TEKHSOL

WEB BASED MONITORING SYSTEM

Any Time, Anywhere, Accumulate Data

Production,
Energy, Humidity,
Temperature, Air &
Water Consumption
Monitoring Solutions

Air Flow Module

Weighing Scale

Energy Meter

Multilayer Lamp

Water Flow Module

PLC

Temperature and Humidity Moudle

HMI

Fingerprint Scanner

VFD

RFID Reader

Motion Sensor

Photo Electric Sensor

Scrolling Display

Proximity Sensor

Barcode Reader

Who We are

TEKHSOL is a well established organization incorporated in the year of 2012. Web Based Monitoring System for Weaving, Spinning, Knitting, TFO, Fabric Inspection, Engineering and other manufacturing industries. TEKHSOL adapt latest technology and design its products indigenously, continuous innovation, value addition, up gradation brings sophistication.

TEKHSOL is a total solution provider in the fields of Web Based Monitoring System. At the R & D level TEKHSOL R & D engineers provides expertise in automation and electronic disciplines offering innovative solution to specialized customer application needs. TEKHSOL believes teamwork, encourage collaborative culture and closely working together. TEKHSOL provides career growth and continuous learning opportunities to work across functions and places.TEKHSOL maintains long term healthy relationship with its customers, technology partners and suppliers.

MISSION

At Tekhsol we work proudly ensuring the principles of client focus and satisfaction through technical excellence, leadership, organizational growth and a motivated human resource to build a long-term association.

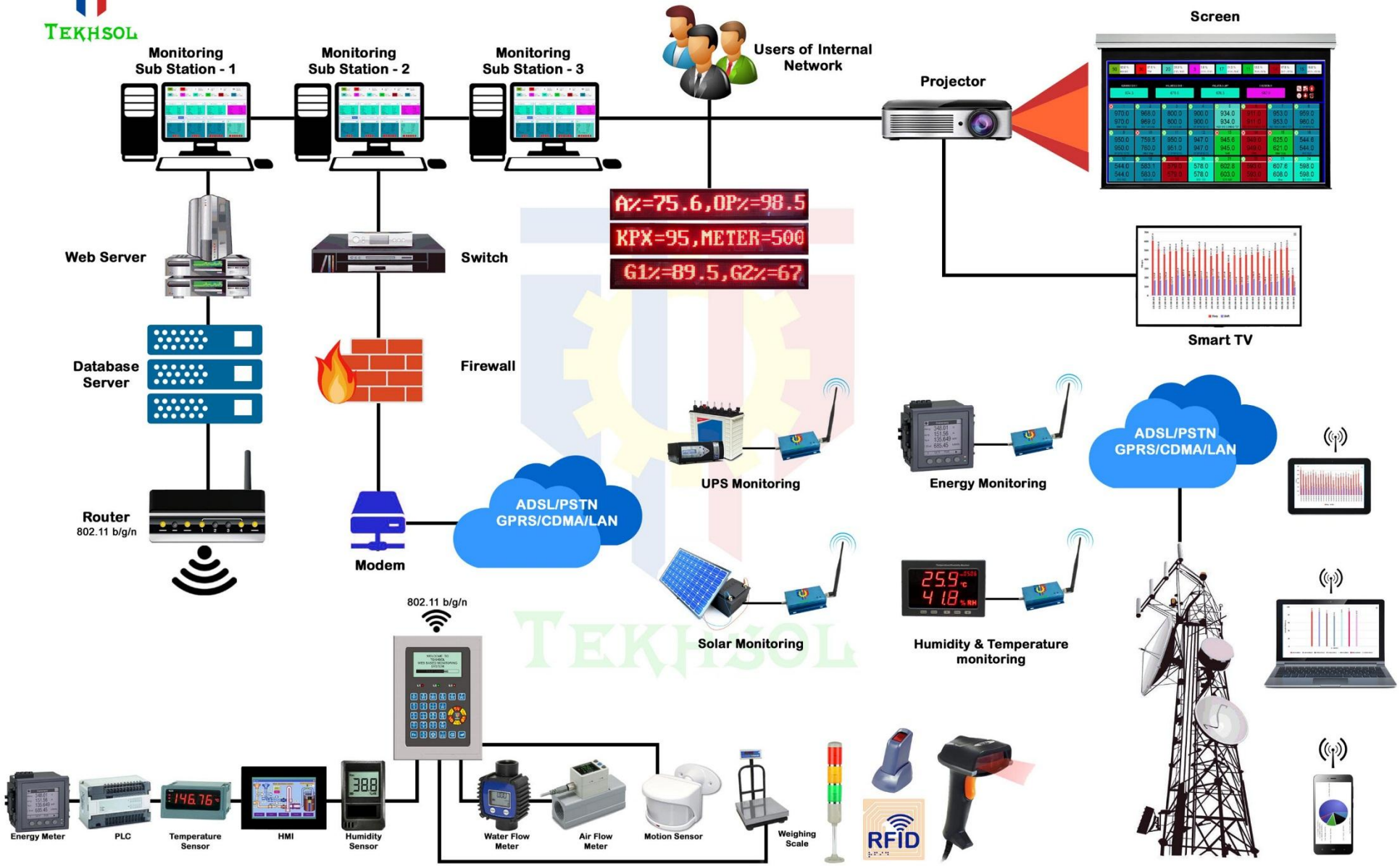
VISION

We strongly believe that people make organizations. This belief makes us to constantly strive for continuous improvements in building our organization as the most reliable and valued IT training and solutions provider. We work towards building our organization to be more diverse to meet global market requirements by achieving high quality standards and be successful in our undertaking.

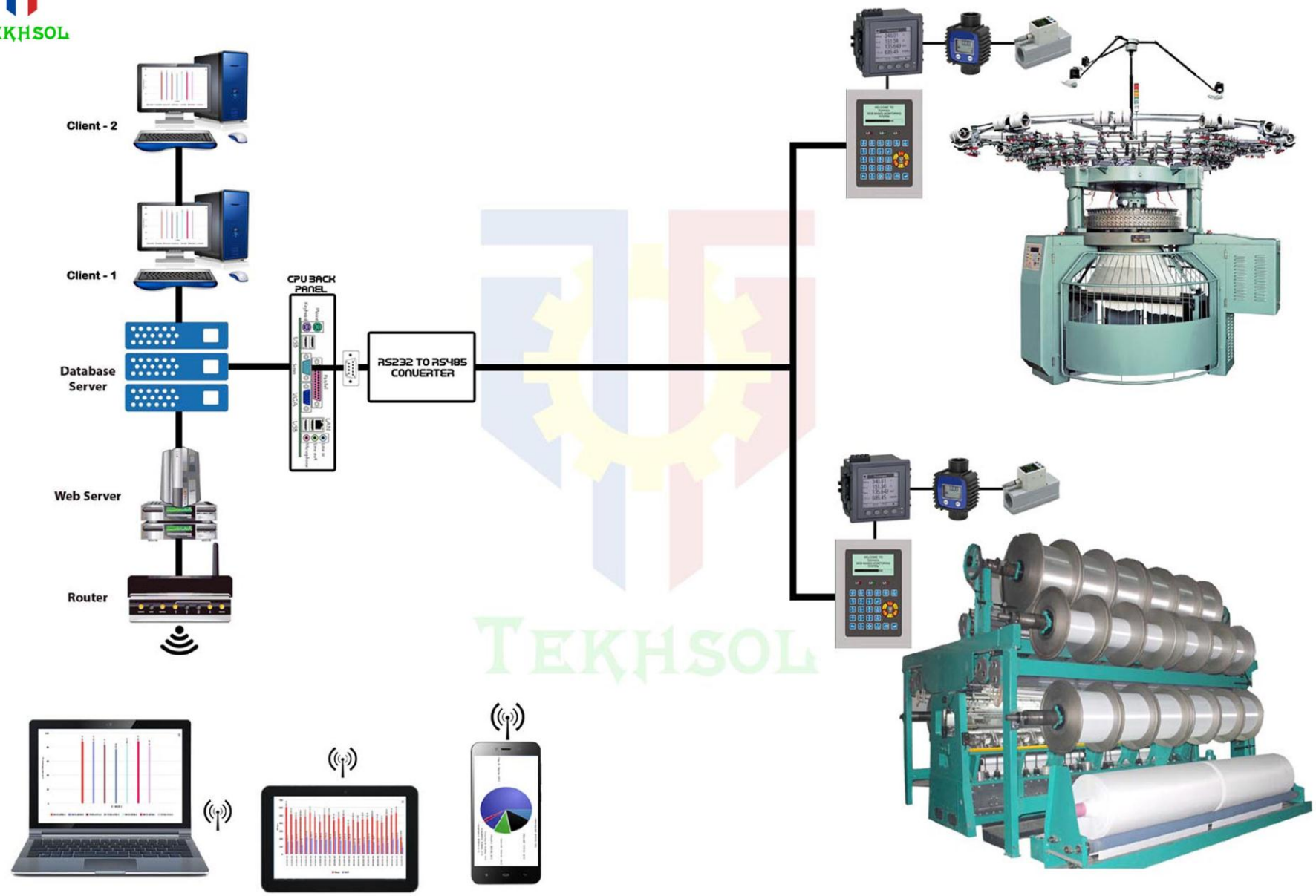
What We Do

We are primarily focused in understanding individual's requirements in terms of reliability, limitations, dynamic response and mainly security thereby providing you the most user friendly and economical solution. Our company has the best team of expertise who handle work maintaining high standards. We strive to give absolutely no chance to our clients for complaints. Perfectionism is what we believe in. As developers we also understand that your need for advancement in technology is very important. Contact us now and we will be obliged to work for you! Lekha is a Technology Solutions company with expertise in Communications and Embedded systems delivering products and services that enable clients to build, manufacture and deploy technologies profitably. Lekha is your 'all-under-single-roof' technology partner offering expertise in the areas of Hardware Board Design, FPGA, Embedded Software, Industrial Design and Design for compliance. Lekha also suppors clients with Customization, System integration and manufacturing services.

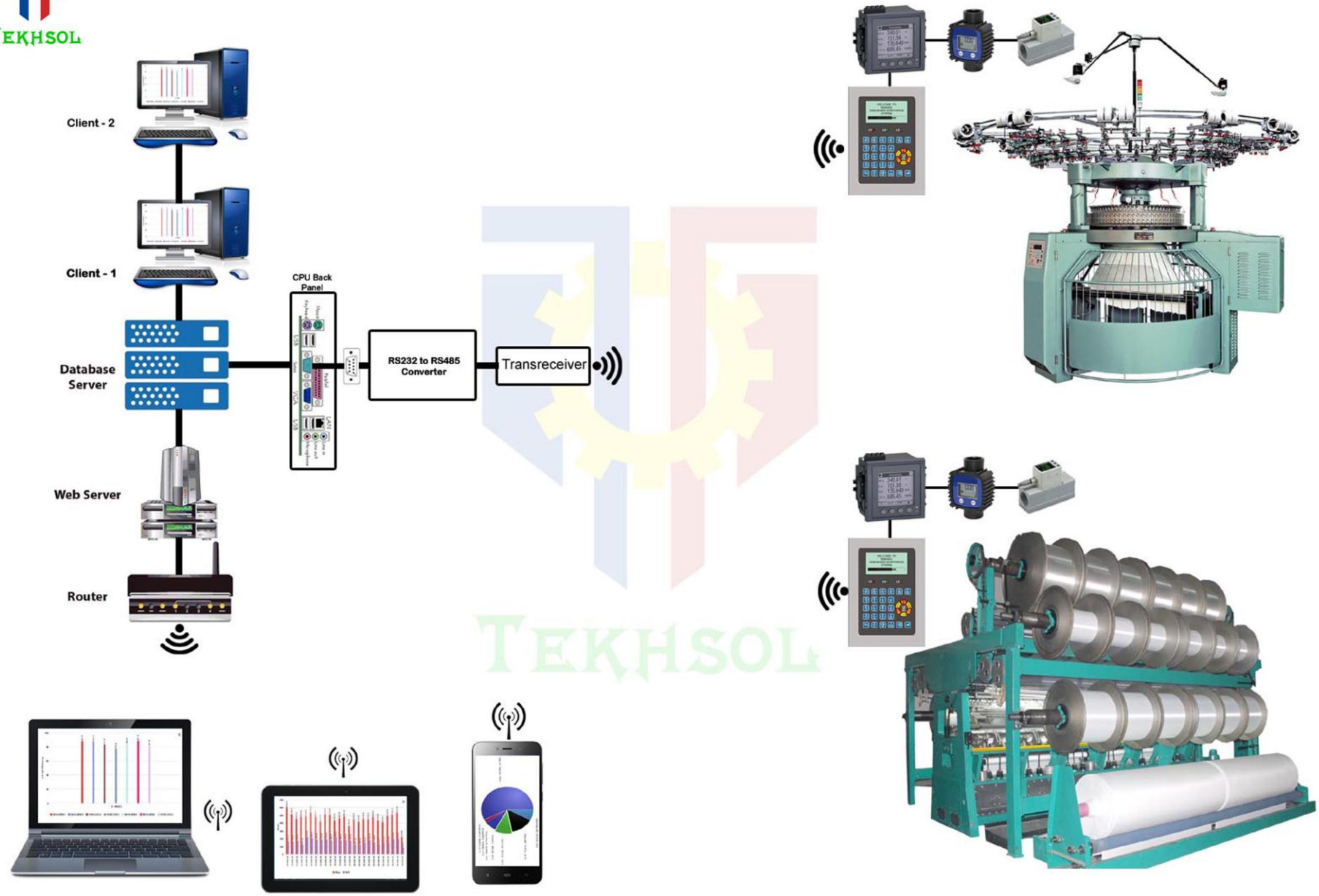
Block Diagram for Web Based Monitoring System



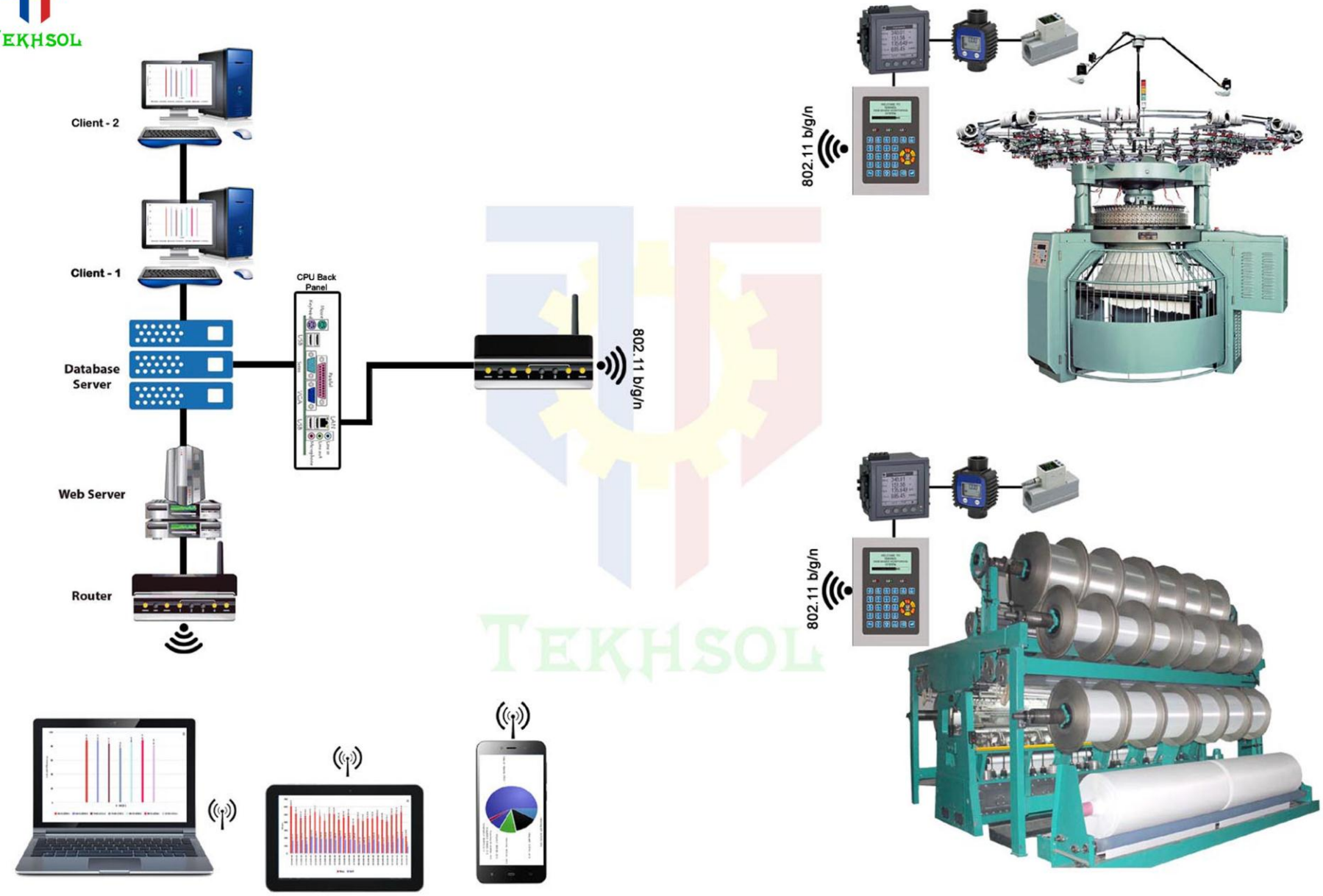
Block Diagram For Wired Communication



Block Diagram For Wireless Communication



Block Diagram For Wireless Communication



Hardware Features

Processor	
Processor	High-performance 8-bit Microcontroller
	32-bit Microcontroller
Program Memory	64 KB
	512 KB
Memory	
Internal Memory	2K bytes Of EEPROM
External Memory	4MB expendable upto 128MB
Operating System	
Operating Firmware	Embedded C
	RTOS
Display	
Character LCD	20x4 Alpha Numerical LCD
	16x4 Alpha Numerical LCD
	16x2 Alpha Numerical LCD
Graphical LCD	FSTN Monochrome LCD 128 X 64 with White LED Backlight.
TFT	TFT 3.5" QVGA 320 x 240 Resolutions with 16Bpp Transmissive, Landscape Mode, TFT and adjustable LED Backlight. 4 Wire Resistive Touch Screen Capability
Indicator	Multi Layer Lamp, Three Mono color signal status LEDs
Data Capture	
Keypad Details	6 x 5 Matrix Keypad
	6x6 or 4x4 Matrix Keypad
	USB – HID Class Keyboard
Signals	6 signals
Analog to Digital Conversion	Multi branded ADC input based Air flow sensors, Water flow Sensors and Load cells
RS 485	Multi branded RS 485 based PLC, HMI, Energy Meter, Humidity Meter and Temperature Meter
RS232	Multi branded RS 232 based Weighing Machines and Barcode Readers
TTL	Multi branded TTL based Energy Meter
Sensor	
Proximity sensor	3-Wire DC NPN/PNP Inductive Proximity Sensor
Motion Sensor	The PIR based Motion Detection Sensor
Photo Electric Sensor	Infrared based Object detection
Encoder	Incremental Encoder, Absolute Encoder and CNC Incremental Encoder
Modules Interfacing	
Barcode Reader	USB – HID Class Barcode Readers (Barcodes Code 39, Code 39 Full ASCII, Code 32, Code 128, UCC/EAN-128, Coda bar, Code11, Code 93, Standard 2 of 5, Industrial 2 of 5, Interleaved 2 of 5, UPC/EAN/JAN with Addendum, Telepen, MSI/Plessey, GS1DataBar (RSS) Linear, Linear-stacked)
RFID	RFID reader /writer 13.56Mhz - Compliance to ISO15693, ISO 14443A/B, ISO18000-2
Finger Print	Active Capacitive Fingerprint sensing with high resolution (508 dpi) with Algorithm for Matching 1:1 and 1:N. Active area 256 x 360 pixel (12.8 x 18.0 mm). Air ESD resistance up to (+ or -) 15kV. Thick coat.
GPS	High performance GPS receiver module featuring with weak signal acquisition technology
Data Communication	
Wired	Multi Branded RS485 Communication
	Multi Branded RS232 Communication
	Multi Branded TTL Communication
Ethernet	standard IEEE 802.3 @ 10/100 MB / Sec
Wireless	
XBee	IEEE 802.15.4, Frequency: 2.4 Ghz, with Internal / External Antenna.
Wi-Fi	802.11 b/g - Speed 11MB/54 MB per second, Internal / External Antenna, Frequency: 2.4 to 2.5Ghz, Output Power: 100mW US and International
GSM/GPRS	QUAD Band GSM for wide Coverage and global access with GPRS Multi slot Class 10, Class B with TCP/IP communication Protocol and With Internal/External Antenna
Bluetooth	IEEE Standard 802.15.1

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Software Features

- User friendly - User can monitor the industry anywhere from the world through Internet. Integrated information of all Machines at one place.
- Web Based Monitoring System software is also allows direct input for production and other working details. Which are not censored by Web Based Monitoring System.
- The management can realize the completeness in computerizing the production activity.
- Dash board for cumulative display of collected data in a single page. Running and Stoppage machines with their percentage.
- Monitoring Screen to show current month, Previous Shift, Previous Day and current shift status with easily understandable user friendly GUI.
- Efficiency wise machines counting with percentage. Instantaneous and Running shift efficiency and production data in the dash board view.
- Various Reports on Production, Stoppage & Efficiency based on selected criteria.
- Performance of any Machine, Design, Employee or Group can be analyzed at any point of time for any chosen period of working.
- Real time and past data comparison on Machine, Design, Operator, Technician, Supervisor, Operator Group, Technician Group, Supervisor Group, Buyer, Order etc.,.
- Periodical Break analysis and Efficiency Graphs to improve Production and Quality.
- Production Planning and Order status Reports.
- Projected Production information to improve current shift Production & Efficiency.
- Total working performance of the Mills for a day would be immediately available after the end of the day to the Top Executives.
- Month end Production report and stoppages analysis reports are immediately available after the month end without any manual preparation.
- Graphical representation of data with respect to productivity and stoppage are also available for quick and easy understanding of the Mills performance.
- More than 200 different kinds of reports are available. Each of these reports are carefully designed and are very meaningful to control the production routines in all respects.

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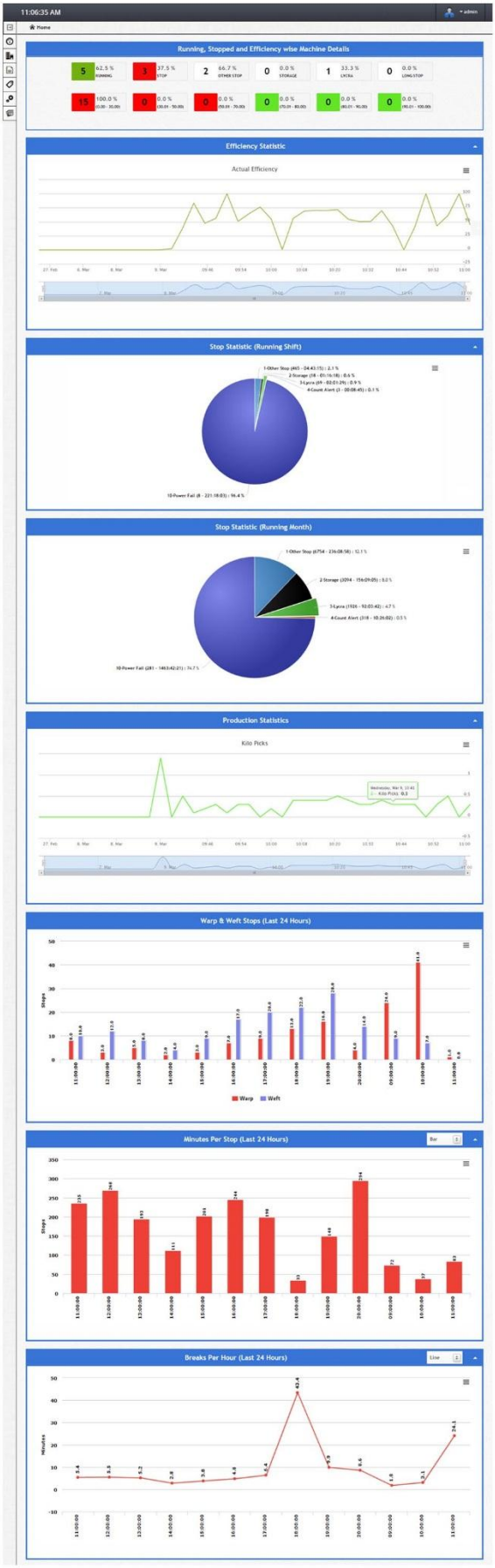
Features

Production Details	
Integrated All information about Machines at one Server	
Clarify Weak Areas	Machine Running Time
Actual Efficiency	Production Efficiency
Installed Efficiency	Utilization Efficiency
Instantaneous RPM and Average RPM	Production in Kilo Picks and CMPX
Various Stop Time	Warp Stop with Duration
Minutes/Warp	Warp/Hour
Weft Stop with Duration	Minutes/Weft
Weft/Hour	Other Stop with Duration
Minutes/Other	Other/Hour
Short Stops with Duration	Minutes/Short Stops
Short Stops/Hour	
Long Stops with Duration like Knotting, Gaiting and etc	
Hour Wise Production(Kilo Picks and CMPX) and Stop(Warp,Weft and Others) Report with Analysis	
Instant alerts for Order Status, Stoppages, Roll-Doff, Beam Runout, etc..	
Production Planning and Order status Reports	Automatic and Manual Roll Doff
Roll Doff Alerts & Reports	Beam Planning
Beam Analysis	Beam Run out
Automatic and Manual Employee Planning and Allocation	Employee Analysis
Dashboard For Immediate Response	Various Types Of Charts Like Line, Bar and Pie
Monitoring Screen For Production, Stoppage, RPM and Operator Details	
Hour / Shift / Day wise /From To Production and Stoppage Reports	
Monthwise Report For Production and Stoppage	
Comparision Report For Any TWO Parameters	
Units/Kgs	

Dash Board


11:06:35 AM
Home
Running, Stopped and Efficiency wise Machine Details
Efficiency Statistic
Actual Efficiency
Stop Statistic (Running Shift)
Stop Statistic (Running Month)
Production Statistics
Kilo Picks
Warp & Weft Stops (Last 24 Hours)
Warp
Weft
Minutes Per Stop (Last 24 Hours)
Breaks Per Hour (Last 24 Hours)

Monitoring Page

Running, Stopped and Efficiency wise Machine Details

8 — 53.3 % RUNNING	7 — 46.7 % STOP	4 — 57.1 % OTHER STOP	1 — 14.3 % STORAGE	2 — 28.6 % LYCRA	0 — 0.0 % LONG STOP

7 — 46.7 % (0.00 - 30.00)	0 — 0.0 % (30.01 - 50.00)	3 — 20.0 % (50.01 - 70.00)	2 — 13.3 % (70.01 - 80.00)	3 — 20.0 % (80.01 - 90.00)	0 — 0.0 % (90.01 - 100.00)

RUNNING SHIFT		PREVIOUS SHIFT		PREVIOUS DAY		THIS MONTH	
No.Of.Looms	15	No.Of.Looms	15	No.Of.Looms	15	No.Of.Looms	15
Act.Eff	59.62%	Act.Eff	51.94%	Act.Eff	42.75%	Act.Eff	54.26%
Prod.Eff	64.29%	Prod.Eff	59.23%	Prod.Eff	45.83%	Prod.Eff	61.32%
Ins.Eff	25.00%	Ins.Eff	25.00%	Ins.Eff	23.4%	Ins.Eff	17.05%
Picks	40552.00	Picks	81988.00	Picks	129847.00	Picks	333095.00
Ins.Picks	37440.00	Ins.Picks	37440.00	Ins.Picks	104888.67	Ins.Picks	83064.05

Shed | Machine Type | Machine | Design | Operator | Technician | Supervisor | Order

24_R
Act.Eff : 0.00%
Prod.Eff : 0.00%
Ins.Eff : 0.00%
RPM : 0.0
Picks : 0.00
Ins.Picks : 0.00
NO PROGRAM
Lycra - 08:31:25 - 00:00:00

24_J
Act.Eff : 26.92%
Prod.Eff : 26.92%
Ins.Eff : 0.00%
RPM : 31.0
Picks : 2270.00
Ins.Picks : 0.00
INTERLOCK
Storage - 13:02:20 - 00:01:53

26_R
Act.Eff : 0.00%
Prod.Eff : 0.00%
Ins.Eff : 0.00%
RPM : 0.0
Picks : 0.00
Ins.Picks : 0.00
NO PROGRAM
Other Stop - 08:31:25 - 00:00:00

26_j
Act.Eff : 0.00%
Prod.Eff : 0.00%
Ins.Eff : 0.00%
RPM : 0.0
Picks : 0.00
Ins.Picks : 0.00
NO PROGRAM
Other Stop - 08:31:25 - 00:00:00

28_R
Act.Eff : 0.00%
Prod.Eff : 0.00%
Ins.Eff : 0.00%
RPM : 0.0
Picks : 0.00
Ins.Picks : 0.00
RIB
Other Stop - 11:43:05 - 01:21:20

23_I
Act.Eff : 70.98%
Prod.Eff : 70.98%
Ins.Eff : 0.00%
RPM : 33.0
Picks : 6484.00
Ins.Picks : 0.00
INTERLOCK

30_R
Act.Eff : 64.03%
Prod.Eff : 64.03%
Ins.Eff : 0.00%
RPM : 22.0
Picks : 3934.00
Ins.Picks : 0.00
RIB

24_I
Act.Eff : 83.62%
Prod.Eff : 83.62%
Ins.Eff : 0.00%
RPM : 32.0
Picks : 5966.00
Ins.Picks : 0.00
INTERLOCK

32_R
Act.Eff : 57.81%
Prod.Eff : 57.81%
Ins.Eff : 0.00%
RPM : 18.0
Picks : 2796.00
Ins.Picks : 0.00
RIB

25_I
Act.Eff : 60.40%
Prod.Eff : 60.40%
Ins.Eff : 0.00%
RPM : 23.0
Picks : 3414.00
Ins.Picks : 0.00
INTERLOCK
Lycra - 13:06:02 - 00:00:31

34_R
Act.Eff : 0.00%
Prod.Eff : 0.00%
Ins.Eff : 75.00%
RPM : 0.0
Picks : 0.00
Ins.Picks : 0.00
INTERLOCK
Lycra - 08:31:25 - 00:00:00

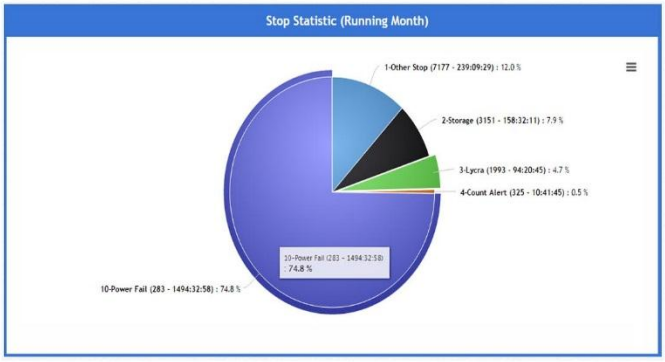
26_I
Act.Eff : 81.85%
Prod.Eff : 81.85%
Ins.Eff : 75.00%
RPM : 24.0
Picks : 5289.00
Ins.Picks : 0.00
INTERLOCK

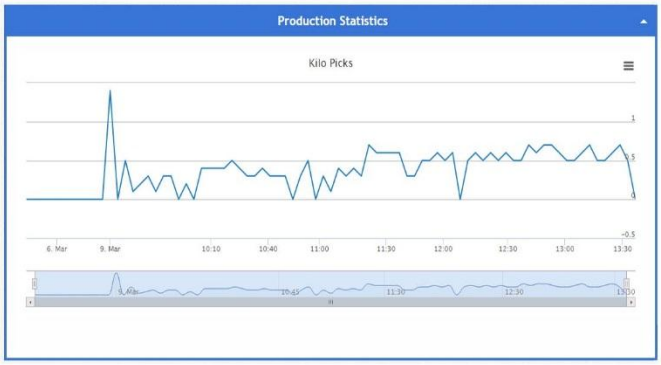
36_R
Act.Eff : 0.00%
Prod.Eff : 0.00%
Ins.Eff : 75.00%
RPM : 0.0
Picks : 0.00
Ins.Picks : 0.00
NO PROGRAM
Other Stop - 08:31:25 - 00:00:00

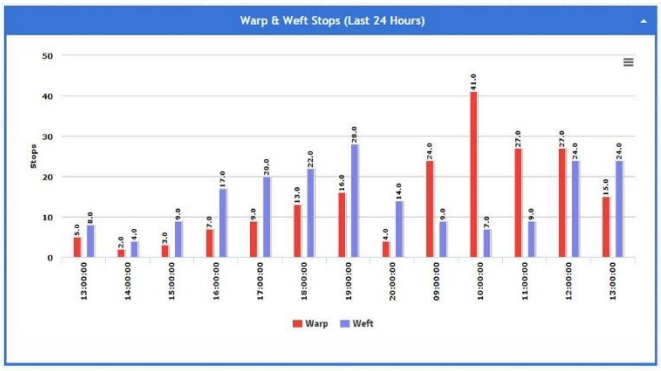
28_I
Act.Eff : 74.02%
Prod.Eff : 74.02%
Ins.Eff : 75.00%
RPM : 26.0
Picks : 4823.00
Ins.Picks : 9360.00
INTERLOCK

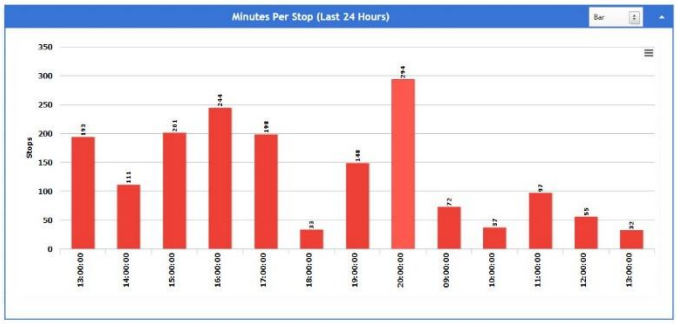
30_I
Act.Eff : 82.85%
Prod.Eff : 82.85%
Ins.Eff : 75.00%
RPM : 25.0
Picks : 5768.00
Ins.Picks : 9000.00
INTERLOCK

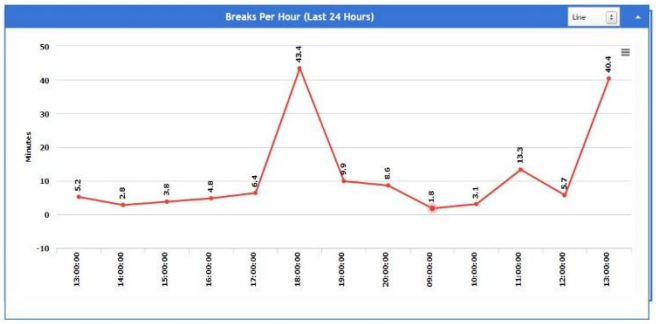
Graphical Representations

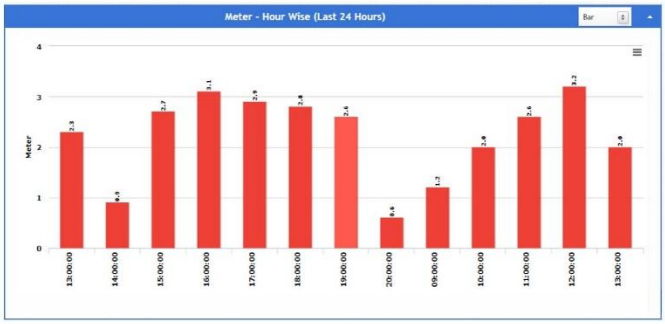












Single Sheet View

Efficiency

RPM

Efficiency Based Salary

4 - Hanesh		
MC	O.Eff%	Salary
32_R	58.7%	146.75
28_I	74.5%	186.25
30_I	82.3%	205.75
		538.75

Customized Screen for LED TV

DIO wise Detail Report On 2016-03-08 Shift:2

DIO	Operator	Fabric	A %	P %	RPM	Picks	ST	STT	CA	CAT	LS	LST	R.Time	T.S.Time	O.Salary
24_R	-	NO PROGRAM	0.0	0.0	0	0.0	1	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
24_J	-	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:01:07	0.00
26_R	-	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
26_j	-	NO PROGRAM	0.0	0.0	0	0.0	1	00:01:10	0	00:00:00	0	00:00:00	00:00:00	00:01:10	0.00
28_R	-	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
23_I	-	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
30_R	-	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	1	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
24_I	-	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
32_R	-	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
			0.0	0.0	0	0.0	2	00:00:07	1	00:00:00	0	00:00:00	00:00:00	00:02:17	0.00

Machine Type wise Detail Report On 2016-03-08 Shift:2

DIA	Fabric	A %	P %	RPM	Picks	ST	STT	CA	CAT	LS	LST	R.Time	T.S.Time	O.Salary
Machine Type : 1 - Picanol														
24_R	NO PROGRAM	0.0	0.0	0	0.0	1	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
24_J	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:01:07	0.00
26_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
26_j	NO PROGRAM	0.0	0.0	0	0.0	1	00:01:10	0	00:00:00	0	00:00:00	00:00:00	00:01:10	0.00
28_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
23_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
30_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	1	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
24_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
32_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
25_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
34_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
26_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
36_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
28_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
30_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
15		0.0	0.0	0	0.0	2	00:00:04	1	00:00:00	0	00:00:00	00:00:00	00:02:17	0.00

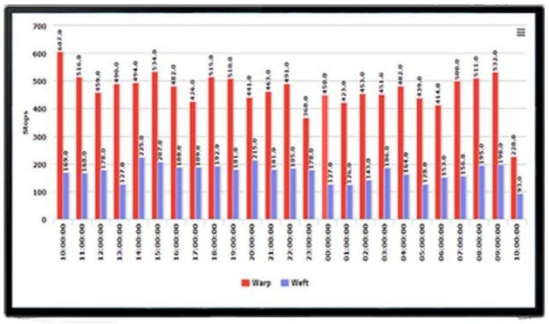
Machinewise Detail Report For Running Shift

Stop Details	Stop Begin Time	Stop Duration
1 - Other Stop	09-03-2016 13:11:06	00:00:04
2 - Storage	09-03-2016 13:12:07	00:02:04
1 - Other Stop	09-03-2016 13:14:06	00:00:04
1 - Other Stop	09-03-2016 13:15:08	00:00:04
1 - Other Stop	09-03-2016 13:16:07	00:00:04
2 - Storage	09-03-2016 13:16:49	00:00:24
1 - Other Stop	09-03-2016 13:17:06	00:00:04
1 - Other Stop	09-03-2016 13:19:16	00:00:08
2 - Storage	09-03-2016 13:22:37	00:00:31
2 - Storage	09-03-2016 13:24:23	00:01:03
2 - Storage	09-03-2016 13:30:26	00:00:11
2 - Storage	09-03-2016 13:30:37	00:00:37
93 :		00:10:32
24_J - Knitting :		00:10:32
93		00:10:32
01 - Valliammai Fabrics :		00:10:32

Shedwise Detail Report On 2016-03-08 Shift:2

DIA	Fabric	A %	P %	RPM	Picks	ST	STT	CA	CAT	LS	LST	R.Time	T.S.Time	O.Salary
26_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
26_J	NO PROGRAM	0.0	0.0	0	0.0	1	00:01:10	0	00:00:00	0	00:00:00	00:00:00	00:01:10	0.00
28_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
23_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
30_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	1	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
24_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
32_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
25_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
34_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
26_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
36_R	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
28_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
30_I	NO PROGRAM	0.0	0.0	0	0.0	0	00:00:00	0	00:00:00	0	00:00:00	00:00:00	00:00:00	0.00
15		0.0	0.0	0	0.0	2	00:00:04	1	00:00:00	0	00:00:00	00:00:00	00:02:17	0.00
		0.0	0.0	0	0.0	2	00:00:04	1	00:00:00	0	00:00:00	00:00:00	00:02:17	0.00

Add On Features



SMS-Alert

TEKHSOL as a company focused on providing the highly accurate and reliable industrial monitoring and control systems for all industries through innovated sensors and technologies. We apply the best possible technologies at very affordable cost and so the every customer can implement the monitoring and control systems.

We automating the Managements information Systems with Live and Practical data with very high accuracy towards helping the management peoples to take precious decision based and data science and verification of the decision by themselves.

Monitoring system helps the decision makers to choose the right operating point in production setting versus energy cost to optimize the profit and select profit efficient process setting, spare parts selection and spare parts life cycle determination.

We focused on factory automation through the automatic data collection and automatic data analyzing and implementing automatic control towards achieving the maximum cost control and improve profit efficiency to maximum possible level.

Human interfaces like touch screen. Reporting system with wider information sharing base like Clients support, Support on tablets.

Implemented with various alarms through SMS, Auto Email, Deviation Reports, Easy programmable Act on Alarm system helps the customer to avoid various losses and prevent accidents.

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