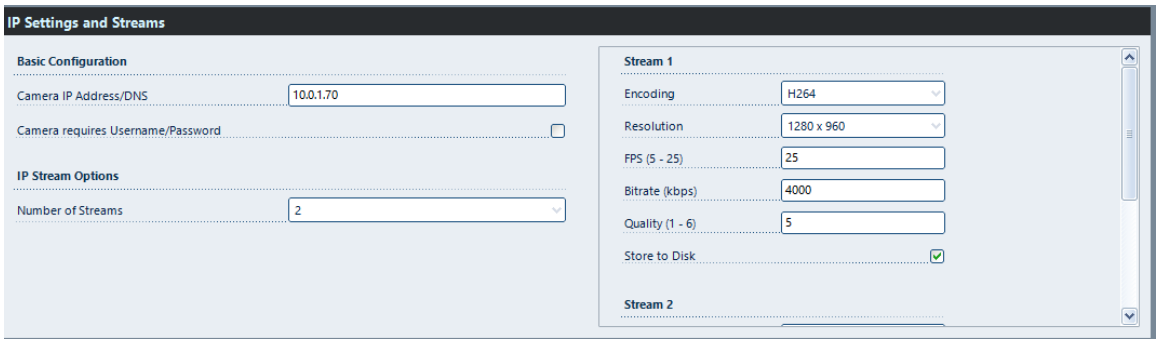
General Settings (Camera)

In the setup you can change the settings for each camera:



Camera Name	:	Set a name for the camera
Description	:	Type a description for the camera
Group	:	Set a group for the cameras
Security level	:	Set the security level
Enable	:	Enable/Disable the camera

IP Settings and Streams



Basic Configuration
Camera IP Address/DNS: the IP Address of the camera
Camera requires Username/Password: if selected you can enter the cameras username and password

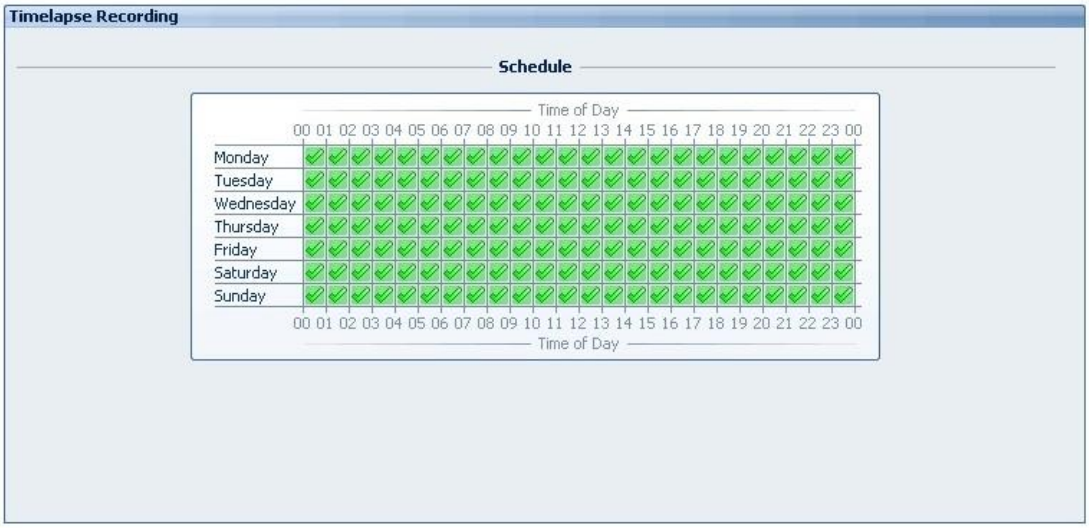
IP Steam Option
Number of Streams: The number of the maximum Steam that we want to store/Display

Stream 1
Encoding: Select between two Encodings H264 and JPEG

Resolution: the Resolution of the of the first Stream that they are available from the camera
Fps: from 1 – 30 this also is depended from the capability of the camera
Beat rate(Kbps): The Size of the Package received by the camera. This will also Affect the Storage of the camera in Size.
Quality: from 1-6
Store to Disk: Enable/Disable

Time Lapse Recording

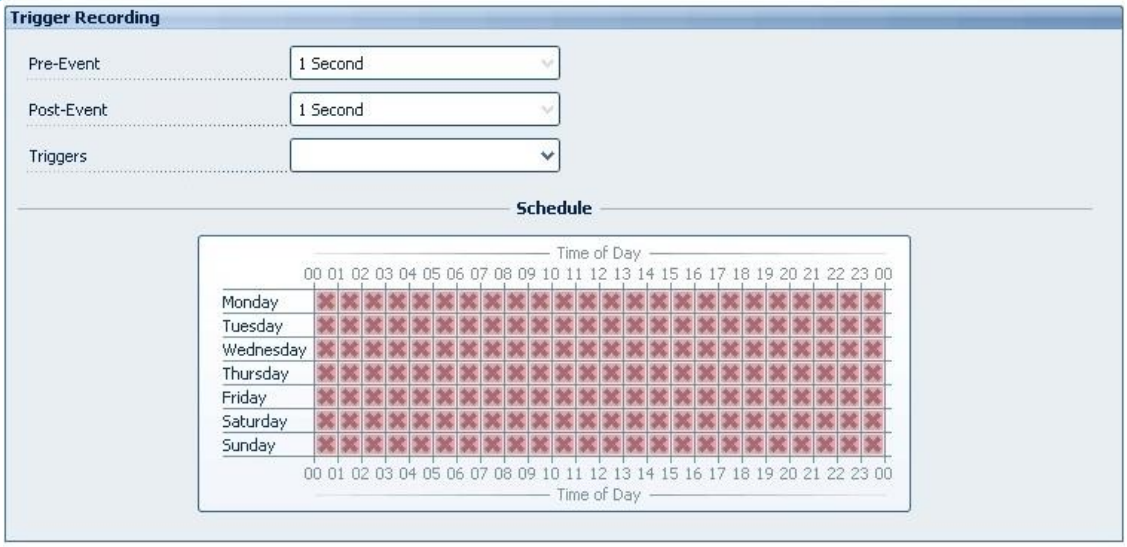
Set the system for time lapse recording. You will have to enable the recording schedule for time-lapse recording to be enabled.



Motion Detection Recording

Trigger Recording

Setup the desired settings for activating Record controlled by an external device (Digital Inputs). For enabling the trigger recording you will have to enable the schedule and also select an according trigger.



Pre-Event : Set the seconds or minutes that there will be recorded video before a motion is determined.

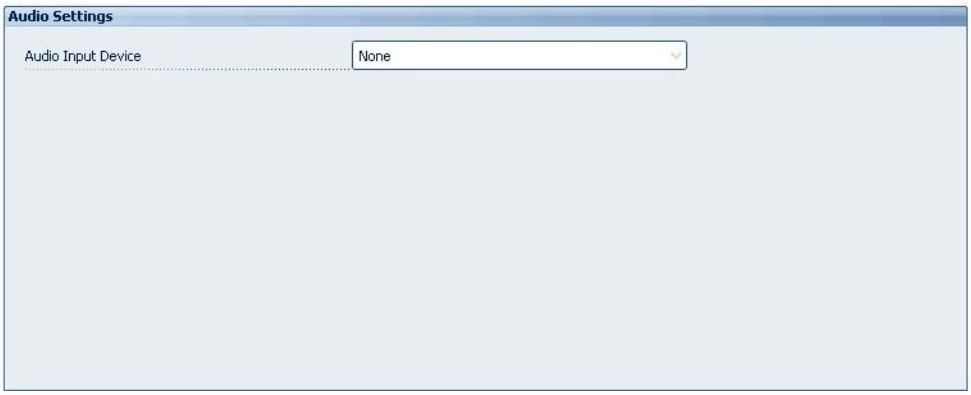
Post-Event : Set the seconds or minutes that there will be recorded video after a motion is determined.

Triggers : Select the Digital input that will trigger the recording

Motion Detection Settings

Audio Settings

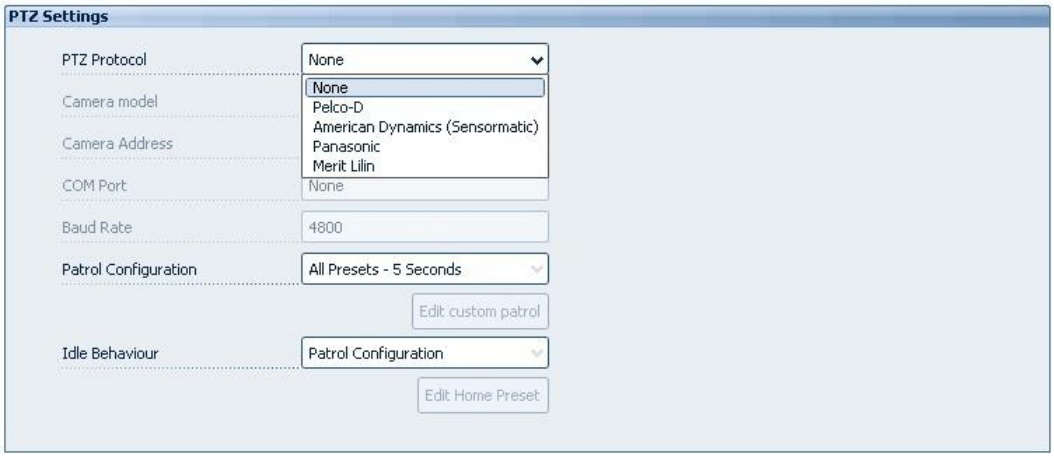
Enable the audio input to the camera and setup the quality:



1. **Audio Input**: It displays all the audio inputs of the Cubis Server.

PTZ Settings

To make a PTZ camera work you will have to setup the protocol the baud rate and the ID. This is where you have to enter the settings to make the system communicate with the camera.



The available choices are:

PTZ Protocol	:	IP protocol, Pelco – D, American Dyanamics, Panasonic, Merit Lilin
Camera model	:	Select the model of your camera. If it doesn't exist in the list you can choose a generic Protocol.
Camera Address	:	1.....255
COM Port	:	Com 1, RS-485,
Baud Rate	:	1200-2400-4800-9600-19200-38400 Bps
Patrol Configuration	:	All Presets XX- Sec, Custom Patrol
Edit Custom Patrol	:	You can create a custom patrol and define the sequence and the time of the presets.
Idle Behavior	:	Home position, None, Patrol configuration
On Screen Menu Control	:	For specific Models you can access the on Screen menu of your Camera*

Notes: The camera settings should be the same at the Camera and Server side.
****If you have another camera that you want to be fully supported please send us the request with full details and we will incorporate it to our S/W.***

IP Camera Setup

SEARCH

The search function will help you find easily moved objects from a selected area or find specific text from a text in device.

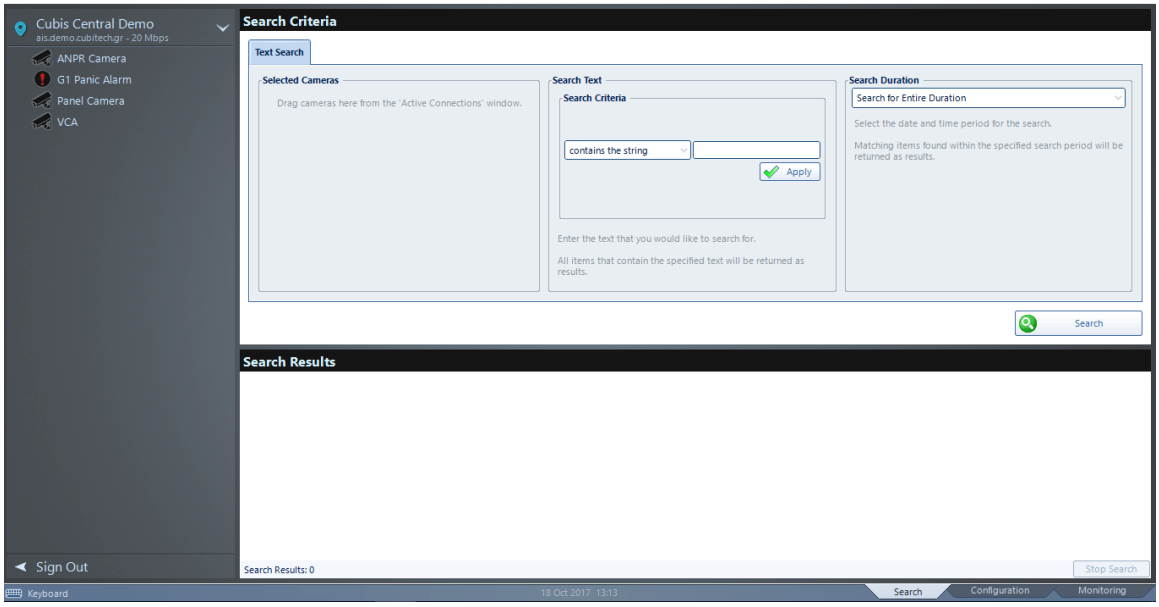
***Notes: This function is working ONLY when connecting remotely to Cubis servers*.**

Accessing the search

In order to access the search you must have the appropriate security access to the cameras you wish to do a search.
To enter the search click on the bottom right corner the tab search.

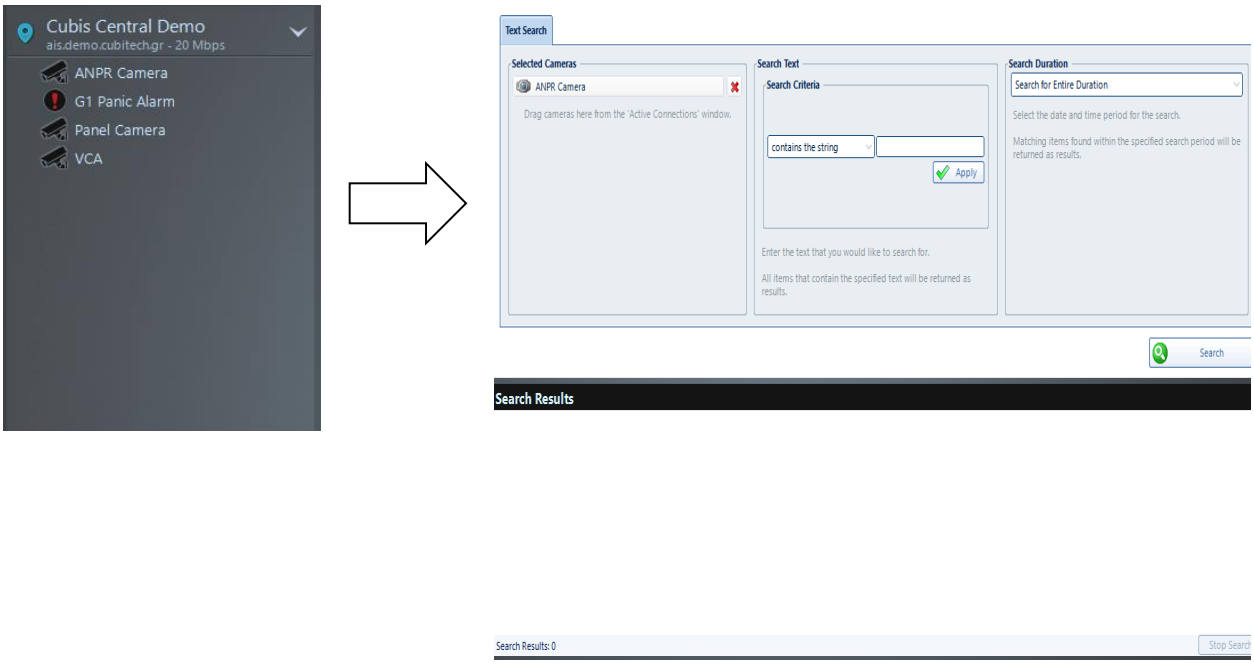
About the search

The search is divided to two parts. On the left you can select the cameras from which you can do a search whereas on the right you can select the type of search you wish to conduct and see the results.

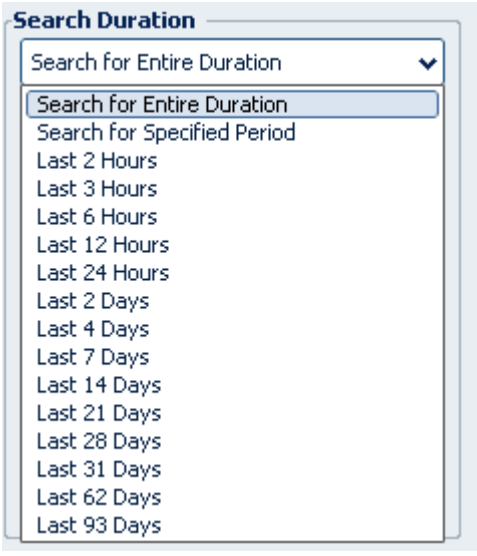


Text Search

For making a search in a camera first you have to select the **Text Search** and then select the cameras you wish to search from. Just click on the camera or drag and drop into the Selected Cameras panel. The cameras you have selected will appear into the Selected Cameras and you can search for text by typing the text you wish to find into the Search Text .



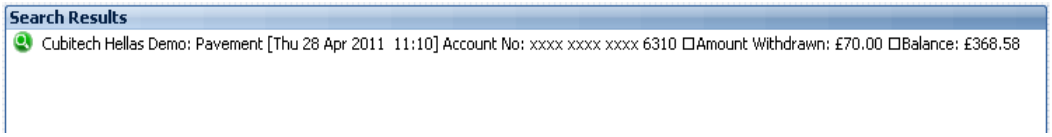
The next step is to select the duration in which you wish the system to conduct the Search. Under the Search Duration you will find several options concerning the time range the search will be done.



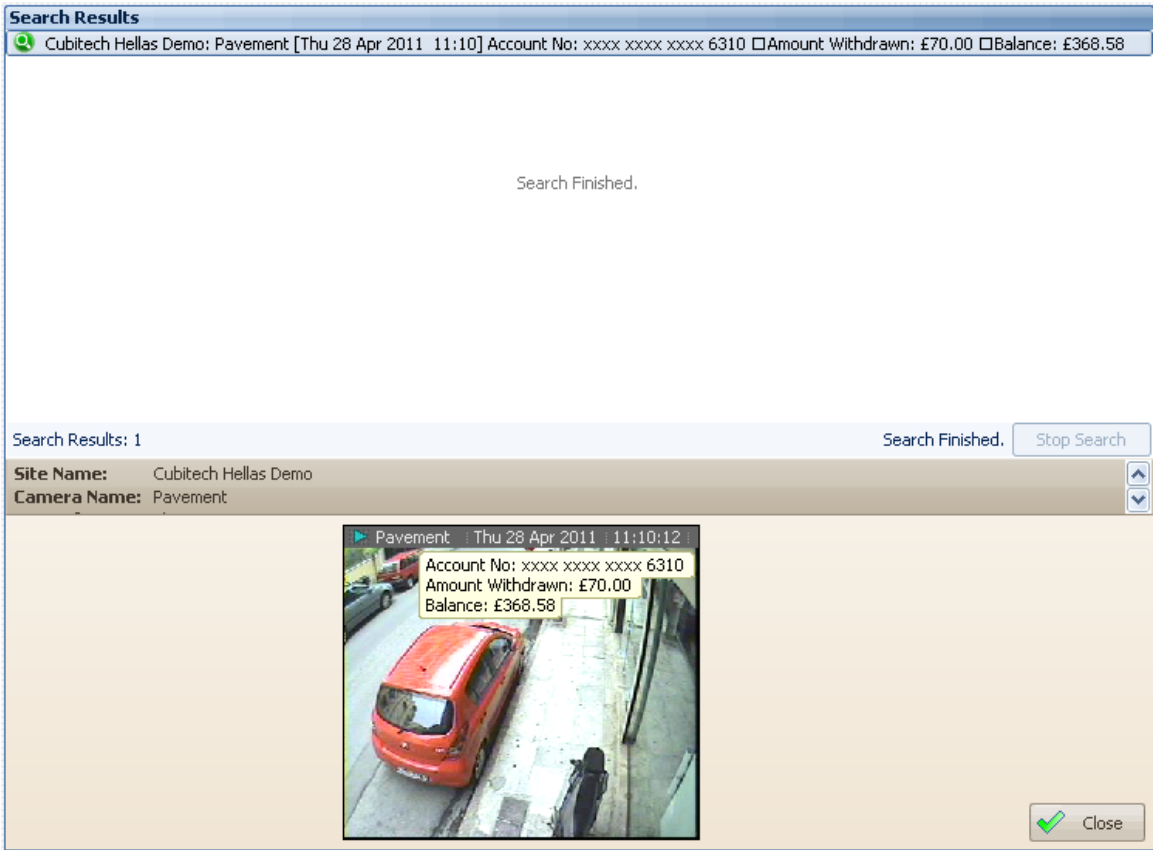
After selecting the search duration you are ready to start a search.

Simply click on the 

button and it will start. The results will be displayed shortly under the Search Results window.



Select the item you wish to be displayed by clicking on it.



In case that you wish to stop the search at any time just click on the 

button.

When the results are displayed and you wish to change the search criteria simply click the  and the criteria will be displayed again. If you wish to hide the criteria again click the  .

For more information contact the technical department of Cubitech S.A.
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