



FlatClient XXL ECO and PRO Panel PC

Doc. User Guide Rev. 1.0

Doc. ID: 1062-2145

This page has been intentionally left blank

 FLATCLIENT XXL ECO AND PRO - USER GUIDE

Disclaimer

Kontron would like to point out that the information contained in this user guide may be subject to alteration, particularly as a result of the constant upgrading of Kontron products. This document does not entail any guarantee on the part of Kontron with respect to technical processes described in the user guide or any product characteristics set out in the user guide. Kontron assumes no responsibility or liability for the use of the described product(s), conveys no license or title under any patent, copyright or mask work rights to these products and makes no representations or warranties that these products are free from patent, copyright or mask work right infringement unless otherwise specified. Applications that are described in this user guide are for illustration purposes only. Kontron makes no representation or warranty that such application will be suitable for the specified use without further testing or modification. Kontron expressly informs the user that this user guide only contains a general description of processes and instructions which may not be applicable in every individual case. In cases of doubt, please contact Kontron.

This user guide is protected by copyright. All rights are reserved by Kontron. No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), without the express written permission of Kontron. Kontron points out that the information contained in this user guide is constantly being updated in line with the technical alterations and improvements made by Kontron to the products and thus this user guide only reflects the technical status of the products by Kontron at the time of publishing.

Brand and product names are trademarks or registered trademarks of their respective owners.

©2018 by Kontron S&T AG

Kontron S&T AG

Lise-Meitner-Str. 3-5
86156 Augsburg
Germany
www.kontron.com

High Risk Applications Hazard Notice

THIS DEVICE AND ASSOCIATED SOFTWARE ARE NOT DESIGNED, MANUFACTURED OR INTENDED FOR USE OR RESALE FOR THE OPERATION OF NUCLEAR FACILITIES, THE NAVIGATION, CONTROL OR COMMUNICATION SYSTEMS FOR AIRCRAFT OR OTHER TRANSPORTATION, AIR TRAFFIC CONTROL, LIFE SUPPORT OR LIFE SUSTAINING APPLICATIONS, WEAPONS SYSTEMS, OR ANY OTHER APPLICATION IN A HAZARDOUS ENVIRONMENT, OR REQUIRING FAIL-SAFE PERFORMANCE, OR IN WHICH THE FAILURE OF PRODUCTS COULD LEAD DIRECTLY TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE (COLLECTIVELY, "HIGH RISK APPLICATIONS").

You understand and agree that your use of Kontron devices as a component in High Risk Applications is entirely at your risk. To minimize the risks associated with your products and applications, you should provide adequate design and operating safeguards. You are solely responsible for compliance with all legal, regulatory, safety, and security related requirements concerning your products. You are responsible to ensure that your systems (and any Kontron hardware or software components incorporated in your systems) meet all applicable requirements. Unless otherwise stated in the product documentation, the Kontron device is not provided with error-tolerance capabilities and cannot therefore be deemed as being engineered, manufactured or setup to be compliant for implementation or for resale as device in High Risk Applications. All application and safety related information in this document (including application descriptions, suggested safety measures, suggested Kontron products, and other materials) is provided for reference only.

Revision History

Revision	Brief Description of Changes	Date of Issue	Author / Editor
1.0	Initial version	2018-Feb-21	CW

Terms and Conditions

Kontron warrants products in accordance with defined regional warranty periods. For more information about warranty compliance and conformity, and the warranty period in your region, visit <http://www.kontron.com/terms-and-conditions>.

Kontron sells products worldwide and declares regional General Terms & Conditions of Sale, and Purchase Order Terms & Conditions. Visit <http://www.kontron.com/terms-and-conditions>.

For contact information, refer to the corporate offices contact information on the last page of this user guide or visit our website [CONTACT US](#).

Customer Support

Find Kontron contacts by visiting: <http://www.kontron.com/support>.

Customer Service

As a trusted technology innovator and global solutions provider, Kontron extends its embedded market strengths into a services portfolio allowing companies to break the barriers of traditional product lifecycles. Proven product expertise coupled with collaborative and highly-experienced support enables Kontron to provide exceptional peace of mind to build and maintain successful products.

For more details on Kontron's service offerings such as: enhanced repair services, extended warranty, Kontron training academy, and more visit <http://www.kontron.com/support-and-services/services>.

Customer Comments

If you have any difficulties using this user guide, discover an error, or just want to provide some feedback, contact [Kontron support](#). Detail any errors you find. We will correct the errors or problems as soon as possible and post the revised user guide on our website.

Symbols

The following symbols may be used in this user guide

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

NOTICE

NOTICE indicates a property damage message.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.



Electric Shock!

This symbol and title warn of hazards due to electrical shocks (> 60 V) when touching products or parts of products. Failure to observe the precautions indicated and/or prescribed by the law may endanger your life/health and/or result in damage to your material.



ESD Sensitive Device!

This symbol and title inform that the electronic boards and their components are sensitive to static electricity. Care must therefore be taken during all handling operations and inspections of this product in order to ensure product integrity at all times.



HOT Surface!

Do NOT touch! Allow to cool before servicing.



Laser!

This symbol inform of the risk of exposure to laser beam and light emitting devices (LEDs) from an electrical device. Eye protection per manufacturer notice shall review before servicing.



This symbol indicates general information about the product and the user guide.

This symbol also indicates detail information about the specific product configuration.



This symbol precedes helpful hints and tips for daily use.

For Your Safety

Your new Kontron product was developed and tested carefully to provide all features necessary to ensure its compliance with electrical safety requirements. It was also designed for a long fault-free life. However, the life expectancy of your product can be drastically reduced by improper treatment during unpacking and installation. Therefore, in the interest of your own safety and of the correct operation of your new Kontron product, you are requested to conform with the following guidelines.

High Voltage Safety Instructions

As a precaution and in case of danger, the power connector must be easily accessible. The power connector is the product's main disconnect device.

CAUTION

Warning

All operations on this product must be carried out by sufficiently skilled personnel only.

CAUTION



Electric Shock!

Before installing a non hot-swappable Kontron product into a system always ensure that your mains power is switched off. This also applies to the installation of piggybacks. Serious electrical shock hazards can exist during all installation, repair, and maintenance operations on this product. Therefore, always unplug the power cable and any other cables which provide external voltages before performing any work on this product.

Earth ground connection to vehicle's chassis or a central grounding point shall remain connected. The earth ground cable shall be the last cable to be disconnected or the first cable to be connected when performing installation or removal procedures on this product.

Special Handling and Unpacking Instruction

NOTICE



ESD Sensitive Device!

Electronic boards and their components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections of this product, in order to ensure product integrity at all times.

Do not handle this product out of its protective enclosure while it is not used for operational purposes unless it is otherwise protected.

Whenever possible, unpack or pack this product only at EOS/ESD safe work stations. Where a safe work station is not guaranteed, it is important for the user to be electrically discharged before touching the product with his/her hands or tools. This is most easily done by touching a metal part of your system housing.

It is particularly important to observe standard anti-static precautions when changing piggybacks, ROM devices, jumper settings etc. If the product contains batteries for RTC or memory backup, ensure that the product is not placed on conductive surfaces, including anti-static plastics or sponges. They can cause short circuits and damage the batteries or conductive circuits on the product.

Lithium Battery Precautions

If your product is equipped with a lithium battery, take the following precautions when replacing the battery.

CAUTION

Danger of explosion if the battery is replaced incorrectly.

- ▶ Replace only with same or equivalent battery type recommended by the manufacturer.
- ▶ Dispose of used batteries according to the manufacturer's instructions.

General Instructions on Usage

In order to maintain Kontron's product warranty, this product must not be altered or modified in any way. Changes or modifications to the product, that are not explicitly approved by Kontron and described in this user guide or received from Kontron Support as a special handling instruction, will void your warranty.

This product should only be installed in or connected to systems that fulfill all necessary technical and specific environmental requirements. This also applies to the operational temperature range of the specific board version that must not be exceeded. If batteries are present, their temperature restrictions must be taken into account.

In performing all necessary installation and application operations, only follow the instructions supplied by the present user guide.

Keep all the original packaging material for future storage or warranty shipments. If it is necessary to store or ship the product then re-pack it in the same manner as it was delivered.

Special care is necessary when handling or unpacking the product. See Special Handling and Unpacking Instruction.

Quality and Environmental Management

Kontron aims to deliver reliable high-end products designed and built for quality, and aims to complying with environmental laws, regulations, and other environmentally oriented requirements. For more information regarding Kontron's quality and environmental responsibilities, visit <http://www.kontron.com/about-kontron/corporate-responsibility/quality-management>.

Disposal and Recycling

Kontron's products are manufactured to satisfy environmental protection requirements where possible. Many of the components used are capable of being recycled. Final disposal of this product after its service life must be accomplished in accordance with applicable country, state, or local laws or regulations.

WEEE Compliance

The Waste Electrical and Electronic Equipment (WEEE) Directive aims to:

- ▶ Reduce waste arising from electrical and electronic equipment (EEE)
- ▶ Make producers of EEE responsible for the environmental impact of their products, especially when the product become waste
- ▶ Encourage separate collection and subsequent treatment, reuse, recovery, recycling and sound environmental disposal of EEE
- ▶ Improve the environmental performance of all those involved during the lifecycle of EEE



Environmental protection is a high priority with Kontron.

Kontron follows the WEEE directive

You are encouraged to return our products for proper disposal.

Table of Contents

Symbols.....	6
For Your Safety	7
High Voltage Safety Instructions	7
Special Handling and Unpacking Instruction	7
Lithium Battery Precautions.....	8
General Instructions on Usage	8
Quality and Environmental Management	8
Disposal and Recycling.....	8
WEEE Compliance.....	8
Table of Contents	9
List of Tables	10
List of Figures	10
1/ Introduction	12
2/ General Safety Instructions for IT Equipment	13
2.1. Electrostatic Discharge (ESD).....	14
2.1.1. Grounding Methods	14
3/ Scope of Delivery	15
3.1. Type Label and Product Identification	15
3.2. Product Variant	16
4/ Technical Data and Environmental Specification	17
4.1. Electrical Specification.....	18
4.2. Environmental Specification	19
4.3.1. CE	19
4.3.2. Electromagnetic Compatibility.....	19
4.3.3. RoHS	19
4.3.4. WEEE.....	19
4.4. Mechanical Specification.....	20
4.5. 32" Full metal Variant (F632)	20
4.6. 42" Full Metal Variant (F642).....	21
4.7. 55" Full Metal Variant (F655).....	21
4.8. 65" Full Metal Variant (F665).....	22
5/ Product Description	23
5.1. Front View.....	24
5.2. Rear View.....	25
5.2.1. Back Panel Views	25
5.3. I/O Interface Connections.....	27
5.3.1. I/O Interface Connectors - ECO.....	27
5.3.2. I/O Interface Connectors - PRO.....	28
5.4. Control Panel	28
6/ Configuration	29
7/ Installation and Start	30
7.1. Mounting Instructions	30
7.1.1. Mounting by Hanging	30
7.1.2. Mounting Orientation	30
7.2. Startup Procedure.....	30
7.3. Operating System	31

7.3.1. Driver Installation	31
8/ BIOS	32
8.1. Setup Menus	33
9/ Technical Support and Trouble Shooting	41
9.1. TroubleShooting	41
10/ Warranty	42
10.1. Limitation/Exemption from Warranty Obligation	42
10.2. Returning Defective Merchandise	43
11/ Storage, Transportation and Maintenance	45
11.1. Storage	45
11.2. Transportation	45
11.3. Maintenance	45
11.3.1. Cleaning the Screen	45
11.3.2. Cleaning the Housing	45
12/ Disposal	46
Appendix A: List of Acronyms	47
About Kontron	48

List of Tables

Table 1: Scope of Delivery	15
Table 2: Optional Accessories	15
Table 3: Technical Data	17
Table 4: Processor Technical Data	18
Table 5: Power Specification	18
Table 6: Environmental Specification	19
Table 7: Mechanical Dimensions	20
Table 8: Back Panel Mechanical Features – 32", 42" and 55" Displays	25
Table 9: Back Panel Mechanical Features – 65" Displays	26
Table 10: I/O Interfaces for Flat Client XXL ECO or PRO Variants	27
Table 11: Navigation Hot Keys Available in the Legend Bar	32
Table 12: Advanced Menu	34
Table 13: Boot Setup Menu Sub-screens and Functions	38
Table 14: Security Setup Menu Sub-screens and Functions	39
Table 15: Save and Exit Setup Menu Sub-screens and Functions	40
Table 16: Troubleshooting	41

List of Figures

Figure 1: FlatClient XXL ECO and PRO	12
Figure 2: Type Label	15
Figure 3: 32" Full Metal Variant (F632)	20
Figure 4: 42" Full Metal Variant (F642)	21
Figure 5: 5.3. 55" Full Metal variant (F655)	21
Figure 6: 65" Full Metal Variant (F665)	22
Figure 7: Front View	24
Figure 8: Rear View	25
Figure 9: I/O Interfaces FlatClient XXL ECO	27
Figure 10: I/O Interfaces FlatClient XXL PRO	28
Figure 11: Control Panel Buttons	28
Figure 12: BIOS Main Menu	33
Figure 13: Advanced Menu	34
Figure 14: Boot Menu	38

Figure 15: Security Menu	39
Figure 16: Save and Exit Menu	40
Figure 17: List of Acronyms	47

1/ Introduction

This user guide describes the FlatClient XXL ECO and FlatClient XXL PRO Panel PCs made by Kontron, also denoted as FlatClient XXL ECO and PRO within this user guide. This user guide focuses on describing the FlatClient XXL ECO and PRO special features. New users are recommended to study the short installation instructions within this user guide before switching on the power.

The Kontron FlatClient XXL series with its brilliant and large screens up to 65-inch opens the door to meaningful, clear and comprehensive visualization. The industrial grade design includes an IP54 sealed metal housing and guarantees a reliable 24x7 operation even in challenging environments. Both front options, IR-touch screen and protection glass, provide a robust, scratch proof and easy to clean front surface. Different levels of processing performance up to Intel® Core™ i5 processors is provided by two possible configurations ECO series and PRO series.

All displays feature Full-HD resolution and, in case of even higher resolution requirements, Ultra-HD (4k) displays are also available. Typical applications are process visualization, plant data collection and manufacturing execution systems. Furthermore, due to its thoroughly modular design the FlatClient XXL ECO and PRO can be easily customized to meet specific individual application needs.

General FlatClient XXL ECO and PRO features are:

- ▶ Display sizes 32" to 65" with or without touch
- ▶ Full-HD with optional Ultra-HD
- ▶ ECO (Intel Atom® Quad Core™) and PRO (Intel® Core™ i5)
- ▶ VESA wall mount possible
- ▶ Fanless use
- ▶ Modular mechanical design
- ▶ Industrial grade: Robust, reliable versatile and maintenance –free

Additionally, when developing our products we exclusively use embedded components to meet the current requirements and support sustainability for the future (Industry 4.0) such as long-term availability of embedded components.

Figure 1: FlatClient XXL ECO and PRO



2/ General Safety Instructions for IT Equipment

Read these safety instructions carefully and observe the instructions for your own safety, and correct use of the product. Additionally, observe the instructions and warnings on the product, and in this user guide.

▲WARNING

Read this chapter carefully and take careful note of the instructions that have been compiled for your safety. If the following general safety instructions are not observed, it could lead to injuries to the operator and/or damage of the product; in cases of nonobservance of the instructions Kontron is exempt from accident liability, this also applies during the warranty period.

The product has been built and tested according to the basic safety requirements and has left the manufacturer in a safety-related, flawless condition. To maintain this condition and also to ensure safe operation, the operator must not only observe the correct operating conditions for the product but also the following general safety instructions.

Product

- ▶ Do not insert sharp objects or spill liquid through slots in the housing. They may cause accident fire, electric shock or failure
- ▶ Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks
- ▶ Do not touch the screen directly with your fingers. You may damage the screen, and oil from your skin is difficult to remove
- ▶ Do not apply excess pressure to screen

Power and Power plug

- ▶ Use the type of power indicated on the type label
- ▶ The power cable serves as a disconnecting device. For this reason, the outlet of the power source must be located near the product and be easily accessible.
- ▶ The electrical installations must correspond to the requirements of local (country-specific) regulations.
- ▶ Disconnect the power plug from the AC outlet under following conditions:
 - ▶ If not in use for an extended period time
 - ▶ When the power cord or plug is damaged or frayed
 - ▶ If the product does not operate normally when the operating instructions are followed
 - ▶ If the product exhibits a distinct change in performance and a service may be required

Cables

- ▶ Do not allow anything to rest on the power cord.
- ▶ Take care that there are no cables, particularly power cables, in areas where persons can trip over them.
- ▶ Do not locate this product where persons will walk on the cord.
- ▶ Do not over load wall outlets or power cords. Ensure that the total of all units plugged into the wall outlet does not exceed 10 amperes.
- ▶ Ensure that the total ampere ratings on all units plugged into the extension cord is not above the cord's rating.

Environment

- ▶ Install on a flat level surface.
- ▶ Install in a well-ventilated place.
- ▶ Keep away from:
 - ▶ Overly hot environments
 - ▶ Cold environments
 - ▶ Humid environments
 - ▶ Direct sunlight
 - ▶ Dusty environment
 - ▶ Equipment that generate strong magnetic fields

2.1. Electrostatic Discharge (ESD)

A sudden discharge of electrostatic electricity can destroy static-sensitive devices or micro-circuitry. Therefore, proper packaging and grounding techniques are necessary precautions to prevent damage.

Always following ESD Sensitive device precautions below:



ESD Sensitive Device!

Keep electrostatic sensitive parts in their containers until they arrive at the ESD-safe workplace. Always be properly grounded when touching a sensitive board, component, or assembly.

For more Information, see the Special Handling and Unpacking Instruction within this user guide and Chapter 2.1.1 Grounding Methods below.

- ▶ Transport in ESD-safe containers such as boxes or bags.
- ▶ Keep electrostatic sensitive parts in their containers until they arrive at the ESD-safe workplace.
- ▶ Always be properly grounded when touching a sensitive board, component, or assembly.
- ▶ Store electrostatic-sensitive parts in protective packaging or on antistatic mats.

2.1.1. Grounding Methods

The following measures help to avoid electrostatic damages to the device:

- ▶ Cover workstations with approved antistatic material. Always wear a wrist strap connected to the workplace, as well as properly grounded tools and equipment.
- ▶ Use antistatic mats, heel straps, or air ionizers for more protection.
- ▶ Always handle electrostatically sensitive components by their edge or by their casing.
- ▶ Avoid contact with pins, leads, or circuitry.
- ▶ Turn off power and input signals before inserting and removing connectors or connecting test equipment.
- ▶ Keep the work area free of non-conductive materials such as ordinary plastic assembly aids and styrofoam.
- ▶ Use field service tools such as cutters, screwdrivers, and vacuum cleaners that are conductive.
- ▶ Always place drives and boards with the PCB-assembly-side down on the foam.

3/ Scope of Delivery

Check that your delivery is complete and contains the items below (according to the ordered unit configuration). If you discover damaged or missing items, please contact your dealer.

Table 1: Scope of Delivery

	Qty	Part Description
	1	FlatClient XXL ECO (32", 42", 55" or 65") display Or FlatClient XXL PRO (32", 42", 55" or 65") display
	1	Safety Instructions for IT equipment



Cabling is factory installed for the 32", 42" and 55" displays.



All 65" displays come with the customer ordered cable, for customer configuration. For more information on available cable types and lengths, see Chapter 3.2: Product Variant.

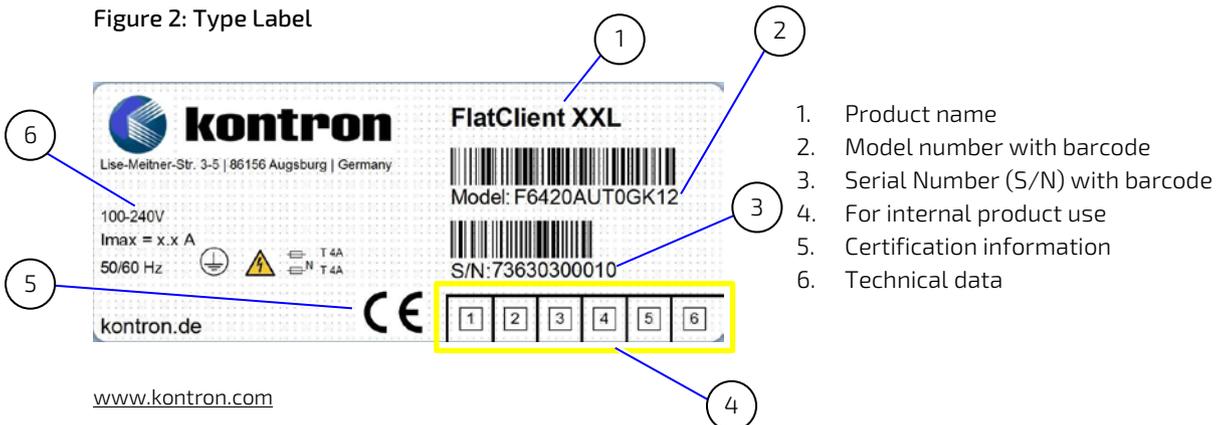
Table 2: Optional Accessories

	Part Number	Part Description
	Available on customer request	VCM Universal Wall Mount system

3.1. Type Label and Product Identification

To identify the product see the type label on the rear side of the housing.

Figure 2: Type Label



3.2. Product Variant

The FlatClient XXL ECO and PRO series of large screen closed case industrial grade panel PC variants are:

1. Housing: F6 -Full metal Closed housing (IP54) only
2. Display Size/CPU: ECO
32" with Intel® BayTrail Celeron Quad Core J1900 inside
42" with Intel® BayTrail Celeron Quad Core J1900 inside
55" with Intel® BayTrail Celeron Quad Core J1900 inside
65" with Intel® BayTrail Celeron Quad Core J1900 inside
PRO
32" with Intel® Haswell ULT, i5-4300U inside
42" with Intel® Haswell ULT, i5-4300U inside
55" with Intel® Haswell ULT, i5-4300U inside
65" with Intel® Haswell ULT, i5-4300U inside
3. Touch screen: IR-touch
Protection glass (without IR-touch)
4. Further options:

Memory Size (Maximum 8GB)				
4 GB		8 GB		
Slots (SD/CF Card Adapter)				
SD	8 GB	16 GB	32GB	64 GB
CF	8 GB		16 GB	32 GB
mSATA SSD				
32 GB		64 GB	128 GB	256 GB
Cables				
Ethernet	2 m, 3 m, 5 m 10 m and 20 m			
VGA	2m, 3m and 5m			
DVI	2 m, 3 m and 5 m			
HDMI	2 m, 3 m and 5 m			
DP	1.8 m, 3 m and 5 m			
USB 2.0	Type A -2 m, 3 m and 5 m Extension-2 m, 3 m , 5 m and 10 m			
USB 3.0	Type A. - 1 m and 3 m			
RS232	1.8 m, 3 m and 5 m			
Operating Systems				
Windows 7 (Embedded & Professional)		Windows 8.1	Windows 10	Linux

4/ Technical Data and Environmental Specification

Table 3: Technical Data

Display Size	32"	42"	55"	65"	65"
Display Manufacturer	LG	AUO	AUO	AUO	AUO
Display Type	LD320EUN-SEM1	P420HVN03.1	P550HVN02.2	P650HVN03.0	P650HVN04.0
Resolution	1920x1080, Full-HD	1920x1080, Full-HD	1920x1080, Full-HD	1920x1080, Full-HD	1920x1080, Full-HD
Format	16:9	16:9	16:9	16:9	16:9
Contrast Ratio	1300:1	4000:1	4000:1	4000:1	4000:1
Brightness	400 cd/m2	700 cd/m2	500 cd/m2	500 cd/m2	700 cd/m2
Angle View	178°/178°	178°/178°	178°/178°	178°/178°	178°/178°
Colors	16.7 million	16.7million	16.7million	16.7million	16.7 million
LED Lifetime (> 50%, 25°C)	50.000h	50.000h	50.000h	50.000h	50.000 h
Dimensions W x H x D (mm)	780x475x96.5	1050x640x132	1302x787x145	1547x931x181.5	1547x931x181.5
Weight	~ 20 kg	~ 40 kg	~ 60 kg	~ 75 kg	~ 75 kg
Touch Options	Protection glass IR-touch				
Mounting Option	full metal housing				
Fastening	VESA 200/200 or 200/up to 600		VESA 200/400	VESA 200-600/200-1000	
Color	RAL 7021 (black anthracite)				
Cooling	Fanless passive cooling				
Protection Class	IP54				
Certification	CE				
EMC	EN55022 Class A				

Table 4: Processor Technical Data

	FlatClient XXL ECO	FlatClient XXL PRO
CPU	Intel® BayTrail Celeron Quad Core J1900	Intel® Haswell ULT i5-4300U
Memory	Dual channel DDR3 SO-DIMM, up to 8 GB	Dual channel DDR3L SO-DIMM, up to 8GB
BIOS	AMI uEFI BIOS	AMI uEFI BIOS
Hardware Monitor		Temperature, voltages
Watchdog (WDT)	Programmable, generates system reset event	Programmable, generates system reset event
RTC		Processor integrated RTC
I/O Options	2xGbE (1x Intel® I210 / 1x Realtek RTL8111G) 1x VGA 1x HDMI (for external video) 4x USB 2.0 1x USB 3.0 SATA SSD/SHH with selected memory space 6 x COM (RS232, RS422, RS485) config. in BIOS Extension: 1x mini PCIe slot,	3x GbE (2x Intel® I210, 1x Intel® I218-LM), 2x Display Port (DP), 4x USB 3.0 SATA SSD/SHH with selected memory space 2 x COM (RS232, RS422, RS485) config. in BIOS Extension: 1x mini PCIe slot,
Additional Options	8 GB RAM CF/SD Card Adapter SD Card Memory 4 GB, 16 GB, 32 GB, 64 GB mSATA SSD 32 GB, 64 GB, 128 GB 2x COM (RS232, RS422, RS485) Audio with amplifier (2x 3 W) CF Card Memory (on demand) WiFi (on demand)	8GB RAM CF/SD Card Adapter SD Card Memory 4 GB, 16 GB, 32 GB, 64 GB mSATA SSD 32 GB, 64 GB, 128 GB 2x COM (RS232, RS422, RS485) Audio with amplifier (2x 3 W) CF Card Memory WiFi (on demand)
OS Support	Windows7 (Embedded & Professional), Windows 8.1 Windows 10 Linux	Windows7 (Embedded & professional), Windows 8.1 Windows 10 Linux

4.1. Electrical Specification

All FlatClient XXL ECO and PRO series are AC voltage systems designed for direct connection to the mains AC power-. The power cable is either brought out of the housing using one of the two lead-through or for the 65-inch display variants is available as a connector on the back panel, see Table 9: Back Panel Mechanical Features – 65" Displays.

Before, connecting the power cable to the power source ensure that the power source meets the power requirements specified on the FlatClient XXL ECO and PRO type label, and the requirements of local (country-specific) regulations.

For grounding, the protective earth connection is positioned on the rear side of the housing next to the main power supply switch.

CAUTION

For AC power connection. The power source must meet the power requirement specified on the FlatClient XXL type label.

Table 5: Power Specification

Display Size	32"	42"	55"	65"	65"
Power Supply (V AC)	90 V AC to 264 V AC, at 47 Hz to 63 Hz				

4.2. Environmental Specification

Table 6: Environmental Specification

Operating Temperature	0°C - 45°C ambient
Humidity	10%-90% @ 39°C, non condensing

4.3. Standards and Approvals

The FlatClient XXL ECO and PRO series conforms to the requirements of the following standards.



If the user modifies the product, prerequisites for specific approvals such as CE conformity declaration (safety requirements) may no longer apply.

4.3.1. CE

This product is CE certified.

4.3.2. Electromagnetic Compatibility

This product has been designed for low level of radiated emission for residential, commercial and light-industrial environments and high immunity level for industrial environmental and complies with the EN 55022 class A specification for radiated and conducted emissions.

EN 55022 Class A	Emission of Information Technology Equipment (ITE), radio disturbance characteristics and limits and methods of measurement (Class A)
------------------	---

4.3.3. RoHS

RoHS II Directives	Compliant with the directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment
--------------------	---

4.3.4. WEEE

WEEE Directive	Compliant with the Waste Electrical and Electronic Equipment (WEEE) Directive to reduce waste of electrical and electronic equipment, encourage recycling and environmental disposal and increase the environmental awareness of producers
----------------	--

4.4. Mechanical Specification

Four different display sizes are available 32-inch, 42-inch, 55-inch and 65-inch. The following table lists the mechanical dimensions of the FlatClient XXL ECO and PRO displays.

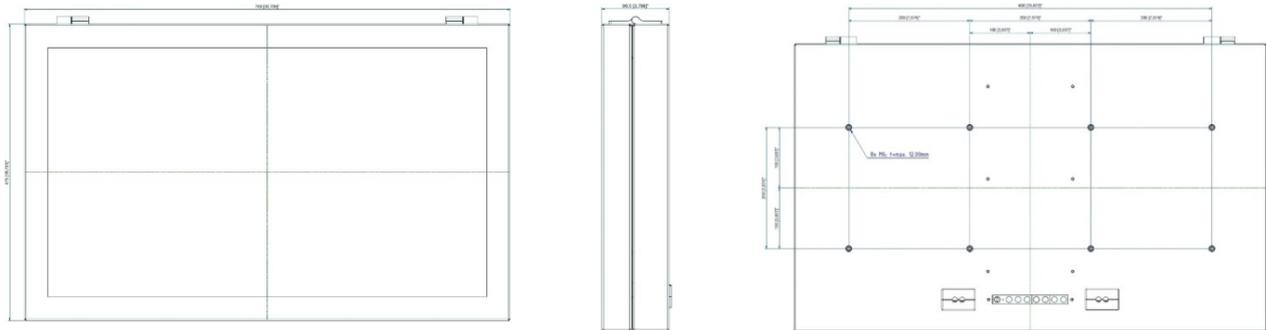
Table 7: Mechanical Dimensions

FlatClient XXL	32" (F632)	42" (F642)	55" (F655)	65" (F665)
Height	780 mm (30.71")	1050 mm (41.34")	1302 mm (51.26")	1547 mm (60,91")
Width	475 mm (18.70")	640 mm (25.20")	775.5 mm (30,53")	917 mm (36,10")
Depth	96.5 mm (3.80")	100.5 mm (3.96")	119.5 mm (4.70")	181.5 mm (7.15")

For more detailed mechanical dimensions, refer to the outline dimensions drawings within this chapter. Each dimension drawing shows the main external mechanical features such as the position and size of the VESA mounting holes, opening hinges, OSD control panel, and cable lead through or external I/O connector panel.

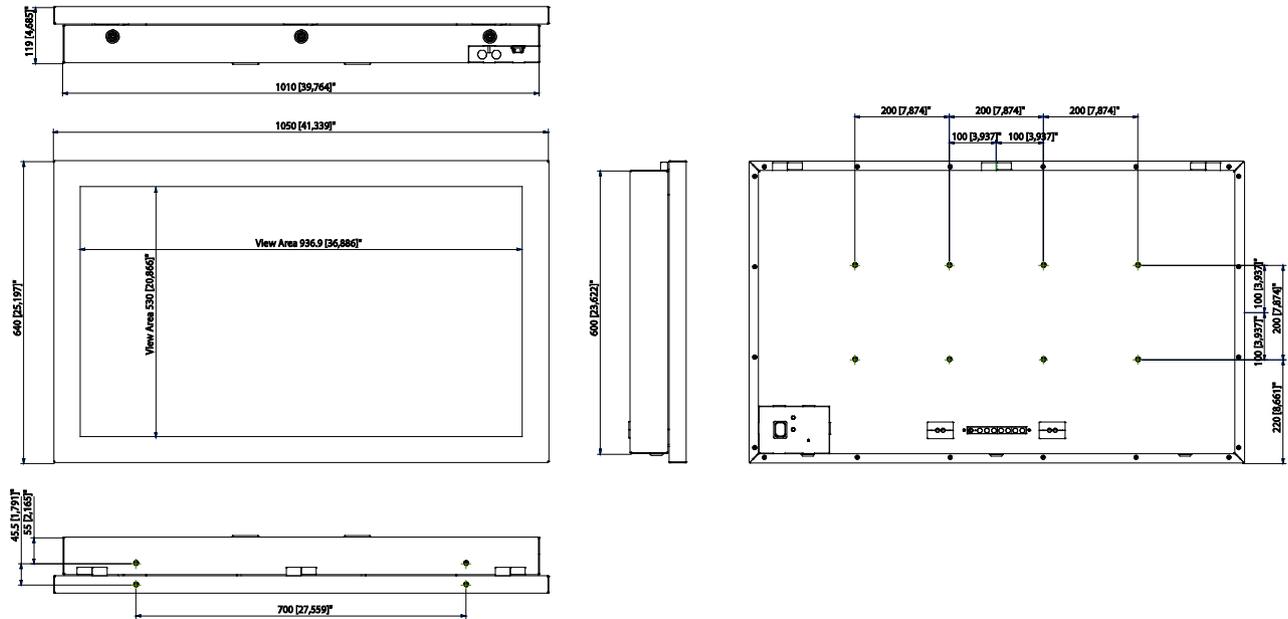
4.5. 32" Full metal Variant (F632)

Figure 3: 32" Full Metal Variant (F632)



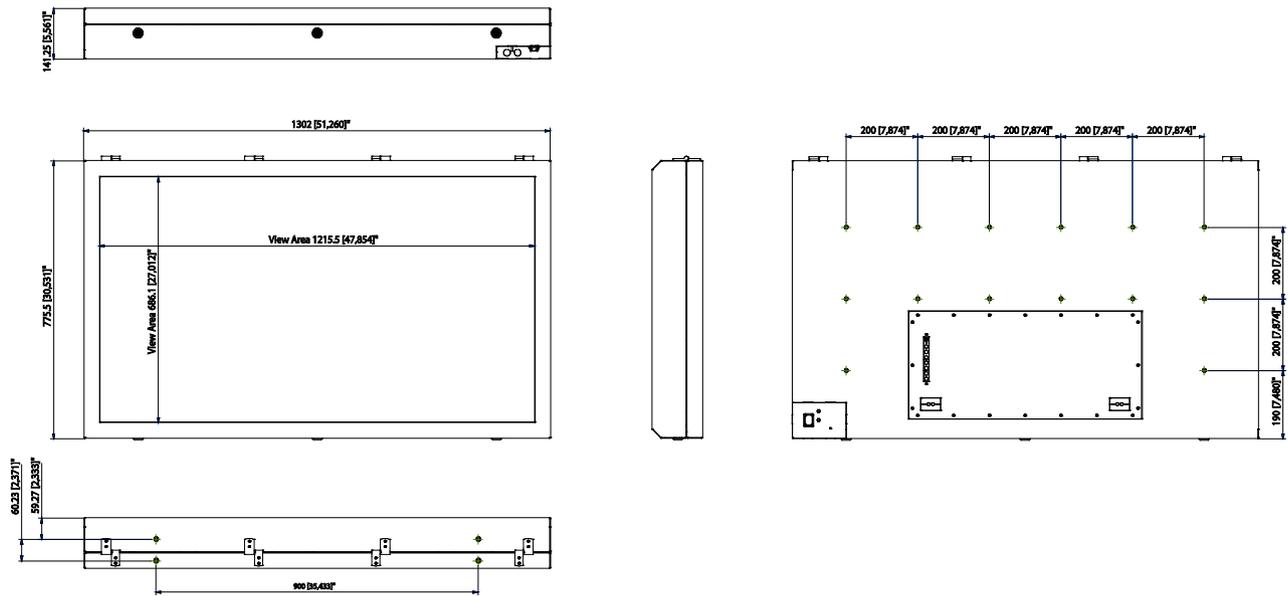
4.6. 42" Full Metal Variant (F642)

Figure 4: 42" Full Metal Variant (F642)



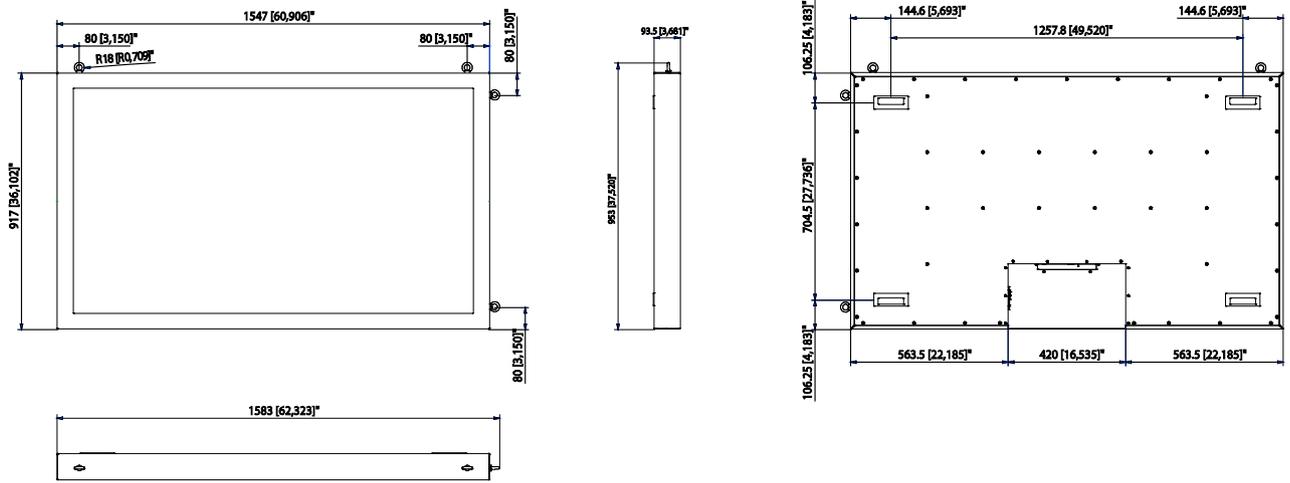
4.7. 55" Full Metal Variant (F655)

Figure 5: 5.3. 55" Full Metal Variant (F655)



4.8. 65" Full Metal Variant (F665)

Figure 6: 65" Full Metal Variant (F665)



5/ Product Description

Before working with the FlatClient XXL ECO and PRO system, we recommend that users take a few minutes to learn about the various parts of the FlatClient XXL ECO and PRO.

The FlatClient XXL ECO and PRO lines are both full metal industrial panel PCs incorporating an embedded single board computer and integrated into a Liquid Crystal Display (LCD). The LCD display is a high quality display incorporating a color active matrix Thin Film Transistor (TFT) LCD with monitor sizes ranging from either 32-inch to 65-inch. The LCD provides superior display performance with maximum resolutions that are ideal to display complex graphics and high definition images. The LCD display is available with or without touch. The IR touch screen works similarly to a 'light barrier' and is the only touch screen where no direct contact with the display is necessary. The IR touch is backed by a reflective safety glass that makes it virtually vandal-proof, while not reducing the performance of the touch screen, and enables the IR touch screen to be operated with fingers, gloves and other items.

The FlatClient XXL incorporates an embedded single board computer where the ECO series is equipped with the powerful Intel® BayTrail Core i5 processor and includes up to 8 GB of DDR3 SODIMM, and the PRO series is equipped with the powerful Intel® Haswell Core i5 processor and includes up to 8 GB of DDR3L SODIMM.

All FlatClient XXL ECO and PRO variants are available in a full metal housing, where the housing differs depending on the display size:

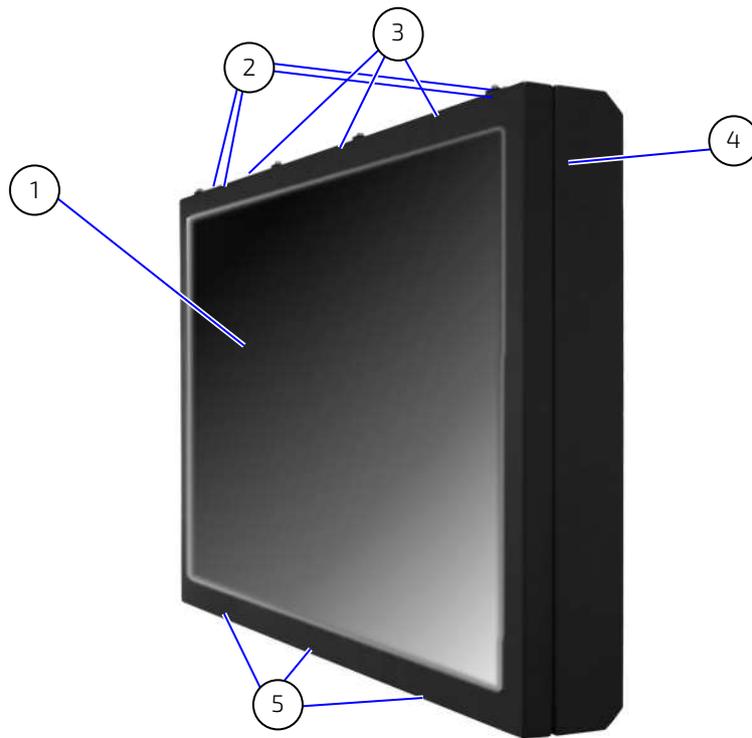
- ▶ 32-inch, 42-inch and 55-inch displays are factory configured and all customer ordered cables are led out of the housing for direct connection. This includes a power cable for direct connection to a power source and I/O cables from the available internal interface ports.
- ▶ 65-inch displays include four hand grips on each corner of the back panel. The I/O connectors and power connector are available externally on the back panel in the I/O area.

The FlatClient XXL ECO and PRO connects directly to a main power source and is a fanless system using a passive cooling solution. The FlatClient XXL's sturdy IP54 full metal housing operates in extended temperature range, as well as under vibration and shock, making it ideal for industrial applications.

The mounting and operation of the FlatClient XXL ECO and PRO is allowed in both the horizontal and vertical position. The vertical operating position is only possible when supported by the OS used. When mounting in your application, use a heavy duty VESA compliant mounting system. For more information, see Chapter 7.1: Mounting Instructions

5.1. Front View

Figure 7: Front View



- | | |
|---|---|
| 1. Display screen | 4. Full metal housing |
| 2. Barrel hinges (on top side) | 5. Locking screws to open the housing,
located on the underside of the housing |
| 3. VESA mounting holes (M8) to mount by
hanging. | |

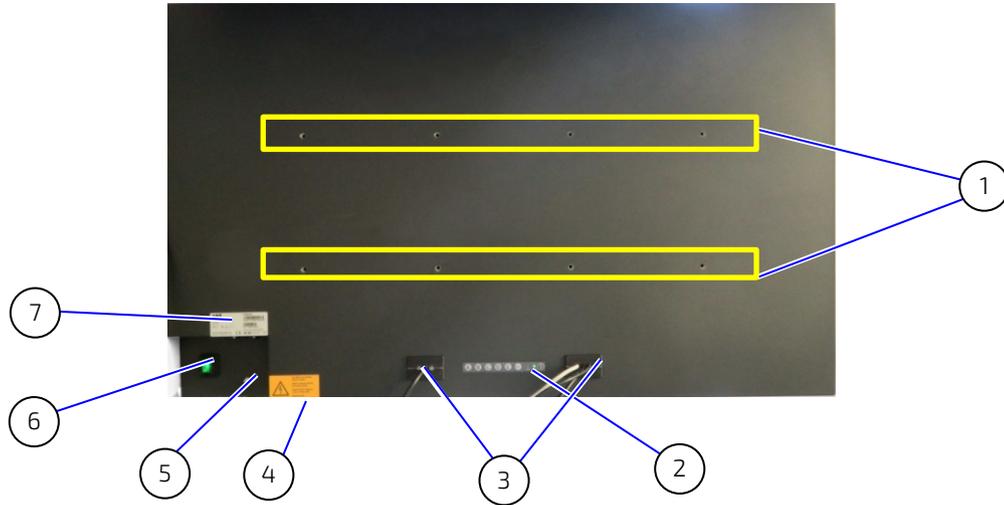


The 65" Full metal (FS65) variant does not include opening hinges and locking screws. To open the FS65 variant release the back panel by unscrewing the fastening screws and then removing the complete back panel.

5.2. Rear View

Each display size has a specific back panel where the main items are the position of the main items differ. The figure below shows a 55-inch display back panel and describes the main elements.

Figure 8: Rear View



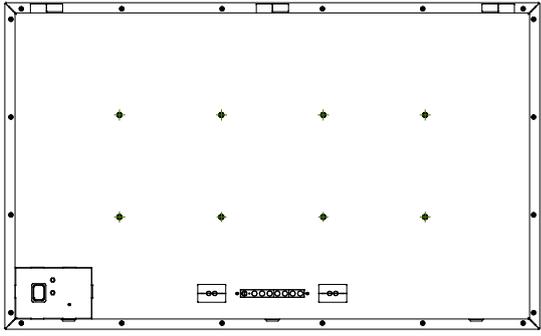
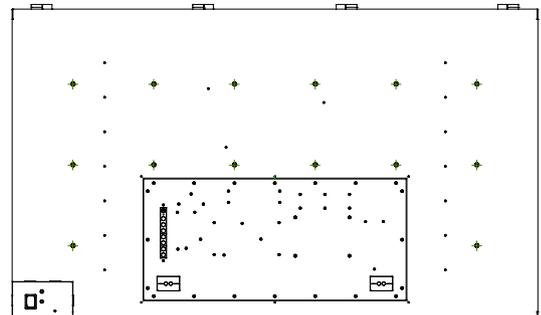
- | | |
|--|---------------------------|
| 1. VESA mounting holes (M6) | 4. Warning label position |
| 2. Control Panel | 5. Protective earth pin |
| 3. Two cable lead throughs for max. of up to 6 cables (factory-configured) | 6. Main power button |
| | 7. Type Label |

5.2.1. Back Panel Views

The back panel of the F632 (32-inch), F642 (42-inch) and F6 (55-inch) displays specifies factory configured cables led out of the housing for direct connection. Specific features of each back panel are listed in the table below.

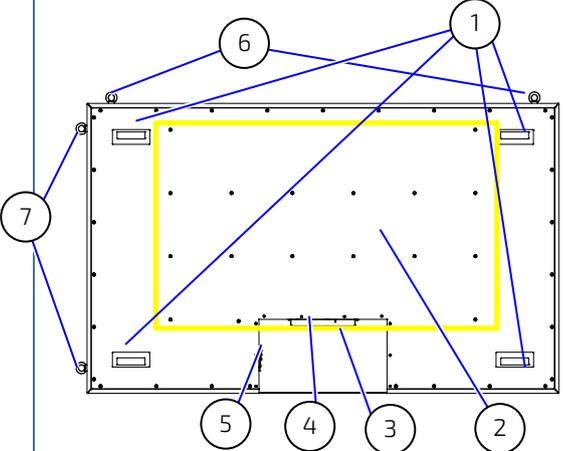
Table 8: Back Panel Mechanical Features – 32", 42" and 55" Displays

Back Panel View	Features
<p>32"</p>	<p>Rear side</p> <ul style="list-style-type: none"> ▶ 8x VESA mounting holes (M6) safety eyelet 13 mm maximum depth ▶ 1x Control Panel keypad ▶ 2x cable lead through (standard - 3 hole lead through) <p>Top Side</p> <ul style="list-style-type: none"> ▶ 3x opening hinges ▶ 4x VESA mounting holes (M8) with safety eyelet 15 mm maximum depth, to hang the system <p>Bottom Side</p> <ul style="list-style-type: none"> ▶ 3x locking screws

Back Panel View	Features
<p>42"</p> 	<p>Rear side</p> <ul style="list-style-type: none"> ▶ 8x VESA mounting holes (M6) safety eyelet 13 mm maximum depth ▶ 1x Control Panel keypad ▶ 2x cable lead through (standard - 3 hole lead through) ▶ Power switch and ground <p>Top Side</p> <ul style="list-style-type: none"> ▶ 3x opening hinges ▶ 4x VESA mounting holes (M8) with safety eyelet 15 mm maximum depth, to hang the system <p>Bottom Side</p> <ul style="list-style-type: none"> ▶ 3x Locking screws
<p>55"</p> 	<p>Rear side</p> <ul style="list-style-type: none"> ▶ 14x VESA mounting holes (M6) safety eyelet 13 mm maximum depth ▶ 1x Control Panel keypad ▶ 2x cable lead through (standard - 3 hole lead through) ▶ Power switch and ground <p>Top Side</p> <ul style="list-style-type: none"> ▶ 4x opening hinges ▶ 4x VESA mounting holes (M8) with safety eyelet 15 mm maximum depth, to hang the system <p>Bottom Side</p> <ul style="list-style-type: none"> ▶ Locking screws

The 65-inch back panel is a full metal solution with externally connected I/O interfaces and power connector with switch. For this solution, the cables are not lead out of the housing. The I/O connectors are user installed. If required the I/O area can be assembled with a dust and dirt cover including two lead throughs to lead the cables out of the I/O area and ensure that the I/O area is not exposed to dust and dirt. The following table shows the position of the main features.

Table 9: Back Panel Mechanical Features – 65" Displays

Back Panel View	Features
	<p>Rear side</p> <ol style="list-style-type: none"> 1. 4x handgrips 2. 16x VESA mounting holes (M6) 3. 1x Control Panel keypad 4. I/O Interface connector panel 5. Power connector and power switch <p>Top Side</p> <ol style="list-style-type: none"> 6. VESA mounting holes (M8) to hang the system horizontally <p>Side</p> <ol style="list-style-type: none"> 7. VESA mounting holes (M8) to hang the system vertically

5.3. I/O Interface Connections

For both the factory installed I/O interface variants (F632, F642 and F655) and externally connect I/O Interface variant (F65), the following I/O interfaces are available:

Table 10: I/O Interfaces for Flat Client XXL ECO or PRO Variants

FlatClient XXL ECO	FlatClient XXL PRO
2x GbE	3x GbE
1x VGA	2x Display Port (DP),
1x HDMI IN (signal input)	4x USB 3.0
4x USB 2.0	
1x USB 3.0	

For the factory installed I/O interface variants (F632, F642 and F655) the requested I/O interfaces are lead out of the housing using two (IP65) three-hole lead-throughs on the rear side of the housing and externally available for direct use. Because the cables are internally connected, the cable is partially within the housing and the full cable length is not available for external use. The available external cable length is the original length minus approximately 0.3 m. This reduction in usable cable length must be taken into consideration when ordering the I/O cables.



To ensure the required cable length for the application, the reduction in the usable cable length must be considered when ordering the I/O cables.

For the externally connect I/O Interface variant (F65) the interface connectors are available for direct user connection on the underside of the back panel, see Table 9: Back Panel Mechanical Features – 65" Displays. Because the I/O cables and power cable are externally connected, the full cable length is available for external use

For more information on the possible cable lengths, see Chapter 3.2: Product Variant or contact your local Kontron sales representative or Kontron Inside Sales.

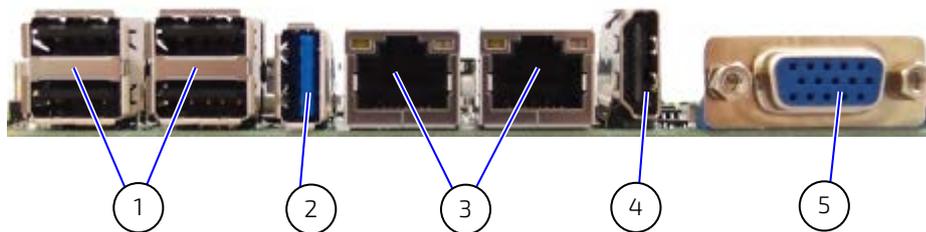
NOTICE

When disconnecting any power cable or I/O interface cables, do not pull the cable by grabbing the cable itself. Hold the cable connector whenever disconnecting a cable.

5.3.1. I/O Interface Connectors - ECO

Up to five of the following interfaces can be factory installed and lead out of the housing.

Figure 9: I/O Interfaces FlatClient XXL ECO

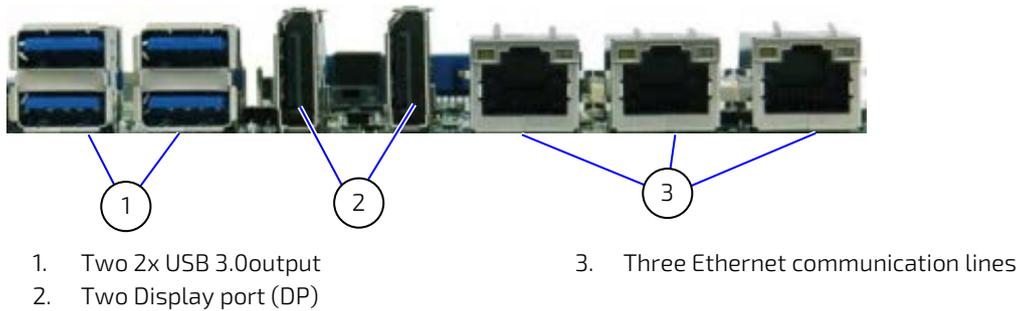


- | | |
|--------------------------------|---------------|
| 1. Two 2x USB 2.0 output | 4. HDMI input |
| 2. One USB 3.0 output | 5. VGA input |
| 3. Two GbE communication lines | |

5.3.2. I/O Interface Connectors - PRO

Up to five of the following interfaces can be factory installed and lead out of the housing

Figure 10: I/O Interfaces FlatClient XXL PRO



5.4. Control Panel

The control panel located on the rear side of the housing contains a power button to power up and activate the CPU boards and a green power light. If the FlatClient XXL ECO or PRO operates in HDD mode a yellow HDD light lights up. Additionally, a reset button is available to reset the CPU board. If the reset button is not required, it is possible to disconnect the reset button.

Figure 11: Control Panel Buttons



- | | | |
|---|---------------|--|
| 1 | Buttons A - E | A - E Buttons are not connected and are available for optional extension |
| 2 | Reset Button | Reset (can be disconnected) |
| 3 | HDD Light | HDD control lamp. When HDD mode is used, the LED lights up yellow. |
| 4 | Power Light | Power control lamp. When the power is on, the LED lights up green. |
| 5 | Power Button | Power Switch: Press to activate the CPU board. |

6/ Configuration

The modular design of the FlatClient XXL ECO and FlatClient XXL PRO lines allows for easily customization to meet specific individual application needs.

For display sizes 32-inch, 42-inch and 55-inch the FlatClient XXL ECO and PRO is factory configured to the customer's required I/O Interface configuration and it is not possible to access the internal components to change the requested factory interface configuration. For more information on the possible configuration options, see Chapter 3.2: Product Variant.

For the display size 65-inch the FlatClient XXL ECO and PRO comes with an external I/O Interface connector and if required it is possible to change the external interface configuration. For more information, on the possible configuration options, see Chapter 3.2: Product Variant.

⚠ WARNING

Do not open the FlatClient XXL ECO and PRO housing. No user-serviceable parts inside.

7/ Installation and Start

7.1. Mounting Instructions

The FlatClient XXL ECO and PRO are stand-alone solutions designed to be mounted in the user's application using heavy duty VESA 200/1000 compliant mounting systems. Mounting holes are located on the rear side of the full metal housing where the number of mounting holes varies depending on the size of the display. For more information on the number and the position of the VESA mounting holes, see Chapter 4.4: Mechanical Specification, and Table 8: Back Panel Mechanical Features – 32", 42" and 55" Displays and Table 9: Back Panel Mechanical Features – 65" Displays.

7.1.1. Mounting by Hanging

It is possible to mount using the VESA mounting holes at the top of the housing. The FlatClient XXL ECO and PRO variants F632, F642 and F655 variants can hang horizontally using VESA mounting holes on the top of the housing, see Table 8: Back Panel Mechanical Features – 32", 42" and 55" Displays.

The F665 variant can hang in both the horizontal and vertical orientation using VESA mounting holes at the top and the side of the housing, see Table 9: Back Panel Mechanical Features – 65" Displays.

7.1.2. Mounting Orientation

Both horizontal or vertical orientations can be used when mounting. The vertical operating position is only possible when supported by the Installed Operating System.

⚠ CAUTION

The FlatClient XXL ECO and PRO has to be installed and operated only by trained and qualified personnel.

⚠ CAUTION

Due to the weight of the FlatClient XXL ECO and PRO, Kontron recommends that the mounting procedure is carried-out by two persons.

⚠ CAUTION

During operation, the housing must be properly installed and secured using the corresponding VESA compliant screws.

⚠ CAUTION

When mounting ensure that there is sufficient space for I/O cables and power cable. Ensure that the main Power button and the control panel is easily accessible.

7.2. Startup Procedure

The FlatClient XXL ECO and PRO is delivered ready for use with factory configured cabling and pre-installed software. Read the following instructions before starting the FlatClient XXL ECO and PRO.

⚠ CAUTION

The power supply must meet the power requirement specified on the type label.

1. Before starting the FlatClient XXL ECO and PRO connect the power cable to the power source.
2. Connect the I/O interface cables that are lead-out of the housing to the correct interface.



Failure to connect the I/O Interface cables, displays a 'No Cable' message for each of the possible I/O interfaces.

3. Press the main power on button, to start the FlatClient XXL ECO and PRO. The LED power indicator turns green.
4. To activate the CPU press the power button on the control panel power at the rear side of the housing, see Figure 8: Rear View. When activated the power light lights up green, see Figure 11: Control Panel Buttons.

7.3. Operating System

An Operating System (OS) and the necessary drivers must be installed to operate the FlatClient XXL ECO and PRO. The operating system is factory installed. The operation system options are:

- ▶ Windows 7 (Embedded and Professional)
- ▶ Windows 8.1
- ▶ Windows 10
- ▶ Linux

Other operating systems are available on request, contact Kontron Support.

If, upon request, the FlatClient XXL ECO and PRO does not come with a pre-installed operating system you will need to install an operating system and the necessary drivers. First, assemble the system, connected the appropriate power source, to power up and then install the desired operating system.

7.3.1. Driver Installation

The necessary drivers are factory installed. If drivers for other operating systems are required, Drivers are available for download from the Kontron Product Website. Install the required drivers as instructed on the website. For more information, contact Kontron Support.



All essential drivers are available on the Kontron FlatClient XXL ECO and PRO Product Website.

8/ BIOS

The AMI uEFI BIOS preferences are preset and do not require further adjustment for operation. The AMI BIOS setup menus and available selection may vary. For specific Information on the BIOS for your product, contact Kontron Support.



The BIOS version covered in this document might not be the latest version. The latest version might have certain differences to the BIOS options and features described in this chapter. For the BIOS Information specific for your product, please contact Kontron Support.

The AMI's ROM BIOS Built-in Setup program allows the user to modify the basic system configuration and hardware parameters. The modified data will be stored in a battery-backed CMOS, so that data is retained even when the power is turned off. In general, the information saved in the CMOS RAM does not need to be changed unless there is a configuration change in the system, such as a hard drive replacement or when a device is added.

It is possible for the CMOS battery to fail, which causes data loss in the CMOS only. If CMOS data is lost, then the BIOS settings need to be reconfigured.

The Setup program allows for access to various menus that provide functions or access to sub-menus with further specific functions of their own.

To start the Setup program, follow the steps below:

1. Power on the product
2. Wait until after first characters appears from the self-test (POST messages) begins but before the operating system (OS) boot begins to press .
3. Bios Setup menu utility starts and the Main Menu appears.

The BIOS Setup program uses a hot key navigation system. The hot key legend bar is located at the bottom of the Setup screens. The following table provides a list of navigation hot keys available in the legend bar.

Table 11: Navigation Hot Keys Available in the Legend Bar

<→> or <←>	<Left/Right> arrows selects major Setup menus on menu bar, for example, Main or Advanced
<↑> or <↓>	<Up/Down> arrows select fields in the current menu, for example, Setup function or sub-screen
<ENTER>	<ENTER> selects the highlighted value
<->	<Minus> key selects the next lower value within a field
<+>	<Plus> key selects the next higher value within a field
<F1>	<F1> key invokes the General Help window
<F2>	<F2> key loads previous values
<F3>	<F3> key loads optimized defaults
<F4>	<F4> key Saves and Exits
<ESC>	<ESC> key exits a major Setup menu and enters the Exit Setup menu Pressing the <ESC> key in a sub-menu displays the next higher menu level
<RETURN>	<RETURN> key executes a command or selects a submenu

8.1. Setup Menus

The Setup utility features menus listed in the selection bar at the top of the screen are:

- ▶ Main
- ▶ Advanced
- ▶ Boot
- ▶ Security
- ▶ Save & Exit

The currently active menu and the currently active BIOS Setup item are highlighted in white. Use the left and right arrow keys to select the Setup menus.

Each Setup menu provides two main frames. The left frame displays all available functions. Configurable functions are displayed in blue. Functions displayed in grey provide information about the status or the operational configuration. The right frame displays an explanation of the respective function in a help window.

8.2. Main Menu

The Main Menu provides System Overview information and allows you to set the System Time and Date. Use the "<" and ">" cursor keys to navigate between menu screens.

Figure 12: BIOS Main Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Product Information				→ ← Select Screen ↑↓ Select Item Enter: Select +- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4 Save & Exit ESC Exit
Product Name		KEEX-1760		
BIOS Version		R0.0A (x64)		
BIOS Build Date		05/26/2014		
ME FW Version		01.01.00.1089		
CPU Information				
Intel® Celeron® CPU J1900@1.99GHz				
Microcode Revision		809		
Processor Cores		4		
Memory Information				
Total Size		4096 MB (DDR3L)		
Frequency		1333 MHz		
System date		[Mon 05/26/2014]		
System time		[13:23:12]		
Access Level		Administrator		
Version 2.16.1242. Copyright (C) 2013, American Megatrends, Inc.				

8.3. Advanced Menu

The Advanced Setup menu displays sub-screens and second level sub-screens with functions, for advanced configurations.

Figure 13: Advanced Menu

BIOS SETUP UTILITY		
Main	Advanced	Boot Security Server Mgmt Save & Exit
Onboard LAN1 Controller	[Enabled]	Enable or Disable Onboard LAN1.
Onboard LAN1 Boot	[Disabled]	
Onboard LAN2 Controller	[Enabled]	
Onboard LAN2 Boot	[Disabled]	
Audio Controller	[Enabled]	
>Display Configuration >Super IO Configuration >Power Management Configuration >CPU Advanced Configuration >Trusted Computing >SATA Configuration >Intel TXT(LT) Configuration >AMT Configuration >USB Configuration >H/W Monitor		→ ← Select Screen ↑↓ Select Item Enter: Select +- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4 Save & Exit ESC Exit
Version 2.10.1208. Copyright (C) 2010, American Megatrends, Inc.		

The following table gives more information for important setup options within the Advanced Menu. Default settings are displayed in bold.

Table 12: Advanced Menu

Sub-screen	Additional Sub-screens with Description	
Onboard LAN 1 Controller	[Enabled, Disabled]	
Onboard LAN 1 Boot	[Enabled, Disabled]	
Onboard LAN 2 Controller	[Enabled, Disabled]	
Onboard LAN 2 Boot	[Enabled, Disabled]	
Audio Controller	[Enabled, Disabled]	
Display Configuration>	Primary Display>	[Auto, IGD]
	UMA Frame Buffer Size>	[128MB, 256MB , 512MB]
	DVMT Pre-Allocated>	[64M , 96M, 128M, 160M, 192M, 224M, 256M, 288M, 320M, 352M, 384M, 416M, 448M, 480M, 512M]

Sub-screen	Additional Sub-screens with Description		
Display Configuration> (continued)	DVMT Total Gfx Mem>	[128M, 256M , MAX]	
	Primary IGFX Boot Display>	[VBIOS Default , CRT, HDMI, LVDS]	
	Active LVDS>	[Enabled, Disabled]	
Super IO Configuration>	Serial Port 1 Configuration >	Serial Port>	[Enabled , Disabled]
		Change Settings>	[Auto]
		Device Settings>	IO=3F8h; IRQ=4; IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;
		Serial Port 1 Type>	[RS232 , RS422, RS485]
	Serial Port 2 Configuration>	Serial Port>	[Enabled , Disabled]
		Change Settings>	[Auto]
		Device Settings>	IO=2F8h; IRQ=3; IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12
		Serial Port 2> Type	[RS232 , RS422, RS485]
	Serial Port 3 Configuration>	Serial Port>	[Enabled , Disabled]
		Change Settings>	[Auto]
		Device Settings>	IO=3E8h; IRQ=7; IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2F0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2E0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;
	Serial Port 4 Configuration>	Serial Port>	[Enabled , Disabled]
		Change Settings>	[Auto]
		Device Settings>	IO=2E8h; IRQ=7; IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2F0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2E0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;
	Serial Port 5 Configuration>	Serial Port>	[Enabled , Disabled]
Change Settings>		[Auto]	
Device settings>		IO=2F0h; IRQ=7; IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;	

Sub-screen	Additional Sub-screens with Description		
Super IO Configuration> (continued)	Serial Port 5 Configuration> (continued)		IO=2F0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2E0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;
	Serial Port 6 Configuration>	Serial Port>	[Enabled, Disabled]
		Change Settings>	[Auto]
		Device Settings>	IO=2E0h; IRQ=7; IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2F0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2E0h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12;
Power Management Configuration>			
CPU Advanced Configuration>	EIST>		[Enabled, Disabled]
	Turbo Mode>		[Enabled, Disabled]
	Limit CPUID Maximum>		[Enabled, Disabled]
	Execute Disable Bit>		[Enabled, Disabled]
	Intel® Virtualization Tech		[Enabled, Disabled]
Trusted Computing>			
SATA Configuration>	SATA>		[Enabled, Disabled]
	SATA Mode>		[IDE Mode, AHCI Mode]
	Serial ATA Port 1		
	Port 1>		[Enabled, Disabled]
	mSATA Port 1		
	Port 1		[Enabled, Disabled]
USB Configuration>	Legacy USB Support>		[Enabled, Disabled]
	XHCI Legacy Support>		[Enabled, Disabled]
	XHCI hand-off>		[Enabled, Disabled]
	EHCI hand-off>		[Enabled, Disabled]
	USB Mass Storage Driver Support>		[Enabled, Disabled]
DIO Configuration>	DIO-0>		[Output Low, Output High, Input]
	DIO-1>		[Output Low, Output High, Input]
	DIO-2>		[Output Low, Output High, Input]
	DIO-3>		[Output Low, Output High, Input]
	DIO-4>		[Output Low, Output High, Input]
	DIO-5>		[Output Low, Output High, Input]
	DIO-6>		[Output Low, Output High, Input]

Sub-screen	Additional Sub-screens with Description	
DIO Configuration> (continued)	DIO-7>	[Output Low , Output High, Input]
H/W Monitor>	CPU Warning Temperature>	[Disabled , 80, 85, 90, 95]
	CPU FAN Configuration>	
	FAN Setting>	[Manual Mode , Auto Mode]
Power Configuration>	ACPI Sleep State>	[Suspend Disabled, S1 (CPU Stop Clock), S3 (Suspend to RAM)]
	Restore AC Power Loss>	[Power Off , Power On, Last State]
	Resume From S3 By >PS/2 Keyboard>	[Enabled, Disabled]
	Resume From S3 By PS/2 Mouse>	[Enabled, Disabled]
	Resume By PCIE Device>	[Enabled, Disabled]
	Resume By RTC Alarm >	[Enabled, Disabled]
	EUP Power Saving Mode>	[Enabled, Disabled]
	Watchdog Timer Configuration>	WDT Function>

8.4. Boot Menu

The Boot Setup menu lists the dynamically generated boot-device priority order

Figure 14: Boot Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Boot Configuration Full Screen LOGO Display [Disabled] Setup Prompt Timeout 1 Bootup NumLock State [On] Keyboard Detect Warning [Enabled] CSM Support [Enabled] Boot Option Filter [Legacy Only]			→ ← Select Screen ↑↓ Select Item Enter: Select +- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4 Save & Exit ESC Exit	
Boot Option Priorities				
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.				

The following table gives more information for important setup options within the Boot Menu. Default setting are displayed in bold.

Table 13: Boot Setup Menu Sub-screens and Functions

Function	Description
Full Screen LOGO Display	Full Screen LOGO Display Options: [Disabled , Enabled]
Setup Prompt Timeout>	Displays number of seconds that the firmware waits for setup activation key The value 65535(0xFFFF) means an indefinite wait. [1]
Bootup NumLock State>	Selects keyboard NumLock state [ON , OFF]
Keyboard Detect Warning>	[Enabled , Disabled]
CSM Support>	[Enabled , Disabled]
Boot Option #1>	Sets the system boot order [UEFI and legacy, Legacy only , UEFI only, Disabled]

8.5. Secure Menu

The Security Setup menu provides information about the passwords and functions for specifying the security settings such as Hard Disk, user and master passwords.

Figure 15: Security Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Password Description If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights The password length must be in the following range: Minimum Length 3 Maximum length 20 Administrator Password User Password HDD Security Configuration: HDD 0: WDC WD1600BE			→ ← Select Screen ↑↓ Select Item Enter: Select +- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4 Save & Exit ESC Exit	
Version 2.16.1242. Copyright (C) 2013, American Megatrends, Inc.				

The following table gives more information for important setup options within the Security Menu. Default settings are displayed in bold.

Table 14: Security Setup Menu Sub-screens and Functions

Function	Description
Administrator Password>	Sets administrator password
User Password>	Sets user password
HDD Security Configuration>	Read Only Information Allows access to set, modify and clear Hard Disk user and master passwords. User Passwords need to be installed for Enabling Security. Master Password can be modified only when successfully unlocked with the Master Password in Post.

8.6. Save and Exit

Figure 16: Save and Exit Menu

BIOS SETUP UTILITY				
Main	Advanced	Boot	Security	Save & Exit
Save Changes and Reset Discard Changes and Reset Save Options Save Changes Discard Changes Restore Defaults			→ ← Select Screen ↑↓ Select Item Enter: Select +- Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4 Save & Exit ESC Exit	
Version 2.16.1242. Copyright (C) 2013, American Megatrends, Inc.				

The following table gives more information for important setup options within the Save and Exit Menu. Default settings are displayed in bold.

Table 15: Save and Exit Setup Menu Sub-screens and Functions

Function	Description
Save Changes and Reset>	Exits system after saving changes Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. The CMOS RAM is sustained by an onboard backup battery and stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select [Yes] to save changes and exit.
Discard Changes and exit>	Exits system setup without saving changes Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than system date, system time, and password, the BIOS asks for a confirmation before exiting.
Save Options>	Saves changes made so far for any setup options
Save Changes>	Saves changes made so far for any setup options
Discard Changes	Discards changes made so far to any of the setup values This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select [Yes] to discard any changes and load the previously saved values.
Restore Defaults>	Restores/loads standard default values for all setup options <u>Load Optimal Default values for all the setup values</u> This option allows you to load optimal default values for each of the parameters on the Setup menus, that provides the best performance settings The F9 key can be used for this operation. <u>Load Failsafe Default values for all the setup values</u> This option allows you to load failsafe default values for each of the parameters on the Setup menus, that provides the most stable performance settings. The F8 key can be used for this operation.

9/ Technical Support and Trouble Shooting

Before contacting Kontron for support of a technical problem, check Table 16: Troubleshooting information below to find out more about possible solutions. If the troubleshooting table does not contain a solution for the technical problem, contact Kontron Support (<http://www.kontron.com/support>).

To request support via e-mail, report documentation errors, or general customer feedback, use Kontron's Contact Support Request Form by visiting:

<http://www.kontron.com/about-kontron/company-overview/contact-us/forms/contact-support>.

In case the request form does not work or you do not get a response within 48 hours, send a follow up email to support@kontron.com

Make sure you have the following product identification information on hand when you call:

- ▶ Product name,
- ▶ Product model number
- ▶ Serial number (SN) of the unit

Be ready to explain the nature of your problem to the service technician.



The serial number can be found on the Type Label, placed on the rear side of the system.

9.1. TroubleShooting

Before contacting Kontron support, check the following suggestions for a possible quick solution.

Table 16: Troubleshooting

No Image Displayed	
Is the power cord connected to the monitor?	Check and make sure that the power cord is connected to both the monitor and the power outlet
Is the power LED light next to the power switch on?	Press the power button to switch on the monitor. The LED should be green. Connect the power cable to the outlet.
Is the power LED orange?	Press Auto Adjust Is the graphic card working normally?
Is the power on but you still don't have a picture?	Adjust brightness and contrast
Do you see a "No Signal" message?	If the monitor is on "No Signal" the device goes into the sleeping mode/ shuts down.
Display Image is Incorrect	
Display position is incorrect.	Press AUTO adjust to automatically adjust your display to the ideal setting.
Vertical bars and stripes appear on the screen?	Press AUTO adjust to automatically adjust your display to the ideal setting.
The color of the screen is abnormal/ pixels don't match/ noise	Check if the signal cable is properly attached. Set the color settings in the Control Panel: Contrast or Color Temperature

10/ Warranty

Kontron defines product warranty in accordance with regional warranty definitions. Claims are at Kontron's discretion and limited to the defect being of a material nature. To find out more about the warranty conditions and the defined warranty period for your region, following the steps below:

1. Visit Kontron's Term and Conditions webpage.
<http://www.kontron.com/terms-and-conditions>
2. Click on your region's General Terms and Conditions of Sale.

10.1. Limitation/Exemption from Warranty Obligation

In general, Kontron shall not be required to honor the warranty, even during the warranty period, and shall be exempted from the statutory accident liability obligations in the event of damage caused to the product due to failure to observe the following:

- ▶ General safety instructions for IT equipment within this user guide
- ▶ Warning labels on the product and warning symbols within this user guide
- ▶ Information and hints within this user guide

Additionally, alterations or modifications to the product that are not explicitly approved by Kontron, described in this user guide, or received from Kontron Support as a special handling instruction will void your warranty.

Due to their limited service life, parts which by their nature are subject to a particularly high degree of wear (wearing parts) are excluded from the warranty beyond that provided by law.



If the FlatClient XXL ECO and PRO is opened, the warranty is lost!

10.2. Returning Defective Merchandise

All equipment returned to Kontron must have a Return Material Authorization (RMA) number assigned exclusively by Kontron. Kontron cannot be held responsible for any loss or damage caused to the equipment received without an RMA number. The Buyer accepts responsibility for all freight charges for the return of goods to Kontron's designated facility. Kontron will pay return freight charges back to the Buyer's location in the event that the equipment is repaired or replaced within the stipulated warranty period. Follow these steps before returning any product to Kontron.

1. Visit the RMA Information website:



Kontron's RMA Information website can be found at:
<http://www.kontron.com/support-and-services/support/rma-information>

RMA INFORMATION

RMA (Return of Material Authorization) Procedures

All equipment returned to Kontron must have a Return Material Authorization (RMA) number assigned exclusively by Kontron. Kontron cannot be held responsible for any loss or damage caused to the equipment received without an RMA number. The Buyer accepts responsibility for all freight charges for the return of goods to Kontron's designated facility. Kontron will pay return freight charges back to the Buyer's location in the event that the equipment is repaired or replaced within the warranty period stipulated herewith.

Kontron provides a customer oriented RMA-service in order to get your unit repaired very fast and efficiently. Please refer to the instructions outlined in the RMA procedures of the individual entities:

KONTRON AMERICA

- ▶ [Kontron America](#)
- ▶ [Kontron Canada](#)

KONTRON EUROPE

- ▶ [Kontron Europe GmbH - Deggendorf](#)
- ▶ [Kontron Europe GmbH - Augsburg](#)
- ▶ [Kontron Modular Computers S.A.S. - Toulon](#)

KONTRON ASIA PACIFIC

- ▶ [Kontron Penang](#)
- ▶ [Kontron Beijing](#)

Download the RMA Request sheet for Kontron Europe GmbH – Augsburg and fill out the form. Take care to include a short detailed description of the observed problem or failure and to include the product identification (product name, material number and serial-number). If more than one product is sent in a delivery. Fill out the above information in the RMA Request form for each product.

2. Send the completed RMA-sheet to the given fax- or email-address at Kontron Europe GmbH. Kontron Europe GmbH will provide an RMA-Number within one business day.
3. The goods for repair shall be packed properly for shipping, considering shock- and ESD-protection.



Goods returned to Kontron Europe GmbH in non-proper packaging are considered as customer caused faults and cannot be accepted as warranty repairs.

4. Add the RMA-sheet to the relevant delivery address and include the RMA-No with the shipping paperwork.
Sent the product to the following delivery address:

Kontron Europe GmbH

RMA Support

Lise-Meitner-Str. 3-5

86156 Augsburg

Germany

Phone: +49 (0) 821 4086-0

Fax: +49 (0) 821 4086 111

Email: service@kontron.com

5. After Kontron Europe GmbH receives the product, a confirmation of the order is sent via email to the address named on the RMA sheet.

11/Storage, Transportation and Maintenance

11.1. Storage

If the product is not in use for an extended period time, disconnect the power plug from the AC outlet .If it is necessary to store the product then re-pack the product as originally delivered to avoid damage. The storage facility must meet the products environmental storage requirements as stated within this user guide. Kontron recommends keeping all the original packaging material for future storage or warranty shipments.

11.2. Transportation

To ship the product use the original packaging, designed to withstand impact and adequately protect the product. When packing or unpacking products always take shock and ESD protection into consideration and use an EOS/ESD safe working area.

11.3. Maintenance

In order to maintain condition and ensure safe operation, observe the instructions and warnings contained in this user guide.

Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Maintenance or repair on the open product may only be carried out by qualified personnel authorized by Kontron.

⚠ WARNING

Do not open the FlatClient XXL ECO and PRO housing. No user-serviceable parts inside.
Danger due to high voltages.

11.3.1. Cleaning the Screen

Read the following instructions, before cleaning the surface of the display screen with a soft, dry and clean lint-cloth to eliminate dust and particles of dirt the screen.

NOTICE

Particles may scratch the surface. Do not apply any pressure.
Use commercially available glass cleaner.

NOTICE

Do not pour or spray any liquid directly onto the display screen.
Chemical cleaners may damage the screen.

11.3.2. Cleaning the Housing

The housing meets the IP54 protection classification, to stops dust from entering and protect against light sprayed water. When cleaning the housing use a soft moist cloth to remove dirt gently from the housing.

NOTICE

Do not pour or spray any liquid directly onto housing.
Chemical cleaners may damage the housing.

12/ Disposal

Final disposal of this product after the product's service life must be accomplished in accordance with the applicable country, state, or local laws or regulations.



Kontron manufactures products to satisfy environmental protection requirements where possible. Many of the components used are capable of being recycled.

Kontron follows the Waste Electrical and Electronic Equipment (WEEE) Directive that aims to reduce waste arising from Electrical and Electronic waste and therefore encourages customers to return Kontron products for proper disposal. For more information regarding WEEE compliance, see the Disposal and Recycling section at the start of this user guide.



About Kontron

Kontron is a global leader in embedded computing technology (ECT). As a part of technology group S&T, Kontron offers a combined portfolio of secure hardware, middleware and services for Internet of Things (IoT) and Industry 4.0 applications. With its standard products and tailor-made solutions based on highly reliable state-of-the-art embedded technologies, Kontron provides secure and innovative applications for a variety of industries. As a result, customers benefit from accelerated time-to-market, reduced total cost of ownership, product longevity and the best fully integrated applications overall. For more information, please visit: www.kontron.com



Global Headquarters

Kontron S&T AG

Lise-Meitner-Str. 3-5
86156 Augsburg
Germany
Tel.: + 49 821 4086-0
Fax: + 49 821 4086-111
info@kontron.com