

**List of  
Equipment &  
Other  
Instructional  
Materials**



COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY

INVENTORY OF ENGINEERING LAB EQUIPMENT TOOLS APARATUSSSES AS OF JULY 17, 2019

QTY	UNIT	DESCRIPTION	PRESENT COUNT	USERS	STATUS	
					FUNCTION ALL	NOT FUNCTIONAL
1	unit	Wheeler DC-Power supply	1	ECE/CpE/EE	All	
1	unit	R2K Analog Experimenter Educational Trainer	1	ECE/CpE/EE	All	
1	unit	R2k Digital Experimenter Educational Trainer	1	ECE/CpE/EE	All	
1	unit	Mini PCB Drill	1	ECE/CpE/EE	All	
1	unit	Timer	1	ECE/CpE/EE	All	
2	unit	Digital Synthesizer Function Generator	2	EE	All	
2	unit	PC-Based Microprocessor Development Trainer	2	ECE/CpE/EE	All	
2	unit	Overload Relay	2	EE	All	
3	unit	MD 8086 Trainer Kit	3	ECE/CpE/EE	All	
3	unit	Digital Storage Oscilloscope	3	ECE/CpE/EE	All	
3	unit	Combination Pliers	3	ECE/CpE/EE	All	
3	unit	Push button switch (forward, stop, reverse)	3	EE	All	
4	unit	Linear IC Trainer Kit	4	ECE/CpE/EE	All	
4	unit	Digital IC Trainer Kit	4	ECE/CpE/EE	All	
4	unit	Clamp Meter	4	EE	All	
4	unit	Magnetic Contactor	4	EE	All	
3	unit	Digital Multi Tester SAMWA	3	ECE/CpE/EE	All	
3	unit	Analog Multi Tester Sanwa	3	ECE/CpE/EE	All	
5	unit	Long Lose Pliers	5	ECE/CpE/EE	All	
5	unit	Philip Screw driver	5	ECE/CpE/EE	All	
5	unit	Side Cutter	5	ECE/CpE/EE	All	
5	unit	Desoldering Pump	5	ECE/CpE/EE	All	
5	unit	40W Soldering Iron	5	ECE/CpE/EE	All	
5	unit	60W Soldering Iron	5	ECE/CpE/EE	All	
5	unit	Precision screw driver	5	ECE/CpE/EE	All	
5	unit	Soldering Stand	5	ECE/CpE/EE	All	





Republic of the Philippines  
**SURIGAO STATE COLLEGE OF TECHNOLOGY**  
 Narciso Street, Surigao City



"For Nation's Greater Heights"

CERTIFICATE NUMBER: AJA19-0225

3	unit	Magnetic Contactor with 2N open, 2N close	3	ECE/EE	All
5	unit	Overload Relay, 3 phase	5	ECE/EE	All
4	unit	On Delay Timer (0 min – 2 hrs.) Anley 200-240 with socket	4	ECE/EE	All
2	unit	On Delay Timer (0 min – 1 hr.) Anley 200-240 with socket	2	ECE/EE	All
5	unit	Long nose plier (Stanley) 8"	5	ECE/EE	All
5	unit	Size Nose Plier (Stanley) 7"	5	ECE/EE	All
10	unit	LCD Projector 3000 lumens with tripod	10	ECE/CpE/EE	All
1	unit	Barcode Reader	1	ECE/EE	All
5	unit	Desoldering Pump, big	5	ECE/EE	All
1	unit	Hydraulic Universal Testing Machine with Series Computer Displays	1	EE/CE	All
1	unit	Hydraulic Bench, Model H1D	1	EE/EC	All
1	unit	Bernoulli's Theorem Apparatus; Model HS	1	EE/EC	All
1	unit	Stability of Floating Body Apparatus	1	EE/EC	All
1	unit	Hydrostatic Pressure Measurement Apparatus; Model H11	1	EE/EC	All
1	unit	Orifice and Jet Flow; Model H33	1	EE/EC	All
1	unit	Electronics Digital Theodolite	1	EE/EC	All
2	unit	Brunton Compass	2	EE/EC	All
2	unit	Measuring Tape 100m	2	EE/EC	All
5	unit	Spatula Stainless, Steel 10.5"	5	EE/EC	All
3	unit	Stirring Glass Rod, 6mm x 12"	3	EE/EC	All
2	unit	Gillmore or Vicat Apparatus	2	EE/EC	All
1	unit	Vicat Test set, ASTM Method	1	EE/EC	All
1	unit	Gillmore Apparatus, 53-L0075	1	EE/EC	All
1	unit	Graduated Cylinder 1.0 Liter pyrex	1	EE/EC	All
1	unit	Balance 6 kg. Capacity, 0.1g accurate	1	EE/EC	All
4	unit	Paint Brush # 1 ½	4	ECE/CpE/EE	All
2	unit	Electrical Tape	2	ECE/CpE/EE	All
5	unit	Plug Adaptor	5	ECE/CpE/EE	All
2	unit	Soldering Lead SM Size Rubicon	2	ECE/CpE/EE	All
5	unit	Soldering Tip 10W	5	ECE/CpE/EE	All
5	unit	Soldering Tip, 60W	5	ECE/CpE/EE	All
90	unit	HP 280 Microtower Business Desktop with HP P223 21.5" LED Monitor (with Licensed)	90	CpE/IT/CS/IS	All
28	unit	Television Set	28	CEIT	All
12	unit	Portable Programmable Logic Controller Trainer; Mdl: SMCT-V70125STEPLCBX, Manufacturer: Shoketsu SMC Corporation; Made in Japan (model SMCT-V7 V01255TEDPLEX)	12	ECE	All
2	unit	Earth Resistance Tester; Mdl 4106; Manufacturer, Made in Japan (5N #	2	ECE	All





2	unit	Digital Storage Oscilloscope; Manufacturer: Rigol Technologies Inc.; Made in USA (SN#DS20204102843/DS20204102890)	2	ECE	All	
2	unit	Educational Laboratory Virtual Instrumentation Suite;(Elvis II+), Mdl: 780378-02; Manufacturer: National Instrument; USA; Assembled In Hungary	2	ECE	All	
2	unit	Digital Electronic Laboratory Application Board;Mdl; 0708-INT-DE; Manufacturer: YEA Engineering; Made in Armenia (SN#110000020/SN#110000021)	2	ECE	All	
2	unit	Analog Electronic Laboratory Application Board; Mdl: 0708-PI-AE; Manufacturer: YEA Engineering; Made in Armenia	2	ECE	All	
2	unit	Electronics Engineering Application Board; Mdl: 784720-01; Manufacturer: National instruments; made in USA; Assembled in Armesia	2	ECE	All	
2	unit	Industrial Electronic Application Board; Mdl: 0708-INT-IE; Manufacturer: YEA Engineering made in Armenia	2	ECE	All	
1	unit	Digital System Development Board; Mdl: 784972-01; Manufacturer: National instruments; made in USA; Assembled in Hungary SN#HCS945676	1	ECE	All	
2	unit	Direct Digital synthesis Function Generator; Mdl: DG1022; Manufacturer: Rigol technologies inc.: Made in USA	2	ECE	All	
1	unit	Pneumatic and Electro-Pneumatic with PLC Training System: Mdl: SMCT-ALLUPROCOMPLETE-V2 Manufacturer: Shoketsu SMC Corporation Made in Japan/Singapore	1	EE	All	
1	unit	Antenna Lab Test Bench Computer Based; Mdl: 0708 INT-ANT; Manufacturer: YEA Engineering & national Instruments; Made in Armesia/USA	1	EE	All	
1	unit	Transmission Line Trainer; Mdl; ELT; Manufacturer Edibon Int'l; Made in Spain (SN#ELT0019)	1	EE	All	

Prepared by:

**JOCELYN A. QUITALIG**  
 Engineering Laboratory in Charge

# EPSON L120 Series Advanced Driver Settings

Paper Source : Rear Paper Feed

Document Size : Letter 8 1/2 x 11 in

Orientation : Portrait

Paper Type : plain papers

Quality : Standard

Quality Detail : Level 1(1)

Color : Color

Reduce/Enlarge Document : Off

2-Sided Printing : Off

Create Folded Booklet : Off

Pages per Sheet : Off

Poster : Off

Copies : 1

Collate : Off

Reverse Order : Off

Rotate 180° : Off

Mirror Image : Off

Color Management : Color Controls

Color Mode : EPSON Vivid

Gamma : 2.2

Edge Smoothing : On

Watermark : None

Header/Footer : Off

Emphasize Thin Lines : Off

Emphasize Text : Off

High Speed : On

Fix Red-Eye : Off



## Microsoft Open License Purchase Order 100165006 Confirmation

- Authorization Number: 01714847ZZE2010
- License Number: 87284669
- Distributor Purchase Order Number: 100165006
- License Date: 2018-10-29
- Agreement Information: Z Academic
- Reorder/Software Assurance End Date: 2020-10-31
- Indirect Reseller: Microgenesis Business Systems

### Licensee

- Surigao State College of Technology
- 04208 Narciso St., Surigao City Philippines

### Line Items

Product Description	Microsoft Part Number	Version	Quantity
Microsoft®WindowsProfessional 10 Sngl Upgrade Academic OLP 1License NoLevel	FQC-09512	10	41

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## Microsoft Open License Purchase Order 100165005 Confirmation

- Authorization Number: 01715131ZZE2010
- License Number: 87284670
- Distributor Purchase Order Number: 100165005
- License Date: 2018-10-29
- Agreement Information: Z Academic
- Reorder/Software Assurance End Date: 2020-10-31
- Indirect Reseller: Microgenesis Business Systems

### Licensee

- Surigao State College of Technology
- 04208 Narciso St., Surigao City Philippines

### Line Items

Product Description	Microsoft Part Number	Version	Quantity
Microsoft@WINHOME 10 Sngl Academic OLP 1License NoLevel Legalization GetGenuine	KW9-00311	10	41

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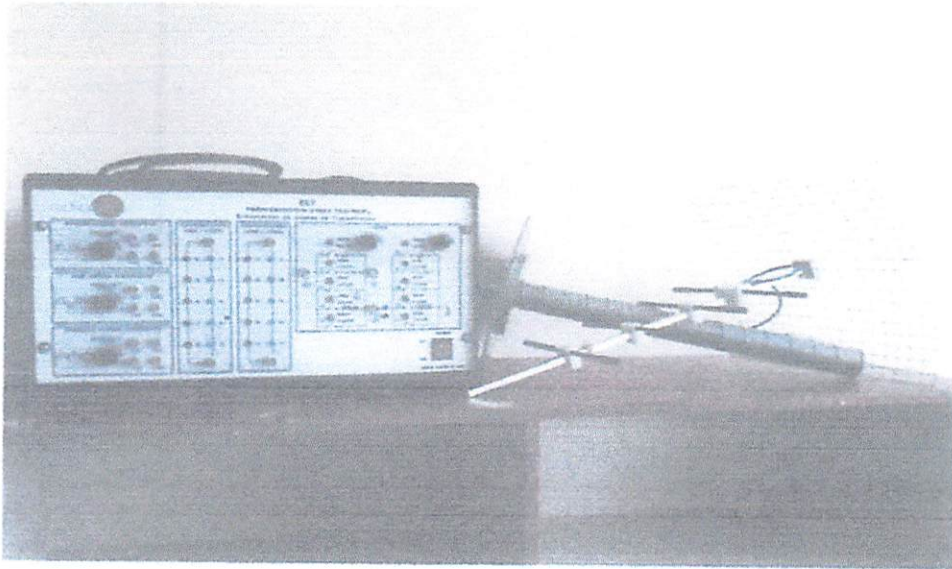


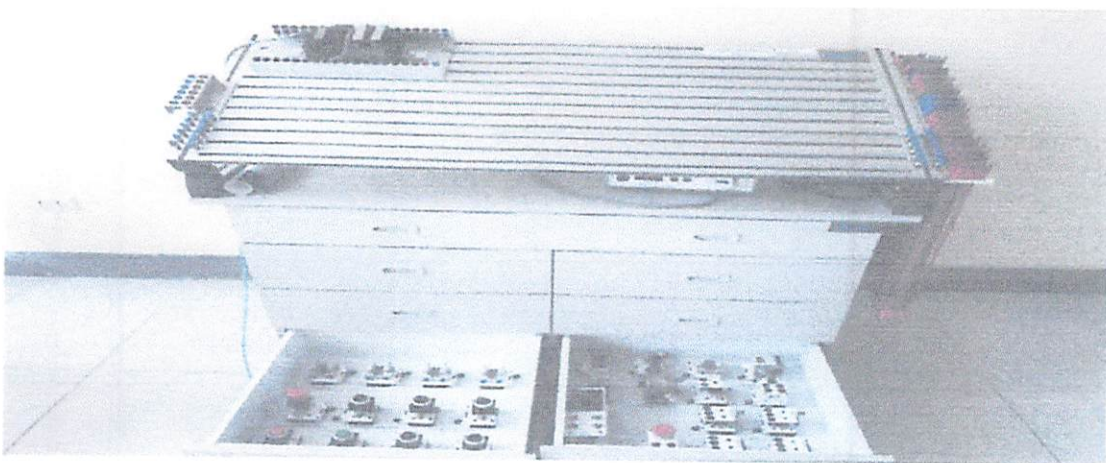
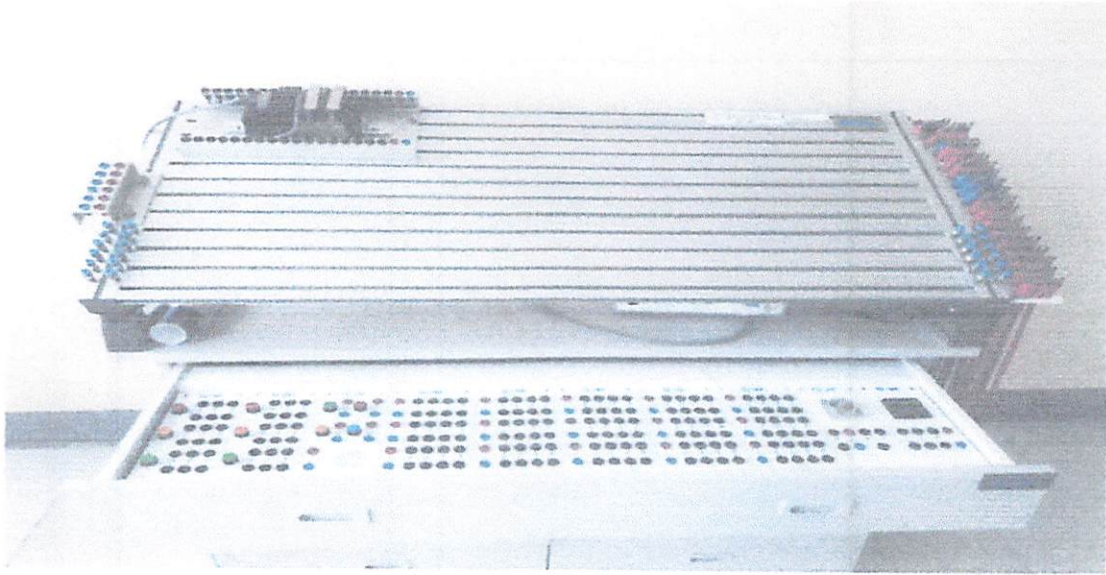
CERTIFICATE NUMBER: AJA19-0225



LCD Projector















# Microsoft Volume Licensing Service Center

[Home](#) [Licenses](#) [Online Service Activation](#) [Downloads and Keys](#) [Software Assurance](#) [Subscriptions](#) [Administration](#) [Help](#)

## Downloads and Keys

[Downloads FAQ](#)  
49 of 59 items

Export all keys (.CSV)

### Filter

- All Products (59)
- Servers (3)
- Software Assurance (7)
- Windows (28)
- Windows Server (26)

Product Name	Download Type	Download Link	Key Type
Windows Server Enterprise 2012 R2	Download	Download	Key
Windows Server Enterprise 2012 R2 (with updates)	Download	Download	Key
Windows Server Enterprise (2012 R2) with SP1	Download	Download	Key
Windows Server Enterprise (with updates)	Download	Download	Key
Windows Server Standard 2012 R2	Download	Download	Key
Windows Server Standard (2012 R2) Server Pack 1	Download	Download	Key
Windows Server Standard (with updates) SP1	Download	Download	Key
Windows Server SP1	Download	Download	Key
Windows Web Server 2012 R2	Download	Download	Key
Windows Web Server 2012 R2 Service Pack 1	Download	Download	Key
Windows Web Server 2012 R2 (with updates)	Download	Download	Key

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# Microsoft Volume Licensing Service Center

Home Licenses Online Service Activation Downloads and Keys Software Assurance Subscriptions Administration Help

## Downloads and Keys

Downloads FAQ  
33 - 68 of 58 items

Export all keys (.CSV)

### Filter

- All Products (58)
- Services (3)
- Software Assurance (7)
- Windows (28)
- Windows Server (28)

Product Name	Description	Download	Key
Windows 8.1 - Multilingual Pack	Description	Download	Key
Windows 8.1 - Retail	Description	Download	Key
Windows HPC Server OS 2008 R2	Description	Download	Key
Windows HPC Server OS 2012 (64-bit)	Description	Download	Key
Windows Server 2012 Essentials	Description	Download	Key
Windows Server 2012 Language Pack	Description	Download	Key
Windows Server 2012 R2 Essentials	Description	Download	Key
Windows Server 2012 R2 Language Pack	Description	Download	Key
Windows Server 2012 R2 Standard	Description	Download	Key
Windows Server 2012 Standard	Description	Download	Key
Windows Server 2012 Essentials	Description	Download	Key
Windows Server 2012 Essentials	Description	Download	Key
Windows Server 2012 Language Pack	Description	Download	Key
Windows Server 2012 Standard	Description	Download	Key

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# Microsoft Volume Licensing Service Center

Home Licenses Online Service Activation Downloads and Keys Software Assurance Subscriptions Administration Help

## Downloads and Keys

19 Downloads FAQ  
17 - 42 of 59 items

Export all keys (2)

**Filter**

- All Products (59)
- Server (3)
- Software Assurance (7)
- Windows (28)
- Windows Server (26)

Windows 7 Professional (with SP1)	Description	Download	Key
Windows 7 Professional K	Description	Download	Key
Windows 7 Professional (No Upgrade)	Description	Download	Key
Windows 7 Professional with Embedded SP1	Description	Download	Key
Windows 7 Professional (64-bit)	Description	Download	Key
Windows 7 Professional (64-bit) (with SP1)	Description	Download	Key
Windows 7 Professional (64-bit) (with SP1)	Description	Download	Key
Windows 7 Professional (with SP1)	Description	Download	Key
Windows 7 Professional Service Pack	Description	Download	Key
Windows 7 Professional Upgrade	Description	Download	Key
Windows 7 Professional Upgrade with SP1	Description	Download	Key
Windows 7 Professional with SP1	Description	Download	Key
Windows 7 Pro	Description	Download	Key
Windows 7 Pro K	Description	Download	Key
Windows 7 Pro (64)	Description	Download	Key

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# MICROSOFT Volume Licensing Service Center

[Home](#) [Licenses](#) [Online Service Activation](#) [Downloads and Keys](#) [Software Assurance](#) [Subscriptions](#) [Administration](#) [Help](#)

## Downloads and Keys

[Downloads FAQ](#)  
1 - 16 of 59 items

Export all keys: CSV

### Filter

- All Products (59)
- Server (8)
- Software Assurance (7)
- Windows (26)
- Windows Server (25)

	Description	Download	Key
Microsoft Identity Manager 2010 SP1	Description	Download	Key
Microsoft Identity Manager 2010 SP2 x64 (SP)	Description	Download	Key
Microsoft Identity Manager 2010	Description	Download	Key
Microsoft Identity Manager 2010 SP1	Description	Download	Key
Microsoft Identity Manager 2010 x64 (SP)	Description	Download	Key
Windows 10 Inbox Setup	Description	Download	Key
Windows 10 Pro N / Windows 10 Pro N for Workstations	Description	Download	Key
Windows 10 Pro/Windows 10 Pro for Workstations	Description	Download	Key
Windows 10 Professional Evaluation German	Description	Download	Key
Windows 10 Professional ISO	Description	Download	Key
Windows 10 Professional Language Pack	Description	Download	Key
Windows 7 Local Pack	Description	Download	Key
Windows 7 Professional	Description	Download	Key
Windows 7 Professional	Description	Download	Key
Windows 7 Professional 32-bit x86	Description	Download	Key
Windows 7 Professional 64-bit x64	Description	Download	Key

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Home Licenses Online Service Activation Downloads and Keys Software Assurance Subscriptions Administration Help

## Downloads and Keys

[Downloads FAQ](#)

1 - 16 of 32 items

Export all keys CSV

**Filter**

- All Products (32)
- Services (3)
- Windows Server (29)

Product Name	Description	Download	Key
Microsoft Identity Manager (2016)	Description	Download	Key
Microsoft Identity Manager (2016) 32-bit (SP1)	Description	Download	Key
Microsoft Identity Manager (2016)	Description	Download	Key
Microsoft Identity Manager (2016) SP1	Description	Download	Key
Microsoft Identity Manager (2016) 64-bit (SP1)	Description	Download	Key
Windows HPC Server-GS (2008 R2)	Description	Download	Key
Windows HPC Server-GS (2008 R2) with SP1	Description	Download	Key
Windows Server 2012 Essentials	Description	Download	Key
Windows Server 2012 Language Packs	Description	Download	Key
Windows Server 2012 R2 Essentials	Description	Download	Key
Windows Server 2012 R2 Language Packs	Description	Download	Key
Windows Server 2012 R2 Standard	Description	Download	Key
Windows Server 2012 R2 Standard	Description	Download	Key
Windows Server 2012 R2 Essentials	Description	Download	Key
Windows Server 2012 R2 Essentials (SP1)	Description	Download	Key
Windows Server 2012 R2 Standard	Description	Download	Key

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Items per page: 16

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# Microsoft Volume Licensing Service Center

Home Licenses Online Service Activation Downloads and Keys Software Assurance Subscriptions Administration Help

## Downloads and Keys

99 Downloads and Keys  
17 of 32 items

Export all keys (.xml)

### Filter

- All Products (32)
- Server (5)
- Windows Server (29)

Product Name	Description	Download	Key
Windows Server Enterprise E01	Description	Download	Key
Windows Server Enterprise E02 E02	Description	Download	Key
Windows Server Enterprise 2008 R2 Service Pack 1	Description	Download	Key
Windows Server Enterprise 2008 R2 Service Pack 2	Description	Download	Key
Windows Server Language Packs (2008 R2)	Description	Download	Key
Windows Server Language Packs (2008 R2) Standard	Description	Download	Key
Windows Server Language Packs (2008 R2) Windows 7 SP1	Description	Download	Key
Windows Server Language Packs (2008 R2) with SP1	Description	Download	Key
Windows Server Essentials	Description	Download	Key
Windows Server Standard 2008 R2	Description	Download	Key
Windows Server Standard 2008 R2 Service Pack 1	Description	Download	Key
Windows Server Standard 2008 R2 with SP1	Description	Download	Key
Windows Small Business Server 2011	Description	Download	Key
Windows Small Business Server 2011	Description	Download	Key
Windows Small Business Server 2011 R2	Description	Download	Key
Windows Small Business Server 2011 R2 Service Pack 1	Description	Download	Key

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Items per page: 15

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**CEIT COMPUTER LABORATORY 01**  
*(as of July 2019)*

ITEM	Description	Quantity
Desktop Computer	HP 280 Microtower Business Desktop with 2GB Graphics Card and HP P223 21.5" LED Monitor  <ul style="list-style-type: none"> <li>• Processor: Intel Core i5-7500 3.4 GHz 4- Cores 4-Threads</li> <li>• Chipset: Intel H110 Chipset</li> <li>• Form Factor: Micro tower</li> <li>• Hard Drive: 1TB 7200 rpm SATA 6G 3.5"</li> <li>• Memory: 8GB DDR4 UDIMM NECC Unbuffered Memory (32GB Max)</li> <li>• Input: PS/2 Keyboard and Optical USB Mouse</li> <li>• Network: Integrated 10/100/1000 Ethernet, supports Wake-on-LAN</li> <li>• Graphics: Integrated Intel HD 360 (Shared memory use ranges from up to 1.7 GB or Higher depending on computer configuration)</li> <li>• Integrated Display Ports: VGA and HDMI Video interface</li> <li>• Ports: 4 x USB 3.0 (2 Front, 2 Rear), 4 x USB 2.0 (Rear)</li> <li>• Security Features: TPM 2.0 Security Cable Slot</li> <li>• Audio: Integrated HD Audio, Combo Mic/ Headphone Jack,</li> <li>• Internal Speaker, Line In, Line Out</li> <li>• Power Supply: 180 Watts Active PFC</li> </ul>	36
Network Switch	Dlink 24 Ports DGS 1024 Giga Switch	2

**TOTAL**

System Unit:	36
Monitor:	36
Keyboard:	36
Mouse:	36
UPS:	36
Network Switch:	2

Prepared by:

*KIM FRIAS*  
**KIM FRIAS**  
 Computer Technician



**CEIT COMPUTER LABORATORY 02**  
*(as of July 2019)*

ITEM	Description	Quantity
Desktop Computer	HP 280 Microtower Business Desktop with 2GB Graphics Card and HP P223 21.5" LED Monitor  <ul style="list-style-type: none"> <li>• Processor: Intel Core i5-7500 3.4 Ghz 4- Cores 4-Threads</li> <li>• Chipset: Intel H110 Chipset</li> <li>• Form Factor: Microtower</li> <li>• Hard Drive: 1TB 7200 rpm SATA 6G 3.5"</li> <li>• Memory: 8GB DDR4 UDIMM NECC Unbuffered Memory (32GB Max)</li> <li>• Input: PS/2 Keyboard and Optical USB Mouse</li> <li>• Network: Integrated 10/100/1000 Ethernet, supports Wake-on-LAN</li> <li>• Graphics: Integrated Intel HD 360 (Shared memory use ranges from up to 1.7 GB or Higher depending on computer configuration)</li> <li>• Integrated Display Ports: VGA and HDMI Video Interface</li> <li>• Ports: 4 x USB 3.0 (2 Front, 2 Rear), 4 x USB 2.0 (Rear)</li> <li>• Security Features: TPM 2.0 Security Cable Slot</li> <li>• Audio: Integrated HD Audio, Combo Mic/ Headphone Jack.</li> <li>• Internal Speaker, Line in, Line Out</li> <li>• Power Supply: 180 Watts Active PFC</li> </ul>	36
Network Switch	Dlink 24 Ports DGS 1024 Giga Switch	2

<b>TOTAL</b>	
System Unit:	36
Monitor:	36
Keyboard:	36
Mouse:	36
UPS:	36
Network Switch:	2

Prepared by:

*Kims*  
**KIML. FRIAS**  
 Computer Technician



**CEIT COMPUTER LABORATORY 03**  
*(as of July 2019)*

ITEM	Description	Quantity
System Unit	Processor : intel core i3 2120 RAM: 2GB DDR3 HDD: 250 WD MOTHERBOARD: intel DH61HO POWER SUPPLY: ATX	16
System Unit	Processor : intel core i3 2120 RAM: 2GB DDR3 HDD: 250 WD MOTHERBOARD: intel DH61HW POWER SUPPLY: ATX	1
System Unit	Processor : intel core i3 2120 RAM: 2GB DDR3 HDD: 250 WD MOTHERBOARD: intel DH61HW POWER SUPPLY: ATX	1
System Unit	Processor : intel core i3 2120 RAM: 4GB DDR3 HDD: 500 Seagate MOTHERBOARD: intel DH61HO POWER SUPPLY: ATX	1
System Unit	Processor : intel core i3 2120 RAM: 4GB DDR3 HDD: 160 Seagate MOTHERBOARD: intel DH61HO POWER SUPPLY: ATX	12
System Unit	Processor : intel core i3 2120 RAM: 2GB DDR3 HDD: 500WD MOTHERBOARD: intel DH61HW POWER SUPPLY: ATX	1
System Unit	Processor : intel core i3 2120 RAM: 4GB DDR3 HDD: 500GB Seagate MOTHERBOARD: Gigabyte tech. co H81M-D32 POWER SUPPLY: ATX	1
System Unit	Processor : intel Core i3 4170 RAM: 2GB DDR3 HDD: 500 GB Seagate MOTHERBOARD: Gigabyte Tech. co LT-H81M-DS2POWER SUPPLY: ATX	1



System Unit	Processor : Intel core i3 2120 RAM: 4GB DDR3 HDD:500GB Seagate MOTHERBOARD: Gigabyte tech. co. H81M-DS2 POWER SUPPLY: ATX	1
Monitor	Acer LCD S191HQL	35
Monitor	Samsung	1
Keyboard	PS2	36
Mouse	PS2	36
AVR	Assorted	37
Network Switch	3COM 24 Ports Switch	1
Network Switch	TPILINK 24 Ports Fast Ethernet	1

**TOTAL**

System Unit:	36
Monitor:	36
Keyboard:	36
Mouse:	36
AVR:	37
Network Switch:	2

Prepared by:

*Kim*  
**KIM L. FRIAS**  
 Computer Technician





**CEIT COMPUTER LABORATORY 04**  
 (as of July 2019)

ITEM	Description	Quantity
System Unit	Processor : Intel Core i5 4690 RAM: 4gb DDR3 HDD: 500gb Seagate MOTHERBOARD: Asustek H81M-A POWER SUPPLY: ATX	26
System Unit	Processor : Intel Core i5 4690 RAM: 2gb DDR3 HDD: 500gb Seagate MOTHERBOARD: Asustek H81M-A POWER SUPPLY: ATX	1
System Unit	Processor : Intel Core i3 3240 RAM: 2gb DDR3 HDD: 160gb Seagate MOTHERBOARD: Asustek H51-E POWER SUPPLY: ATX	1
System Unit	Processor : Intel Core i3 2120 RAM: 2gb DDR3 HDD: 160gb Seagate MOTHERBOARD: Intel DH61HO POWER SUPPLY: ATX	5
Monitor	Samsung 733NW	36
UPS	APS 650	27
Keyboard	PS2	34
Mouse	PS2	34
AVR	Assorted	37
Network Switch	DLINK Web Smart Switch 24 Ports	1
Network Switch	3COM 24 Ports Switch	1

**TOTAL**

System Unit:	33
Monitor:	36
Keyboard:	36
Mouse:	36
AVR:	37
UPS:	27
Network Switch:	2

Prepared by:

*Kim*  
**KIM FRIAS**  
 Computer Technician



"For Nations' Greater Heights"

**CEIT COMPUTER LABORATORY 05**  
 (as of July 2019)

ITEM	Description	Quantity
System Unit	Processor: CORE i7 4790 RAM: 16GB DDR3 HDD: 500GB SEAGATE MOTHERBOARD: ASUS/STEK H81M-K POWER SUPPLY: ATX	28
System Unit	Processor: CORE i7 4790 RAM: 2GB DDR3 HDD: 100GB SEAGATE MOTHERBOARD: ASUS/STEK H81M-K POWER SUPPLY: ATX	1
Monitor	ACER LCD K192HQ	28
Monitor	SAMSUNG	1
UPS	APS 650	29
AVR	Assorted	29
Video Card	GT730 4GB	25
Keyboard	PS2/USB type	29
Mouse	PS2/USB type	29
Network Switch	DLINK Web Smart Switch 24 Ports	2

<b>TOTAL</b>	
System Unit	29
Monitor	29
Keyboard	29
Mouse	29
UPS	29
Network Switch	2

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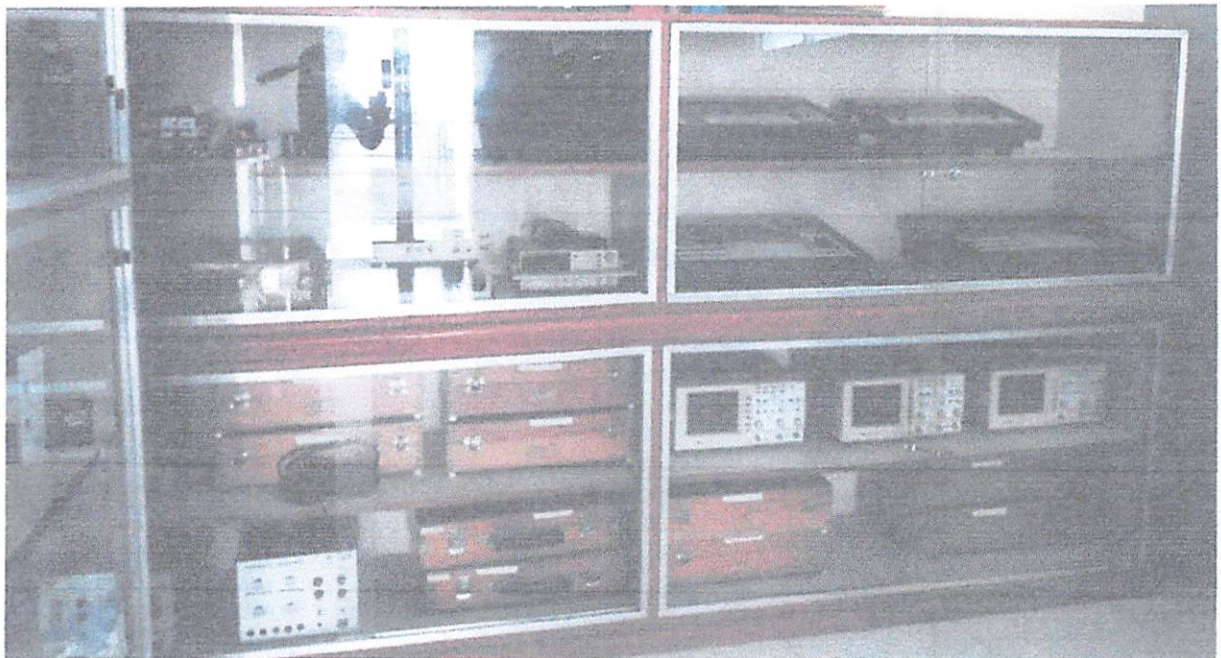
*Kip*  
**KIM L. FRIAS**  
 Computer Technician



**ELECTRICAL ENGINEERING LABORATORY**

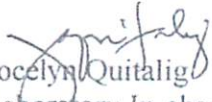


LABORATORY STOCK ROOM



BSEE, BSECE, BSCPE

Prepared By:

  
Jocelyn Quitalig  
Laboratory In-charge

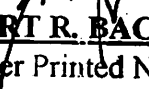


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**SURIGAO STATE COLLEGE OF TECHNOLOGY**  
Surigao City

QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		- Switch contact.			
		- 2mm terminals for snap connection cables.			
		QUANTITY: 1			
		Electrical limit switch with change-over contact - Left direction actuation			
		Includes roller-driven end of stroke with switchable electrical contact.			
		QUANTITY: 2			
		Electrical selector switch			
		Includes change over contact with normally open and normally closed contact			
		QUANTITY: 1			
		Electrical limit switch with change-over contact - Right direction actuation			
		Includes roller-driven end of stroke with switchable electrical contact.			
		QUANTITY: 2			
		Inductive proximity sensor			
		Include M18 Inductive detector			
		Detection distance : 5mm			
		Status display LED			
		Operating voltage:24V			
		QUANTITY: 1			
		Capacitive proximity sensor			
		Include M18 capacitive detector			
		Detection distance : 8mm			
		Status display LED			
		Operating voltage:24V			
		QUANTITY: 1			
		Optical proximity sensor			
		Includes M18 reflection photoelectric detector			
		Detection distance: 100mm			
		Status display LED			
		Operating Voltage: 24V			
		QUANTITY: 1			
		3/2 way spring return solenoid operated valve			
		- Low consumption: 0,55 W.			
		- LED display and surge absorber.			
		- Power-assisted system			
		QUANTITY: 1			
		5/2 way spring return solenoid operated valve			
		- Low consumption: 0,55W.			
		- LED display and surge absorber.			
		- Power-assisted system.			
		Next Page..... (Sub Total)			

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Surigao City

QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		QUANTITY: 2			
		5/2 way double solenoid operated			
		- Low consumption: 0,55W.			
		- LED display and surge absorber.			
		- Power-assisted system.			
		QUANTITY: 1			
		5/2 way double solenoid operated valve with push-locking knob style manual override			
		- Low consumption: 0,55W.			
		- LED display and surge absorber.			
		- Power-assisted system.			
		QUANTITY: 1			
		5/2 way 1 single & 1 double solenoid operated valve			
		- Low consumption: 0,55W.			
		- LED display and surge absorber.			
		- Power-assisted system.			
		QUANTITY: 1			
		5/2 way closed & exhaust center solenoid operated valve			
		- Low consumption: 0,55W.			
		- LED display and surge absorber.			
		- Power-assisted system.			
		QUANTITY: 1			
		Cable test lead with 4mm plug (set)			
		- 1 meter Blue - 7 pieces			
		- 1 meter Red - 14 pieces			
		- 0.5 meter Blue - 21 pieces			
		- 0.5 meter Red - 70 pieces			
		QUANTITY: 1			
		Electrical cable holder – Quantity: 1.			
		- It will allow to storage electrical cables.			
		Electrical connector for solenoid valve			
		24V connector with 2 pins for the solenoid valve			
		QUANTITY: 6			
		Reed switch for rodless cylinder			
		- Operating voltage: 24V			
		- Maximum current: 100mA.			
		- It will include LED display			
		QUANTITY: 2			
		Reed switch for rotary actuator			
		- Operating voltage: 24V			
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**SURIGAO STATE COLLEGE OF TECHNOLOGY**  
Surigao City

QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		- Maximum current: 100mA.			
		- It will include LED display.			
		QUANTITY: 2			
		Reed switch connector			
		- Operating voltage: 24V			
		- Maximum current: 100mA.			
		- It will include LED display.			
		QUANTITY: 4			
		Electrical power supply			
		- Input voltage: 230 VAC			
		- Output: 24 V / 4 A			
		- Protection against short circuits. Input switch and LED display.			
		- Supply cable included.			
		QUANTITY: 1			
		Tube-extractor			
		- Tool for an easy and quick extraction of the pipe (4 to 6 mm diameter).			
		QUANTITY: 1			
		Electrical distribution unit			
		- It will include 4 blocks of 4x4 mm interconnected terminals for snap connection cables			
		- It will allow the user to carry out simple interconnections for complex circuits on different parts of the panel.			
		QUANTITY: 1			
		PLC training Kit			
		Benchtop module which include PLC with 16 digital inputs and 16 digital outputs			
		Power supply: 100-240Vac.			
		Include 24Vdc power supply			
		QUANTITY: 1			
		PLC SOFTWARE FOR 20 PCs			
		The CX-One is a comprehensive software package that integrates PLC			
		Programming Software with Support Software for setting up Networks,			
		Programmable Terminals, Servo Systems, Inverters, and Temperature Controllers.			
		QUANTITY: 1			
		Set of manuals and documentation			
		- Unit specifications.			
		- Operations manual.			
		- Technical dossiers for all components.			
		- Student dossiers with pneumatic electropneumatic activities proposed.			
		- Teacher's dossiers with solutions for the activities provided for the student.			
		QUANTITY: 1			
		CD-ROM, Pneumatic slides			
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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		Buffer Amplifiers - fixed			
		Dual Analog Switch - plug-in			
		Frequency and Event Counter - fixed			
		Headphone Amplifier and 3kHz LPF - fixed			
		Master Signals - fixed			
		Multiplier - plug-in			
		Phase Shifter - plug-in			
		Quadrature Phase Splitter - plug-in			
		Scope Display Selector - fixed			
		Sequence Generator - plug-in			
		Trunks Panel - fixed			
		Tuneable LPF - plug-in			
		Twin Pulse Generator - plug-in			
		Utilities Module - plug-in			
		Variable DC - fixed			
		Voltage Controlled Oscillator - plug-in			
		60kHz Lowpass Filter - plug-in			
		<b>SYSTEM UNIT BASIC SPECIFICATIONS</b>			
		<b>POWER SUPPLY</b>			
		Input: 120, 127, 220 or 240V AC, 47Hz to 63Hz			
		Output : + 15V, 2.2A DC, -15V, 2.2A DC			
		Protection: short circuit, overload, thermal			
		Regulation: 0.2%			
		<b>PHYSICAL</b>			
		Case Dimensions: 490(W) x 330(D) x 310(H) mm			
		System Weight : 10kg			
		Plug-in Card Dimensions : 160 x 100 mm			
		Plug-in Card Bus Connectors : 64 way, 2 row, Eurocard			
		Specification of Basic and Advanced Modules:			
		1unit - Adder Module			
		Two analog input signals A(t) and B(t) may be added together, in adjustable proportions G and g. The resulting sum is presented at the output.			
		<b>BASIC SPECIFICATIONS</b>			
		Gain Range $0 < G < 2$ ; $0 < g < 2$ ;			
		Bandwidth approx 1MHz			
		Output DC Offset < 10mV, open circuit inputs.			
		1 unit - Audio Oscillator Module			
		It is a low distortion tuneable frequency sinewave source with a frequency range from 500Hz to 10kHz. Three outputs are provided. Two outputs are sinusoidal,			
		Next Page..... (Sub Total)			

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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		with their signals in quadrature. The third output is a digital TTL level signal.			
		<b>BASIC SPECIFICATIONS</b>			
		Frequency Range 300Hz to 10kHz			
		Analog Output Level 4V pk-pk			
		Distortion < 0.1% analog outputs only			
		Digital Output TTL level			
		1 unit - Dual Analogue Switch Module			
		Two identical analog switches are controlled by digital, TTL level signals.			
		The outputs of the two switches are added internally and presented			
		at the output of the module.			
		<b>BASIC SPECIFICATIONS</b>			
		Analog Input Bandwidth > 300kHz			
		Maximum CONTROL clock > 100kHz			
		CONTROL Input Levels TTL only			
		Maximum Analog Input Level + 8V			
		1 unit - Multiplier Module			
		Two analog input signals X(t) and Y(t) may be multiplied together.			
		The resulting product is scaled by a factor of approximately 1/2 so that,			
		with standard level input, later stages are not overloaded.			
		<b>BASIC SPECIFICATIONS</b>			
		Bandwidth approx 1MHz			
		Characteristic k.X(t).Y(t)			
		k approx 1/2			
		1 unit - Phase Shifter Module			
		Introduces a phase shift between its input and output. This phase shift is			
		adjustable by the user. The frequency range of operation can be selected			
		by PCB mounted switch.			
		<b>BASIC SPECIFICATIONS</b>			
		Bandwidth < 1MHz			
		Frequency Range: HI approx 100kHz			
		LO approx 2kHz			
		For 0 to 360 degree range of phase shift. The phase shift range increases			
		(i.e. resolution decreases) as the input frequency increases.			
		Character approx 180 degree shift Fine approx 20 degree shift.			
		1 unit - Quad Phase Splitter Module			
		When the same analog signal is applied to both inputs, the two output			
		signals will differ in phase by 90 degrees. The phase splitter networks are			
		wideband, typically covering the range from 200Hz to 10kHz.			
		<b>BASIC SPECIFICATIONS</b>			
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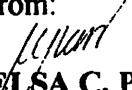
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		<i>Balance Forwarded</i>			
		Frequency Range 200Hz to 10kHz typically			
		Phase Response 90 degrees between outputs, given the same input signal to both networks.			
		<b>2 units - Sequence Generator Module</b>			
		Using a common external clock signal, the sequence generator outputs two independent pseudorandom sequences X and Y. A SYNC output is provided which is coincident with the start of the sequences. The sequences may be stopped and restarted at any time via front panel controls. Sequences X and Y are available as either standard TTL or analog level output.			
		<b>BASIC SPECIFICATIONS</b>			
		Input Clock Range TTL: 1Hz to 1MHz			
		Analog: < 500Hz to > 10kHz			
		Number of Sequences: 4 pairs			
		Sequence Lengths: 25, 28, 211			
		Sync indicates start of sequence			
		<b>2 units - Tuneable Low Pass Filter Module</b>			
		The cutoff frequency of this LOWPASS FILTER can be varied using the TUNE control. Two frequency ranges, WIDE and NORMAL, can be selected by a front panel switch. The GAIN control allows signal amplitudes to be varied if required.			
		<b>BASIC SPECIFICATIONS</b>			
		V4 Filter Ranges 200 Hz < NORMAL < 5 kHz and 200 Hz < WIDE < 12 kHz, continuously variable over each range. Filter Order 5th order, Elliptic			
		Stopband Attenuation > 50dB and Passband Ripple < 0.5dB			
		Maximum Input Voltage +5V to -5V (TTL-level input signal is acceptable)			
		<b>1 unit - Twin Pulse Generator Module</b>			
		A positive going edge applied at the CLOCK input causes a positive pulse to occur at the output terminals. There are two operating modes: TWIN and SINGLE. Only TWIN mode is limited to low frequency CLOCK inputs. In TWIN mode, Q1 outputs the leading pulse and Q2 outputs the delayed pulse. The time between pulses Q1 and Q2 can be varied, as can the pulses' widths. In SINGLE mode, only Q1 outputs a positive going pulse, while Q2 outputs the inverse of Q1. The pulse width can be varied.			
		<b>BASIC SPECIFICATIONS</b>			
		<b>TWIN MODE</b>			
		Clock Frequency Range < 50kHz			
		Pulse WIDTH 3ms < tw < 25ms			
		Pulse DELAY Q2-Q1 10ms < td < 120ms			
		Error Indication 2tw + td > tCLK			
		<b>SINGLE MODE</b>			
		Clock Frequency Range < 200kHz			
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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		Pulse WIDTH 3ms < tw < 25ms			
		1 unit - Utilities Module			
		The Utilities Module houses 4 independent functional blocks:			
		(i) A signal COMPARATOR with TTL output and CLIPPER with bipolar output,			
		for squaring analog waveforms. The COMPARATOR's threshold level may			
		be set as required by applying a DC voltage to			
		the REF input. The CLIPPER's gain may be set by adjusting DIP switches SW1 and SW2.			
		(ii) Precision halfwave RECTIFIER.			
		(iii) Simple diode and single pole, audio range, RC Lowpass Filter.			
		(iv) Single pole, audio range, RC Lowpass Filter.			
		<b>BASIC SPECIFICATIONS</b>			
		<b>COMPARATOR</b>			
		Operating Range > 500kHz			
		TTL Output Risetime 100nsec (typ)			
		<b>CLIPPER</b>			
		Operating Range > 500kHz			
		Output Level 1.8Vpk (typ)			
		Adjustable Gains 3 steps; x0.8, x8 and x40 (approx)			
		<b>RECTIFIER</b>			
		Bandwidth DC to 500kHz (approx)			
		<b>DIODE &amp; LPF</b>			
		LPF -3dB 2.8kHz (approx)			
		<b>RC LPF</b>			
		LPF -3dB 2.8kHz (approx)			
		1 unit - VCO (Voltage Controlled Oscillator) Module			
		The Voltage Controlled Oscillator module functions in two modes: either			
		as a VOLTAGE CONTROLLED OSCILLATOR with analog input voltage			
		or as an FSK GENERATOR with digital input.			
		Both modes have two frequency ranges of operation which are selected			
		by a range switch. The VCO frequency and input sensitivity can be			
		controlled from the front panel.			
		<b>BASIC SPECIFICATIONS</b>			
		<b>VCO MODE</b>			
		Frequency Ranges 1.5kHz < LO < 17kHz; sinewave and TTL			
		Input Voltage -3V < Vin < 3V			
		Overload limit indication LED Vvco > + 3V;			
		GAIN G.Vin : 1 < G < 2			
		Center Frequency Voltage Range - 3V < Vfc < 3V;			
		Vfc is a DC voltage added INTERNALLY to G.Vin			
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<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		<b>FSK MODE</b>			
		Frequency Ranges 1.5kHz < FSK1, LO < 9kHz			
		500Hz < FSK2, LO < 4kHz			
		80kHz < FSK1, HI < 200kHz			
		20kHz < FSK2, HI < 120kHz			
		Data Input TTL level message			
		1 unit - 60Khz Low Pass Filter Module			
		An elliptic lowpass filter is provided with a cutoff point of approximately 60kHz. The input signal amplitude can be adjusted with the gain control.			
		<b>BASIC SPECIFICATIONS</b>			
		Cutoff Frequency approx 60kHz			
		Passband Gain variable, 0 to 5 (approx)			
		Stopband Attenuation 50dB (typ)			
		Passband Ripple 0.1dB (type)			
		2 units - Quadrature Utilities Module			
		Three independent functions are provided: two independent multipliers and an independent adder.			
		Each MULTIPLIER allows two analog signals X(t) and Y(t) to be multiplier together. The resulting product is scaled by a factor of approximately 1/2.			
		The ADDER allows two input signals A(t) and B(t) to be added together, in adjustable proportions G and g.			
		<b>BASIC SPECIFICATIONS</b>			
		MULTIPLIER 1 and MULTIPLIER 2			
		Inputs & Outputs DC coupled			
		Bandwidth approx. 1MHz			
		Characteristic k.X(t).Y(t); k is approx. 1/2			
		<b>ADDER</b>			
		Gain range 0 < G & g < 1.5			
		Bandwidth approx. 500kHz			
		1 unit - Decision Maker Module			
		Digital signals may become corrupted by noise and interference in the communications channel. After demodulation or receiver filtering, a corrupted digital signal would need to be squared and converted to a clean digital waveform with an associated in phase bit clock, so that further digital processing, decoding or message recovery can be performed.			
		The tasks of squaring the corrupted digital signal and aligning the bit clock can be carried out by the DECISION MAKER module.			
		The DECISION MAKER module accepts up to two TTL, unipolar or bipolar level, baseband digital signals and a synchronised bit clock. The input signals are sampled at a point determined by the user and are output as clean digital signals, along			
		Next Page..... (Sub Total)			

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		<i>Balance Forwarded</i>			
		with an in-phase and synchronised bit clock. Using an oscilloscope, the decision point is displayed as a bright marker on the input digital waveform.			
		<b>BASIC SPECIFICATIONS</b>			
		Digital waveform inputs two, IN1 and IN2			
		Digital waveform outputs two, OUT1 and OUT2			
		Input/Output levels depend upon the waveform format selected:			
		TTL : +5V, 0V			
		Unipolar : +2V, 0V			
		Bipolar : +/-2V			
		Waveform formats supported NRZ-TTL, NRZ-L, NRZ-M, UNI-RZ, BIPOLAR-RZ, RZ-AMI, BIPHASE-L, DICODE, DUOBINARY			
		Bit Clock input, B.CLK TTL level, nominally 2kHz;			
		Bit Clock output, B.CLK synchronised to the OUTput waveform;			
		Decision point span > 90% of bit width			
		DECISION POINT control selection INTERNAL or External, by switch SW2			
		DECISION POINT control continuous, by front panel knob (INT), or, 0 to 5V DC EXTERNAL input signal (EXT) at Vin			
		Z-MODULATION level three modes available, with variable level control			
		Z-MODULATION pulse width 2uS type			
		1 unit - Error Counting Utilities Module			
		Two independent functional blocks are provided, which in conjunction with other TIMS modules, can be used to carry-out Bit Error Rate measurements. The two blocks are an Exclusive-OR gate for comparing two digital streams and a precise monostable for gating a pulse counter.			
		<b>BASIC SPECIFICATIONS</b>			
		<b>EXCLUSIVE-OR GATE</b>			
		Inputs A & B TTL level			
		CLOCK input TTL level			
		<b>MONOSTABLE</b>			
		GATE active level DIP switch selectable, active HI or active LO			
		GATE time normal mode and extended mode			
		GATE output LED continuously lit while GATE is active,			
		CLOCK input TTL level, fmax > 20kHz			
		TRIG input			
		1 unit - Line Code Encoder Module			
		A TTL level data stream is simultaneously encoded into eight Line-Codes (PCM Waveforms) and one Precoded Duobinary Code. The incoming data stream must be clocked by the ENCODER'S bit clock output			
		<b>BASIC SPECIFICATIONS</b>			
		Next Page..... (Sub Total)			

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Surigao City

QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		<b>Inputs</b>			
		DATA TTL level, digital signal			
		M.CLK TTL level, digital signal			
		<b>Outputs</b>			
		B.CLK TTL level, digital signal			
		LINE-CODE outputs +/-2V <sub>p-p</sub> , +/- 10%			
		NRZ-L Non-return to zero - level; <bipolar>			
		NRZ-M Nonreturn to zero - mark; <bipolar>			
		UNI-RZ Unipolar return to zero; <unipolar>			
		BIP-RZ Bipolar return to zero; <3-level>			
		RZ-AMI Return to zero - alternate mark invert; <3-level>			
		Manchester Biphase - level ( Manchester ); <bipolar>			
		DICODE-NRZ Dicode - nonreturn to zero; <3-level>			
		PRECODED DUOBINARY (PARTIAL RESPONSE SIGNALING); <3-level>			
		1 unit - Line Code Decoder Module			
		Each of the encoded signals generated by the LINE-CODE ENCODER module can be decoded, producing a TTL level data stream. A synchronised bit clock with correct alignment must be provided to the decoder.			
		<b>BASIC SPECIFICATIONS</b>			
		<b>Inputs</b>			
		B.CLK TTL level bit clock, synchronised to the input data; f <sub>max</sub> > 100kHz			
		Encoded signal inputs see ENCODER module section of this manual for definitions			
		<b>Outputs</b>			
		DATA decoded TTL level data			
		STROBE TTL level signal			
		NRZ-L Non-return to zero - level; <bipolar>			
		NRZ-M Nonreturn to zero - mark; <bipolar>			
		UNI-RZ Unipolar return to zero; <unipolar>			
		BIP-RZ Bipolar return to zero; <3-level>			
		RZ-AMI Return to zero - alternate mark invert; <3-level>			
		Manchester Biphase - level ( Manchester ); <bipolar>			
		DICODE-NRZ Dicode - nonreturn to zero; <3-level>			
		PRECODED DUOBINARY (PARTIAL RESPONSE SIGNALING); <3-level>			
		1 unit - Noise Generator Module			
		A broadband noise source, with a 12 step output amplitude attenuator.			
		<b>BASIC SPECIFICATIONS</b>			
		Bandwidth 1Hz to < 500kHz			
		Maximum level approx 1V <sub>rms</sub> at "+22dB" position			
		Attenuator steps 12 steps, 0dB to +22dB ( 2dB per step )			
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<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		1 unit - Wide TRMS Voltmeter Module			
		A wideband, true RMS volt meter with large, LED digital display and a buffered DC output.			
		<b>BASIC SPECIFICATIONS</b>			
		Input Ranges 200mV, 2V, 10V			
		Crest factor 8 : 1 ( peak voltage to RMS voltage ).			
		Maximum allowable input 15V peak, all ranges			
		Input impedance 100k ohm in parallel with less than 100pF			
		Bandwidth DC, 100Hz to 1 2MHz			
		DC output approximately 1mV DC per digit, giving 2V full scale.			
		1 unit - 100Khz Channel Filters Module			
		Three switch selectable, 100kHz channels are provided, comprising two different filters and one straight through connection.			
		<b>BASIC SPECIFICATIONS</b>			
		Input coupling AC or DC, channels 1 to 3			
		Channel responses			
		Channel 1 straight-through			
		Channel 2 bandpass filter			
		Channel 3 lowpass filter			
		Stop-band attenuation approx 40dB			
		1 unit - PCM Encoder Module			
		An audio frequency analog-to-digital converter which outputs the digitised data in serial TTL-level PCM format. Both linear and non-linear (logarithmic) digitising schemes are provided. Frame synchronization is implemented by both separate output serial data stream. A variable frequency sinuous-type message is provided, which is always synchronised to the input bit clock. Two PCM ENCODER modules may be connected in parallel, with synchronisation signal and also an embedded code within the the appropriate control signal, to establish a two input channel, single data line, Time Division Multiplex system.			
		<b>BASIC SPECIFICATIONS</b>			
		Input Vin +/-2Vpk, DC coupled			
		Bit Clock Input <10kHz, TTL-level			
		Output Signal serial, TTL-level data stream in offset binary format			
		Output Format 8 bits data, including frame synchronisation bit as LSB			
		Digitising Formats 7-bits linear; 4-bits linear, and 4-bits companded			
		Companding Formats TMS 4-bit A4-Law, & TMS 4-bit m4-Law (PCB selectable)			
		Frame Synchronisation FS synchronisation signal coincident with frame's LSB; and also as embedded "0 - 1 - 0 - 1" code in the LSB of each frame.			
		Sinuous Message Output bipolar, standard TMS-level and always synchronised to bit clock			
		Message Frequency PCB switch selectable as ratio of bit clock, 1:32, 1:64, 1:128, 1:256			
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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		TDM Mode two channel TDM system, with MASTER/SLAVE control of two PCM ENCODER modules.			
		Sinusoidal Message Output bipolar, standard TDM-level and always synchronised to bit clock			
		Message Frequency PCB switch selectable as ratio of bit clock, 1:32, 1:64, 1:128, 1:256			
		TDM Mode two channel TDM system, with MASTER/SLAVE control of two PCM ENCODER modules.			
		1 unit - PCM Decoder Module			
		An audio frequency digital-to-analog converter which accepts digital data in serial format, as generated by the PCM ENCODER module. Frame synchronisation may be achieved either from an external synchronisation signal or may be extracted from the embedded frame synchronisation code generated by the PCM ENCODER module. The bit clock provided must be synchronised and in-phase with the incoming digital data.			
		Two PCM DECODER modules may be connected in parallel, with the appropriate control signal, to decode the data generated by two PCM ENCODER modules operating in Time Division Multiplex mode			
		<b>BASIC SPECIFICATIONS</b>			
		Input PCM DATA serial, TTL level data stream in offset binary format			
		Input Format 8 bits, including frame synchronisation bit as LSB			
		Digitising Formats 7-bits linear, 4-bits linear, and 4-bits companded			
		Companded Formats TDM 4-bit A4-Law, and TDM 4-bit m4-Law (PCB selectable)			
		Bit Clock Input <10kHz, TTL level; positive edges of CLK & PCM DATA coincident			
		Output Signal +/-2Vpk, DC coupled			
		Frame Synchronisation LINE and EMBEDDED modes			
		LINE Mode synchronisation signal coincident with frame's LSB			
		EMBEDDED Mode search and extract "0 - 1 - 0 - 1" code in LSB of each frame			
		EMBEDDED Mode Search 32, 64, 128 and 256 consecutive frame synch bits (PCB switch)			
		TDM Mode two channel TDM system, with MASTER/SLAVE control of two PCM DECODER modules			
		1 unit - Bit Clock Regeneration Module			
		Four independent functional blocks are provided, which may be used independently or in combination with other TDM modules, to recover the bit clock of any TDM generated Line-Code.			
		Schemes which may be constructed and demonstrated using the building block functions of the BIT CLOCK REGENERATION module along with other TDM modules include:			
		- Bandpass filter rejection techniques			
		- Bandpass filter bit-synchronization, and			
		Phase Lock Loop bit-synchronization using filter/square-law, transition detector based and various other clock recovery structures.			
		<b>BASIC SPECIFICATIONS</b>			
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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
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		<i>Balance Forwarded</i>			
		panel switches. The seventh decoding format, BPSK, is enabled via a special operating mode of the M-LEVEL DECODER module.			
		<b>BASIC SPECIFICATIONS</b>			
		i & q Inputs 2, 3, 4 or 8 level, depending upon constellation selected, +2.5Vpk-pk			
		CLK Input up to 10kHz, TTL-level, synchronised with input symbols			
		DATA Output continuous stream of decoded data bits, TTL-level			
		I & Q Outputs sampled & held representation of the input signals, with offset.			
		CONSTELLATION SELECT front panel switch selectable			
		Decision boundaries preset and fixed for each constellation			
		DECISION POINT control continuous regions, with region selected by HUNT function.			
		HUNT control steps DECISION POINT across adjacent regions of the symbol to be sampled.			
		i & q Input offset control PCB trimmer adjustable, +0.25V,			
		Z-MODULATION Output three modes available, with variable level control.			
		1 set - Patching Leads			
		2 pcs. - Stackable Perspex Module Storage Box			
<b>1</b>	<b>unit</b>	<b>Antenna Lab Test Bench Computer Based;</b>	<b>18-09-1110</b>	<b>2,020,879.00</b>	
		<b>Mdl: 0708 INT-ANT; Manufacturer: YEA Engineering</b>			
		<b>&amp; national Instruments; Made in Armenia/USA</b>			
		<b>Overview (SN # USPP18041052/ SN # CDA09174-1D13624)</b>			
		The Antenna laboratory is based on the Universal Software Radio Peripherals platform.			
		The software is developed in the Laboratory Virtual Electronic Workbench graphical programming environment. It is intended for hands-on study of traditional patterns of antennas. All hands-on experiments are implemented on the testbench consisting of a turntable tripod used for mounting the antennas under test, a tripod for the auxiliary antenna, and a set of 7 antennas in the different frequency ranges. Signal received by the antenna under test is fed to the RF vector network analyzer for further processing. The students can use the test bench for the measurement of studied antennas parameters by the far field measurements method. Antennas included with the laboratory facility			
		1. Rod antenna			
		2. Yagi antenna			
		3. Spiral antenna			
		4. Horn antenna			
		5. Parabolic antenna			
		6. Cophasal antenna arrays			
		<b>Features</b>			
		6 labs on measuring the traditional patterns of antennas • Representation of experimental results on the screen (graphs, scope signals, numeric indicators)			
		<b>Required hardware and software</b>			
		Universal Software Radio Peripherals (USRP) platform Antenna laboratory			
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		<i>Balance Forwarded</i>			
		testbench including a tripod, a tripod with a turntable, and a set of antennas • Lab			
		software • User manual. Includes the following Test bench hardwares:			
		• Universal Software Radio Peripheral, 400 MHz to 4. 4 GHz + GPS Clock			
		Software Radio Kit: Hardware, Driver and Toolkits.			
		• CompactDAQ chassis (4 slot USB)			
		• 4-Channel SPST Electromechanical Relay Module, 30 VDC (1.5 A), 60 VDC			
		(1 A), 250 VAC (1.5 A), EM Form A, 4-Ch SPST Relay C Series Module			
		Strain Relief and Operator Protection for 10-pos Screw Term(Qty 1)			
		• 5V/TTL, Bidirectional Digital I/O 8-Channel, 100 ns			
		• Turntable tripod (TT)			
		• Turntable Unit			
		• Auxillary antenna tripod			
		• Parabolic antenna			
		• Cophasal antenna			
		• Horn antenna			
		• Yagi antenna			
		a. Passive telescopic dipole antennas (directors) (D1-D3)			
		b. Driven element with U-bend matcher			
		c. 70 cm crossover			
		d. 40x40 cm grid			
		Helical antenna			
		Dipole antenna with SMA female – SMA reverse male connector			
		Auxiliary dipole antenna with SMA female - SMA reverse male connector			
		Auxiliary dipole antenna with U-bend matcher			
		Auxiliary telescopic dipole antenna with U-bend matcher			
		Control cable			
		SMA-2 (male)-SMA (male) cable, 2 m			
		SMA-4 (male)-SMA (male) cable, 4 m			
		SMA-0.5 (male)-SMA(male), 0.5 m			
		Control unit			
		Turntable control cable			
		Power supply Unit with cable.			
		Computer Desktop or Laptop compatible			
1	unit	<b>Transmission Line Trainer; Mdl: ELT ; Manufacturer:</b>	18-09-1110	298,998.00	
		<b>Edibon Int'l; Made in Spain (SN # ELT0019)</b>			
		All elements are mounted in a metallic box, with power supply and block diagrams.			
		Signal Generators blocks:			
		Square Signal Generator block:			
		Amplitude: +12V.			
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		<i>Balance Forwarded</i>			
		Frequency range: 1Hz to 50KHz.			
		Sine Signal Generator block:			
		Amplitude: ± 2.5 V.			
		Frequency range: 1 Hz to 100KHz.			
		Triangle Signal Generator block:			
		Amplitude: ± 2.5 V.			
		Frequency range: 1 Hz to 100KHz.			
		Each signal generator contains an encoder to change the signal frequency			
		and four BNC connectors with different output impedance.			
		Transmission Lines block			
		2 transmission lines.			
		2 BNC connectors for each transmission line.			
		5 Test points along of each transmission line. The first and the last test			
		test point are straight connected with the BNC connectors and there			
		is 10 m. of coaxial cable between test points.			
		40 m. of RG-174 coaxial cable in each line, a total of 80 m. in the 2 lines.			
		Load block:			
		Type of loads: resistive, inductive and capacitive loads.			
		First group of loads:			
		1 KW potentiometer.			
		33 W Resistance.			
		1 nF Capacitor.			
		4.7 mH Inductance.			
		Short circuit/Open circuit.			
		Second group of loads:			
		1 KW potentiometer.			
		50 W Resistance.			
		10 nF Capacitor.			
		4.7 mH Inductance.			
		Short circuit/Open circuit.			
		Switches to connect and disconnect each load.			
		3 BNC connectors.			
		Cables and Accessories, for normal operation.			
		Manuals: This unit is supplied with the following manuals: Required Services,			
		Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.			
		Dimensions: 490 x 330 x 310 mm. approx. (19.29 x 12.99 x 12.20 inches approx.).			
		Weight: 20 Kg. approx. (44 pounds approx.).			
		<b>Date Acquired: January 17, 2019</b>			

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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605030 - Information &amp; Communication Technology Equipment</b>					
		<b>HP 280 Microtower Business Desktop with HP P223</b>	<b>18-12-1700</b>	<b>45,900.00</b>	
		<b>21.5" LED Monitor</b>			
		<i>Specifications:</i>			
		Processor: Intel Core i5-7500 3.4 Ghz 4- Cores 4-Threads			
		Chipset: Intel H110 Chip set			
		Form Factor: Microtower			
		Hard Drive: 1TB 7200 rpm SATA 6G 3.5"			
		Memory: 8GB DDR4 UDIMM NECC Unbuffered Memory (32GB Max)			
		Input: PS/2 Keyboard and Optical USB Mouse			
		Network: Integrated 10/100/1000 Ethernet, supports Wake-on-LAN			
		Graphics: Integrated Intel HD 360 (Shared memory use ranges from up to			
		1.7 GB or Higher depending on computer configuration			
		Integrated Display Ports: VGA and HDMI Video Interface			
		Ports: 4 x USB 3.0 (2 Front, 2 Rear), 4 x USB 2.0 (Rear)			
		Security Features: TPM 2.0 Security Cable Slot			
		Audio: Integrated HD Audio, Combo Mic/ Headphone Jack,			
		Internal Speaker, Line in, Line Out			
		Power Supply: 180 Watt Active PFC			
		Expansion: Slots: PCI Express x16, PCI Express x1 2.0, M.2 for WLAN			
		Dimensions: 6.69" x 10.9" x 13.31 Chassis (WxDxH in Vertical Orientation)			
		Operating System: Free DOS/Windows 10 Professional License			
		with bundled Office Productivity Suite compatible with			
		Microsoft Office 2000			
		Warranty: 3- Years Parts Labor/ Onsite, Next Business Day Response 8x5			
		Bundled with 600VA UPS with AVR (Vertiv Liebert iTON PSA600H-BX)			
		<b>HP 280 Microtower Business Desktop with 2GB</b>	<b>18-12-1700</b>	<b>49,900.00</b>	
		<b>Graphics Card and HP P223 21.5" LED Monitor</b>			
		<i>Specifications:</i>			
		Processor: Intel Core i5-7500 3.4 Ghz 4- Cores 4-Threads			
		Chipset: Intel H110 Chipset			
		Form Factor: Microtower			
		Hard Drive: 1TB 7200 rpm SATA 6G 3.5"			
		Memory: 8GB DDR4 UDIMM NECC Unbuffered Memory (32GB Max)			
		Input: PS/2 Keyboard and Optical USB Mouse			
		Network: Integrated 10/100/1000 Ethernet, supports Wake-on-LAN			
		Graphics: Discrete NVIDIA® GeForce® GT 730 2GB GDDR5 Pcle X8 DP Graphics Card			
		Display Connectors: 1 X Dual-Link DVI-I; 1 X Display Port; Includes DVI to VGA Adapter			
		Ports: 4 x USB 3.0 (2 Front, 2 Rear), 4 x USB 2.0 (Rear)			
		Security Features: TPM 2.0 Security Cable Slot			
		Audio: Integrated HD Audio, Combo Mic/ Headphone Jack,			
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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605030 - Information &amp; Communication Technology Equipment</b>					
		<i>Balance Forwarded</i>			
		Internal Speaker, Line in, Line Out			
		Power Supply: 180 Watts Active PFC			
		Expansion: Slots: PCI Express x16, PCI Express x1 2.0, M.2 for WLAN			
		Dimensions: 6.69" x 10.79" x 13.31 Chassis (WxDxH in Vertical Orientation)			
		Operating System: Free DOS/Windows 10 Professional License			
		with bundled Office Productivity Suite compatible with			
		Microsoft Office 2000			
		Warranty: 3- Years Parts/ Labor/ Onsite, Next Business Day Response 8x5			
		Bundled with 600VA UPS with AVR (Vertiv Liebert iTON PSA600H-BX)			
		<b>Monitor Specifications:</b>			
		Panel Type: 21.5- inch VA w/ LED Backlight			
		Resolution: 1920 x 1080 Full HD @60 Hz			
		Contrast Ratio: 3000:1			
		Mounting Option: 100mm VESA			
		Aspect Ratio: 16:9			
		Response Time: Up to 5ms 8ms default			
		Pixel per Inch: 102.4 DPI			
		backlight Lamp Life: 30,000 hours minimum			
		Video Inputs: (1) Display Port with HDCP Support, (1) VGA			
		Power Consumption: Maximum of 28 Watts			
		Warranty: 3- Years			
		<b>HP 280 MICROTOWER BUSINESS DESKTOP</b>			
		<b>SERIAL NUMBER:</b>			
		* 8CG8375VL7			
		* 8CG8375VLJ			
		* 8CG8375VLB			
		* 8CG8375VLO			
		* 8CG8375VMD			
		* 8CG8375VLF			
		* 8CG8375VLZ			
		* 8CG8375VL4			
		* 8CG8375VLN			
		* 8CG8375VLG			
		* 8CG8375VLC			
		* 8CG8375VL2			
		* 8CG8375VM3			
		* 8CG8375VLK			
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		<i>Balance Forwarded</i>			
		HP P223 21.5 LED MONITOR			
		<b>SERIAL NUMBER:</b>			
		* CNK82201C8			
		* CNK83401GG			
		* CNK83401GZ			
		* CNK8340046			
		* CNK83401H1			
		* CNK83401H7			
		* CNK83401GF			
		* CNK83401GQ			
		* CNK834004C			
		* CNK83401GH			
		* CNK83401GN			
		* CNK83401GX			
		* CNK83401GR			
		* CNK834004F			
		VERTIV UPS 600VA			
		<b>SERIAL NUMBER:</b>			
		* 241810542766BX			
		* 241810542764BX			
		* 241810542292BX			
		* 241810542294BX			
		* 241810542293BX			
		* 241810542291BX			
		* 241810542384BX			
		* 241810542386BX			
		* 241810542385BX			
		* 241810542383BX			
		* 241810542392BX			
		* 241810542394BX			
		* 241810542393BX			
		* 241810542391BX			
		<b>Date Acquired: February 08, 2019</b>			
		GLOBALCHIPS			

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"For Nation's Greater Heights"

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## SURIGAO STATE COLLEGE OF TECHNOLOGY

Surigao City




CERTIFICATE NUMBER: AJA19-0225

QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
-----	------	-------------	------	-----------	-----------------


### Account Code 10605140 - Technical and Scientific Equipment

28	unit	<b>Television Set</b>	19-05-0572	27,600.00	
		<i>Specification:</i>			
		* Devant 55" Smart TV Full HD			
		* LED Smart TV			
		* Screen Size: 55"			
		* Full HD 1920 x 1080			
		* Vidaa U2.5 Operating System			
		* Built-in ISDB-T Receiver			
		* VEWD App Store			
		* Netflix and Youtube Video Streaming			
		* TV Browser			
		* HDMI Port X3			
		* USB Port X2			
		* DLNA			
		* Invisible Speaker			
		Includes: TV Wall Bracket			
		<b>Date Acquired: June 21, 2019</b>			
		<b>Serial Number:</b>			
		55LTV800A031900334 / 55LTV800A031900277			
		55LTV800A031900080 / 55LTV800A031900320			
		55LTV800A031900275 / 55LTV800A031900283			
		55LTV800A031900317 / 55LTV800A031900315			
		55LTV800A031900287 / 55LTV800A031900035			
		55LTV800A031900325 / 55LTV800A031900282			
		55LTV800A031900336 / 55LTV800A031900321			
		55LTV800A031900311 / 55LTV800A031900281			
		55LTV800A031900313 / 55LTV800A031900337			
		55LTV800A031900332 / 55LTV800A031900267			
		55LTV800A031900312 / 55LTV800A031900335			
		55LTV800A031900126 / 55LTV800A011902247			
		55LTV800A011902278 / 55LTV800A011902274			
		55LTV800A011902291 / 55LTV800A011902280			

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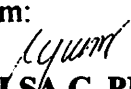
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Surigao City

QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
12	unit	<b>Portable Programmable Logic Controller Trainer; Mdl: SMCT-V7V0125STEPLCBX, Manufacturer: Shoketsu SMC Corporation; Made in Japan (model SMCT-V7 V0125STEDPLBX)</b>	18-09-1110	<b>285,950.00</b>	
		The system will include a panel into which all of the pneumatic and electropneumatic components required to undertake the proposed practice activities and the pneumatic-electropneumatic training software that comes with the PC are built.			
		The trainer packaging is designed exactly like a briefcase with a handle to make it easier to carry it around.			
		The components will be arranged on the panel and screwed in place.			
		All of the components must be industrial, and the standard pneumatic symbol must be printed on the side of each component and on the panel.			
		The trainer must always come with pneumatics-electroneumatics training software in CD-Rom format, which consists of:			
		3D animations of the PC components, solid and cross section, displaying the internal workings of the different components when air flows through them			
		Interactive exercises, with:			
		Electropneumatics practice activities.			
		Industrial application practice activities.			
		<b>SYSTEM COMPONENT SPECIFICATIONS</b>			
		<b>A.- COMPONENT PANEL</b>			
		Measurements: 530x300x150mm.			
		Must include the standard pneumatic symbols printed on the side of each component built into the panel.			
		Fittings with instant connections for 4mm tubing to supply power to the pneumatic components.			
		Terminal blocks connector for instant connections to control electropneumatic components.			
		<b>B.- PNEUMATIC COMPONENTS</b>			
		<b>B1.- AIR TREATMENT UNIT.(1 UNIT):</b>			
		Regulating filter with pressure gauge:			
		· Operating pressure: up to 10 bar.			
		· Regulation field from 0.5 to 7 bar.			
		· Fittings with instant connections for 4mm tubing.			
		3/2 manual valve:			
		· Operating pressure: up to 10 bar.			
		· Fittings with instant connections for 4mm tubing.			
		<b>B2.- DUAL-ACTING CYLINDER (1 UNIT)</b>			
		Next Page.... (Sub Total)			

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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		• Made from stainless steel. 12 mm O.D., 80 mm stroke.			
		• Elastic damping.			
		• Rail to house magnetic limit detectors.			
		• Fittings with instant connections for 4mm tubing with speed controllers.			
		<b>B3.- SPEED CONTROLLER (4 UNITS)</b>			
		Metering out speed controller with 4mm tubing			
		<b>C.- ELECTROPNEUMATIC COMPONENTS</b>			
		<b>C1.- 5/2 SINGLE SOLENOID VALVE (1 UNITS)</b>			
		• Low consumption: 0.55W			
		• LED display and surge suppressor			
		• Spring and air return.			
		• Power-assisted.			
		• Fittings with instant connections for 4mm tubing.			
		<b>C2.- DOUBLE 5/2 SOLENOID VALVE (1 UNIT)</b>			
		• Low consumption: 0.55W			
		• LED display and surge suppressor			
		• Spring and air return.			
		• Power-assisted.			
		• Fittings with instant connections for 4mm tubing.			
		<b>C3.- POWER SUPPLY (1 UNIT)</b>			
		• Voltage input 220 V.			
		• Output: 24 V / 2 A			
		• Input switch and LED display.			
		• Built-in power cable.			
		<b>C4.- SET OF ELECTRICAL INPUTS (KEYPAD WITH 3 BUTTONS). (1 UNIT)</b>			
		• Two 2-position buttons and one button with locking.			
		• Switchable contact per button.			
		<b>C5.- SET OF 2 RELAYS (5 UNITS)</b>			
		• To include 2 relays with 24v coil and 4 switchable contacts.			
		• LED activated relay display.			
		<b>C6.- LED DISPLAYS. (1 UNIT)</b>			
		• To include 3 lights			
		<b>C7.- AUTO SWITCH, REED TYPE (4 UNITS)</b>			
		• Mounted on double acting cylinder.			
		• Operating voltage: 24 V.			
		• Maximum intensity: 100 mA.			
		• Includes LED display.			
		<b>C8.- LOAD BUZZER. (1 UNIT)</b>			
		• 24V buzzer			
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<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		<b>C9.- LIMIT SWITCH. (4 UNITS)</b>			
		• Roller activate delectrical limit switch, 24V			
		• High precision basic switch in a variety of styles			
		• Wide margins of operating conditions increase the operating speed range			
		• Roller activate delectrical limit switch, 24V			
		<b>D.- ACCESSORIES</b>			
		<b>D1.- FLEXIBLE TUBING (20M ROLL). (1 UNIT)</b>			
		• Black polyurethane tubing, 4mm O.D., to make the connections in the pneumatic circuits.			
		<b>D2.- SET OF 10 "T" FITTINGS (1 UNIT)</b>			
		• Set of 10 one-touch fittings with instant connections for 4mm tubing.			
		<b>D3.- SET OF 10 4mm PLASTIC CAPS (1 UNIT)</b>			
		• Caps must be placed at pressure outlets for 4mm tubing.			
		<b>D6.- SET OF 30 CONNECTION CABLES</b>			
		<b>E.- PROGRAMMABLE LOGIC CONTROLLER</b>			
		<b>E1.- PROGRAMMABLE LOGIC CONTROLLER</b>			
		• 8 digital Input and 6 digital outputs			
		<b>E2.- PLC SOFTWARE</b>			
		<b>E3.- PLC CABLE</b>			
<b>2</b>	<b>unit</b>	<b>Earth Resistance Tester; Mdl: 4106; Manufacturer, Made in Japan (SN # E0073491/E0073485)</b>	<b>18-09-1110</b>	<b>29,400.00</b>	
		• Microprocessor-controlled.			
		• Earth testing at 2Ω, 20Ω, 200Ω, 2kΩ.			
		• Earth voltage measuring : 0-300V AC.			
		• Automatic C spike check.			
		• Automatic P spike check.			
		• 2-Wire test.			
		• 3-Wire test.			
		• 4-Wire test.			
		• LCM display.			
		• Auto ranging.			
		• Auto power OFF.			
		• Data hold.			
		• Robust, compact and easy-to-carry.			
		Specification:			
		Measuring ranges Earth Resistance 0-2Ω / 0-20Ω / 0-200Ω / 0-2kΩ			
		Earth Voltage 0-300V AC Accuracy Earth Resistance ±2%rdg ± 3dgt			
		Earth Voltage ±2%rdg ± 3dgt			
		Earth resistance resolution 0-2Ω: 0.01Ω 0-20Ω : 0.1Ω 0-200Ω 1Ω 0-2kΩ 10Ω			
		Temperature & humidity Operating: 0°C~40°C ≤80% R.H. Storage: -10°C~50°C ≤80%			
		Next Page..... (Sub Total)			

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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		R.H. Dimensions 250(L) x 190(W) x 110(D)mm Weight (battery included)			
		Approx. 1500g Power source 1.5V (AA) x 8			
		Safety standards EN 61010-1 CAT IV 300V EN 61557-1			
		EN 61557-5 EN 61326-1			
		Accessories:			
		Instruction manual Test leads (red-15m, black-10m, yellow-10m, green-5m) Auxiliary earth spikes Carry case Shoulder belt Batteries			
2	unit	<b>Digital Storage Oscilloscope; Manufacturer: Rigol</b>	18-09-1110	<b>41,500.00</b>	
		<b>Technologies Inc.; Made in USA (SN # DS2D204102843/DS2D204102890)</b>			
		Bandwidth : 100MHz			
		+ Sample rate : 1 GS/s			
		+ Ultra-thin body			
		+ 8 inch high resolution LCD			
		+ Pass / Fail function			
		+ SCPI, and LabVIEW supported			
		+ newly added function - digital filtering, and current measurement			
2	unit	<b>Educational Laboratory Virtual Instrumentation Suite; (Elvis II+), Mdl: 780378-02; Manufacturer: National</b>	18-09-1110	<b>363,800.00</b>	
		<b>Instrument; USA; Assembled in Hungary</b>			
		Platform Features: (SN # 3153FE7/SN3169F80)			
		• Open architecture for third-party plug-in boards			
		• Hi-Speed USB plug-and-play connectivity			
		• 1.25 MS/s oscilloscope			
		• 5 1/2-digit isolated digital multimeter			
		• ±15 and +5 V power supply			
		• Manual control – function generator and variable power supply			
		• Circuit protection with resettable fuse.			
		Integrated Suite of 12 Virtual Instruments			
		• Oscilloscope			
		• Function generator (manual control)			
		• Digital Multimeter (DMM)			
		• Arbitrary waveform generator			
		• Bode analyzer			
		• 2-wire current voltage analyzer			
		• 3-wire current voltage analyzer			
		• Dynamic signal analyzer (DSA)			
		• Impedance analyzer			
		• Digital reader			
		• Digital writer			
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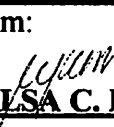
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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		• Variable power supply (manual control)			
		Driver Software (included)			
		Includes Computer Desktop Compatible			
2	unit	<b>Digital Electronic Laboratory Application Board;</b>	18-09-1110	<b>140,000.00</b>	
		<b>Mdl: 0708-INT-DE; Manufacturer: YEA Engineering;</b>			
		<b>Made in Armenia (SN # 110000020/SN # 110000021)</b>			
		19 Experiments on Digital Electronics Fundamentals			
		Menu-driven navigation through the labs			
		Student registration			
		Step-by-step instructions for students			
		Interactive study guide for each experiment			
		Graphical representation of experimental results			
		Export results in MS Excel format			
		Compatible to the Educational Laboratory Virtual Instrumentation Suite			
		List of Experiments:			
		1. Input parameters of Logic Elements (LE)			
		2. Static and dynamic output characteristics of LE			
		3. Synthesis and analysis of simple logical circuits			
		4. Encoder			
		5. Decoder			
		6. Multiplexer			
		7. Digital comparator			
		8. Adder			
		9. RS-trigger			
		10. JK-trigger			
		11. D-trigger			
		12. Connected in parallel register			
		13. Connected in series register			
		14. Binary counter			
		15. Binary-decimal counter			
		16. Timer			
		17. Random access memory (RAM)			
		18. Digital-analog converter (DAC)			
		19. Analog-digital converter (ADC)			
2	unit	<b>Analog Electronic Laboratory Application Board;</b>	18-09-1110	<b>167,980.00</b>	
		<b>Mdl: 0708-PI-AE; manufacturer: YEA Engineering;</b>			
		<b>Made in Armenia (SN # 96P536JL92015F56/SN # 96P536JL92015F59)</b>			
		Features			
		18 experiments on Analog Electronics Basics			
		<i>Next Page..... (Sub Total)</i>			

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		<i>Balance Forwarded</i>			
		Menu-driven navigation through the labs			
		Student registration			
		Step-by-step instructions for students			
		Interactive study guide for each experiment			
		Representation of experimental results on the screen			
		Export of results in MS Excel format			
		Hardware and software:			
		Educational Laboratory Virtual Instrumentation Suites platform			
		Analog Electronics Basics board			
		Laboratory software			
		User manual			
		List of Experiments:			
		Ohm's law			
		Serial, parallel and mixed connection of resistors			
		Capacitor operation principles (capacitor charge and discharge, time constant of RC circuit)			
		Serial, parallel and mixed connection of capacitors			
		Inductor operation principles (energy storage and output of magnetic field, time constant of RL circuit)			
		Reactive resistance concept			
		Low-frequency and high-frequency RC filters			
		LC filters			
		Semiconductor diodes characteristics			
		Zener diodes characteristics			
		Rectifier operation principles			
		Bipolar transistor characteristics			
		Inverting amplifier operation principles			
		Non-inverting amplifier operation principles			
		Voltage integrator operation principles			
		Voltage differentiator operation principles			
		Single-limit comparator operation principles			
		Hysteresis comparator operation principles			
2	unit	<b>Electronics Engineering Application Board;</b>	18-09-1110	<b>246,850.00</b>	
		<b>Mdl: 784720-01; Mfturer: National Instruments;</b>			
		<b>made in USA; Assembled in Armenia</b>			
		Overview (SN # 101042737/ SN # 101042841)			
		The laboratory facility for hands-on study of Electronics			
		Engineering is based on the Educational Laboratory Virtual			
		Instrumentation Suite platform used in conjunction with software			
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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
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		<i>Balance Forwarded</i>			
		developed in Graphical programming environment.			
		All hands-on operations are conducted on the Electronics Engineering board. The circuits to be assembled are presented on respective front panels of each hands-on project, as well as in courseware manual. Corresponding sections of the manual are included in lab software so that a student may refresh his memory on appropriate theoretical materials without interrupting practical work on the lab. Experimental results of the lab may be exported and saved in MS Excel format (including student name, date & time, and studied circuit).			
		<b>Features</b>			
		22 hands-on experiments in Electronics Engineering			
		Menu-driven navigation through the labs			
		Student registration			
		Interactive representation of circuits in each hands-on project			
		Step-by-step instructions for students			
		Interactive study guide for each experiment			
		Preassembled board with electronic components			
		Representation of experimental results on the screen (graphs, scope signals, numeric indicators)			
		Export of results in MS Excel format			
		List of laboratory Experiments:			
		<b>Direct Current circuits</b>			
		1. Ohm's law			
		2. Kirchhoff's circuit laws			
		3. Series connection of resistors			
		4. Parallel connection of resistors			
		5. Mixed parallel and series connection of resistors			
		6. DC voltage source in electric circuits			
		7. DC voltage source in electric circuits			
		<b>Alternating Current circuits</b>			
		1. Resistance in AC circuits			
		2. RL networks in AC circuits			
		3. RC networks in AC circuits			
		4. RLC networks in AC circuits			
		5. Series connection of capacitors			
		6. Parallel connection of capacitors			
		7. Series connection of inductors			
		8. Parallel connection of inductors			
		9. Voltage resonance in AC circuits			
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<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		10. Current resonance in AC circuits			
		11. Inductively coupled circuits			
		12. Single-phase transformers			
		<b>Transient processes</b>			
		1. Transient processes in linear RL circuits			
		2. Transient processes in linear RC circuits			
		3. Transient processes in linear RLC circuits			
2	unit	<b>Industrial Electronic Application Board; Mdl: 0708-INT-IE;</b>	18-09-1110	<b>166,700.00</b>	
		<b>Manufacturer: YEA Engineering; made in Armenia</b>			
		<b>Features: (SN # 11000009/ SN # 11000010)</b>			
		9 hands-on experiments ; Student registration			
		Selecting a lab from the software menu			
		Interactive schematic diagrams for each laboratory			
		Step-By-Step instructions for each laboratory			
		Specially designed test board for Educational Laboratory Virtual			
		Instrumentation Suites platform with installed electronic components			
		Graphical display of measured parameters in real time and			
		saving the results in the form of screenshots and tables			
		List of labs Experiments:			
		Semiconductor diode			
		Zener diode			
		Variable-capacitance diode			
		Bipolar transistor			
		Field-effect transistor (FET)			
		IGBT-transistor			
		Shockley diode			
		Thyristor			
		Bidirectional thyristor			
1	unit	<b>Digital System Development Board; Md: 784972-01;</b>	18-09-1110	<b>95,580.00</b>	
		<b>Manufacturer: National Instruments; USA;</b>			
		<b>Assembled in Hungary (SN # HC5945676)</b>			
		Digital electronics teaching platform			
		• Programmable with LabVIEW and Vivado			
		• Integrates with Educational Laboratory Virtual Instrumentation Suite			
		• Zynq XC7Z020 FPGA			
		• 8 LEDs, 8 slide switches, 4 push buttons			
		• Expansion connector			
		• Capacitive touchscreen			
		3 PMOD connectors			
		Next Page..... (Sub Total)			

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		<i>Balance Forwarded</i>			
		<b>Peripherals</b>			
		The DSDB is populated with peripherals found in many products that students can learn to interface with through hands-on experiments. The DSDB contains the following peripherals:			
		• Audio codec in and out jacks			
		• Headphone & Microphone Jack			
		• VGA connector			
		• HDMI			
		• Ethernet RJ-45 connector			
		• MicroSD port			
		• 3 PMOD connectors			
		• 8 LEDs			
		• 8 slide switches			
		• 4 push buttons			
		• Capacitive touchscreen			
		• OLED 12 x 32 monochrome display			
		• 4-digits 7-segments LEDs			
		• MXP expansion connector			
		• USB HID			
		• Breadboard			
2	unit	<b>Direct Digital Synthesis Function Generator; Mdl: DG1022; Manufacturer: Rigol technologies Inc.; Made in USA</b>	18-09-1110	25,895.00	
		1 μHz to 5 MHz sine waveforms (SN # DG1D204103407/SN # DG1D203802929)			
		2 independent output channels. LCD display			
		32 kinds of standard with built-in fixed waveforms			
		Minimum stable output waveform: 1 mV(50Ω)			
		Multiple modulation functions, FM,FSK,ASK,PSK			
		Frequency sweep, amplitude sweep and burst functions			
		Over-voltage, over-current, output short-circuit and reverse voltage protections.			
1	unit	<b>Pneumatic and Electro-Pneumatic with PLC Training System; Mdl: SMCT-ALUPROCOMPLETE-V2; Manufacturer: Shoketsu SMC Corporation, Made in Japan/ Singapore</b>	18-09-1110	1,937,995.00	
		SYSTEM COMPONENT SPECIFICATIONS			
		All of the components will include silencers and one-touch fittings for 6mm tubing. The electric and/or electropneumatic components will include all of the necessary cables with instant connections for 4mm-diameter power jacks.			
		All of the pneumatic components must be lubricated, which must last throughout their service life without the need for lubricators.			
		All of the components must be industrial. Each component must be			
		• Headphone & Microphone Jack			
		mounted on a stainless steel plate, which will include holding clips to be			
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Surigao City

QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
<b>Account Code 10605140 - Technical &amp; Scientific Equipment</b>					
		<i>Balance Forwarded</i>			
		able to insert the components in the work panel. The stainless steel			
		plates will bear a metal label identifying the component in question,			
		including its reference number and ISO symbols.			
		Aluminium profile mounting board – Quantity: 1.			
		- The system will consist of an extruded aluminium panel with 8.5mm slots to fix the components.			
		Workstation – Quantity: 1.			
		<b>BATCH OF COMPONENTS AND ACCESSORIES</b>			
		<b>BASIC ELECTROPNEUMATICS COMPOSITION</b>			
		Filter regulator unit with shut-off valve.			
		- 5 um filtering.			
		- It will include a 3/2 discharge valve with silencer for connection and disconnection of the rest of the circuit.			
		- Possibility of vertical and horizontal positioning.			
		<b>QUANTITY: 1</b>			
		Check valve			
		It will include a 6mm fittings check valve.			
		<b>QUANTITY: 12</b>			
		Single acting cylinder			
		- Rod normally retracted.			
		- Stainless steel construction. Diameter: 20 mm. Stroke: 50 mm.			
		- Rubber cushion with built-in magnetic detection and rail.			
		<b>QUANTITY: 1</b>			
		Double acting cylinder with 2-wire reed switches			
		- Stainless steel construction. Diameter: 20 mm. Stroke: 100 mm.			
		- Rubber cushion with built-in magnetic detection and rail.			
		<b>QUANTITY: 1</b>			
		Double acting cylinder with 2-wire reed switches & speed controller			
		- Stainless steel construction. Diameter: 20 mm. Stroke: 100 mm.			
		- Rubber cushion with built-in magnetic detection and rail.			
		<b>QUANTITY: 1</b>			
		Double acting cylinder with 3-wire reed switches			
		- Stainless steel construction. Diameter: 20 mm. Stroke: 100 mm.			
		- Rubber cushion with built-in magnetic detection and rail.			
		<b>QUANTITY: 1</b>			
		Rodless cylinder			
		- Stainless steel construction. Diameter: 10 mm. Stroke: 100 mm.			
		<b>QUANTITY: 1</b>			
		Rotary actuator			
		<b>QUANTITY: 1</b>			
		3/2 way, N.C. spring return valve with green colour push button			
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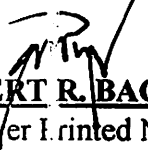
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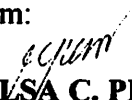
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Surigao City

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		<i>Balance Forwarded</i>			
		- Grade-level push button, normally in closed position, spring return.			
		QUANTITY: 1			
		3/2 way, N.C. spring return valve with red colour push button			
		- Grade-level push button, normally in closed position, spring return.			
		QUANTITY: 1			
		3/2 way, N.C. spring return valve with black colour push button			
		- Grade-level push button, normally in closed position, spring return.			
		QUANTITY: 2			
		5/2 way spring return valve with push button			
		QUANTITY: 1			
		3/2 way emergency stop push button			
		QUANTITY: 1			
		5/2 way valve with detent twist selector			
		QUANTITY: 2			
		3/2 way, N.C. Spring return valve, with roller lever- left direction actuation			
		- Mechanical Roller action			
		QUANTITY: 2			
		3/2 way, N.C. Spring return valve, with roller lever- Right direction actuation			
		- Mechanical Roller action.			
		QUANTITY: 2			
		3/2 way, N.C Spring return, with one-way roller lever - Left direction actuation			
		- One-way Roller lever.			
		QUANTITY: 1			
		3/2 way, N.C. Spring return valve with one-way roller lever - Right direction actuation			
		- One-way Roller lever.			
		QUANTITY: 1			
		3/2 way air operated, balanced poppet valve			
		QUANTITY: 2			
		5/2 way single air operated spring return valve			
		QUANTITY: 2			
		5/2 way double air operated valve with individual supply & exhaust spacer assembly			
		QUANTITY: 1			
		5/3 way close & exhaust center air operated valve			
		- Low consumption: 0,55 W.			
		- LED display and surge absorber.			
		- Three positions with spring centering			
		- Power-assisted system			
		QUANTITY: 1			
		Shuttle valve			
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		<i>Balance Forwarded</i>			
		Includes double simultaneous valve with logic function "OR"			
		QUANTITY: 4			
		Two-pressure valve			
		It will include a single-simultaneous valve with an "AND" logic function			
		QUANTITY: 2			
		Miniature pressure regulator			
		- Operating pressure: de C a 10 bar.			
		It will include a single scale: (0-1 MPa / 0-140 psi).			
		QUANTITY: 1			
		Quick-exhaust valve			
		- It will include a free exhaust valve with silencer.			
		QUANTITY: 1			
		In-line speed controller			
		- It will include two single direction speed controllers, operated manually.			
		QUANTITY: 1			
		Pressure gauge			
		With single-entry and single scale ( 0-1MPa)			
		QUANTITY: 1			
		Pneumatic pre-set counter:			
		- Pneumatic counter with preselection and reset facility.			
		- Automatic or manual preselection.			
		- Pneumatic signal once the amount of pulses selected has been reached.			
		QUANTITY: 1			
		Electrical pressure switch with change-over contact			
		- Pressure switch function included in a pressure gauge.			
		- Pressure range: 0 to 10 bar.			
		- Suitable for checking in-line pressure			
		QUANTITY: 1			
		3/2 way N.C. air operated time delay valve			
		QUANTITY: 1			
		Pneumatic indicator unit			
		- It will include a red optical gauge with a display angle of 180°.			
		QUANTITY: 1			
		White colour polyurethane tubing (20m)			
		QUANTITY: 1			
		Tube releasing tool			
		QUANTITY: 1			
		Set of 10 "Y" fittings			
		- Set of 10 one-touch fittings for 6mm tube.			
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QTY	UNIT	DESCRIPTION	PO #	UNIT COST	Property Number
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		<i>Balance Forwarded</i>			
		Set of 10 plug fittings		*	
		- Set of 10 one-touch fittings for 6mm tube.			
		Paper holder			
		- It will allow schematics to be attached in DIN-4 format on panel.			
		QUANTITY: 1			
		Tee fitting (set)			
		- Set of 10 one-touch fittings for 6 mm tubes.			
		QUANTITY: 1			
		Plug (set)			
		- Tool for plugging pressure outlets in 6 mm tube.			
		QUANTITY: 1			
		Push Button with 2 N.O. and 1 N.C. contacts			
		QUANTITY: 2			
		Electrical relay unit with 3 N.O. & 1 N.C contacts			
		Include three relays with 24V coil and 4 switchable contacts			
		Relay-activate LED			
		4mm safety terminals for use with quick connection wiring			
		QUANTITY: 15			
		Indicators (pilots, buzzer)			
		- It will include 4 pilot lights and a buzzer.			
		- Supplementary terminals for power distribution.			
		- 4mm terminals for snap connection cables.			
		QUANTITY: 15			
		Indicators (pilots, buzzer)			
		- It will include 4 pilot lights and a buzzer.			
		- Supplementary terminals for power distribution.			
		- 4mm terminals for snap connection cables.			
		QUANTITY: 1			
		Electrical timer unit with 1 change-over contact			
		- It includes two timer relays, one for connection and the other for disconnection.			
		- 24V coil, with switch contact.			
		- LED display of timer status.			
		- Time programmable between 0.1s and 1 h.			
		QUANTITY: 1			
		Electrical pre-set counter unit			
		- It includes inputs for counting and discounting.			
		- Power supply: 24V.			
		- Electromechanical preselection.			
		- Manual or electrical reset			
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