DCS141xA-010



Electronic Andon System.

Operation Manual



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1. What is an Electronic Andon System?

An Andon is a visual control that indicates the status of a machine, manufacturing line or work process. The Electronic Andon System is accompanied by 7-Segment Displays, audible alarms, Short Message Service to alert supervisors when there is a defect in product line.

Andon System is an effective way to alert support personnel who must attend to several automated processes at a time or are not always located in close proximity to the work they oversee.



2. Keypad and Andon Unit.



How it works

Start an Event.

- Key pad consists of 6 switch inputs for each department.
- Andon consists of 6 different color LED lamps for each department.
- When a problem occurs in a production line, the switch of the relevant department must be turned on.
- Then the relevant Red LED lamp in the keypad will shine. It is very important to identify the location of the error from far away and reach it very soon.

- Andon will automatically start counting time and display It in its display panel.
- In addition to time display, relavant Alarm sound is heard , and perticular colour LED lamp is indicated.
- Reset switch can be used to reset alarm sound if necessary.
- The Andon sends timer data to main PC.

Stop an Event.

- Once the problem is solved in the production line, the particular switch should be turned off.
- Then, the lamp in the key pad will go off.
- Andon unit will stop counting time, Alarm sound and LED lamp as well.
- The Andon sends timer data to main PC.

3. Department Display Unit.



Figure 3.1

How it works

- This unit consists of LED yellow lamps for each Production Line. (Each production line has one Andon unit)
- When a problem occurs in a production line, it will appear in this panel by lighting relevant LED lamp.
- The total downtime for the department will display in the display panel in minutes.
- Reset switch can be used to reset alarm sound if necessary.

4. Andon Software.

- Select "DTCS-14xxx" icon and Double Click on it.
- Select the correct COM PORT for Andon and Click on "Connect" Button.

ONLINE DOWNTIME CAPTURING SYSTEM (Ver 5)		ONLINE DOWNTIME CAPTURING SYSTEM (Ver 5)	
ANDON COM PORT SELECT	SMS ACTIVATE	ANDON COM PORT SELECT	SMS ACTIVATE
PORT COM1 Connect	Activate	PORT COM	Activate
Andon Setting	Report Settings	Andon Setting Connected to Serial PORT Sucsessfully	port Settings
Andon Screen 60	Qity 60 Min	Andon Screen	Rity 60 Min
Downtime Summery 30	Tech 60 Min	Downtime Summery	Tech 60 Min
	Cut 60 Min		Cut 60 Min
Report Auto Save 15	RM 60 Min	Report Auto Save 15 Create Report	RM 60 Min
Error Log ON 👻	QCO 60 Min	Error Log ON 🗸	QCO 60 Min
	MC 60 Min		MC 60 Min
START		START	
System Reset Main Alarm Reset	EXIT	System Reset Main Alarm Reset	EXIT

Figure 4.1



• Click on "START" button.

🖳 Downtime (Downtime Capturing System - Test ver1													
	DOWN TIME CAPTURING SYSTEM													
	Mod. 1 Mod. 2 Mod. 3 Mod. 4 Mod. 5 Mod. 6 Mod. 7 Mod. 8 Mod. 9 Mod. 1													
QA	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				
Tech	0:02:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				
Cut	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				
RM	3:25:45	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				
QCO	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				
MC	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				
	Mod.11	Mod.12	Mod.13	Mod.14	Mod.15	Mod.16	Mod.17	Mod.18	Mod.19	Mod.20				
QA	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				
Tech	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				
Cut	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				
RM	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				
QCO	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				
МС	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00				



How it works

Event Start

- Data coming from Andon unit is displayed on Andon software as shown in figure 4.3
- Cells in the software are normally blue in colour.
- When a new event occurs Andon units send data to PC.
- Then the color of the relevant cell changes to Green and display cumulative time value, in the cell.
- After 10 Minute, cell automatically changes to red color.

Event Stop

- Ones the problem is solved in the production line, the switch is turned off at the production line.
- Andon unit stop counting time and sends data to PC.
- Then the relevant cell changes in to blue.

5. SMS Server Software.

How it works

• To activate the "SMS Server" software, click on "Activate" button.

ONLINE DOWNTIME CAR	PTURING SYSTEM (Ver 5)			• 💌	DTCS SMS Server
ANDON COM PORT SE	ELECT	Connect	SMS ACTIVATE			DOWN TIME CAPTURING SYSTEM
Andon Setting			Report Sett	tings		
Andon Screen	60		Qlty	60	Min	NETWORK SELECT SMS UNIT COM PORT SELECT
Downtime Summery	30		Tech	60	Min	GSM ▼ PORT COM3 ▼ Connect
			Cut	60	Min	
Report Auto Save	15	Create Report	RM	60	Min	
Error Log	ON		QCO	60	Min	Start Setting Exit
			MC	60	Min	
	START					
System	Reset	Main Alarm Reset	EX	IT		Figure 5.2

Figure 5.1

• Then, the "DTCS SMS Server" software will appear as in figure 5.2

Now, select the correct COM port relevant to the Modem. Click on • "Connect" button. The "Connected to Modem Successfully" message will appear as in figure 5.3.



Figure 5.3

Click on "Start" button. The "SMS Server" Software will be • minimizing to notification area.



Figure 5.4

Figure 5.5

SMS Message is issued in 4 steps.

- 1. The 1st step to supervisors in 5 minutes
- 2. The 2nd step to Executives in 10 minutes
- 3. The 3rd step to general managers in 20 minutes
- 4. The 4th step to general managers in 30 minutes





6. Reports

• Reports are saved automatically in the "hard disk"

ile <u>E</u> dit <u>V</u> iew <u>T</u> ools <u>H</u> e	elp					
Irganize 👻 🛛 Include in libra	iny 🔻 Sl	nare with 🔻 🛛 Burn 🛛 New folder		8==	•	0
🗧 Favorites	-	Name	Date modified	Туре	Size	
Marktop		DTCS_2013-7-30_14-29-49.txt	11/28/2013 10:27	Text Document		1 KI
😌 Dropbox		DTCS_2013-7-30_14-51-18.txt	7/30/2013 2:51 PM	Text Document		1 KI
📤 Google Drive		DTCS_2013-7-30_15-5-8.txt	7/30/2013 3:05 PM	Text Document		1 KI
3 Recent Places		DTCS_2013-7-30_15-5-23.bt	7/30/2013 3:05 PM	Text Document		1 KI
		DTCS_2013-7-30_15-5-38.txt	7/30/2013 3:05 PM	Text Document		1 Ki
Libraries	=	DTCS_2013-7-30_15-9-43.txt	7/30/2013 3:09 PM	Text Document		1 KI
Documents		DTCS_2013-7-30_15-9-54.bit	7/30/2013 3:09 PM	Text Document		1 Ki
a) Music		DTCS_2013-7-30_15-43-4.txt	7/30/2013 3:43 PM	Text Document		1 Ki
E Pictures		DTCS_2013-7-30_15-45-4.txt	7/30/2013 3:45 PM	Text Document		1 K
🚼 Videos		DTCS_2013-7-30_15-48-16.txt	7/30/2013 3:48 PM	Text Document		1 KI
		DTCS_2013-7-30_15-58-43.txt	7/30/2013 3:58 PM	Text Document		1 KI
E Computer		DTCS_2013-10-15_12-34-41.txt	10/15/2013 12:34	Text Document		1 KI
🚢 Local Disk (C:)		DTCS_2013-10-15_12-36-27.txt	10/15/2013 12:36	Text Document		1 Ki
Re Projects (D:)		DTCS_2013-10-16_21-52-6.txt	10/16/2013 9:52 PM	Text Document		1 KI
🕞 Personal (F:)		DTCS_2013-10-16_21-56-8.txt	10/16/2013 9:56 PM	Text Document		1 Ki
📷 Local Disk (G:)		DTCC 2012 10 16 22 0 0 ++	10/16/2012 10:00	T + D		1 1/1

Figure 6.1

• Reports are saved in Text format.

0	TCS_2	012-10-10	_18-5-7.	tot - N	otepad								-	×
Eile 5N 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	Edit	Format MODULE Module Module Module Module Module Module Module Module Module Module Module Module Module Module Module	View NAME 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	Help	IE 0:00:00 0:00:00 0:00:01 0:00:01 0:00:03 0:00:02 0:00:03 0:00:02 0:00:03 0:00:02 0:00:03 0:00:02 0:00:03 0:00:02 0:00:03 0:00:05 0:0	Tech 0:21:40 0:00:00 0:00:00 0:01:8:01 0:00:00 0:00:02 0:00:03 0:00:00 0:00:01 0:00:01 0:00:01 0:00:01 0:00:01 0:00:01 0:00:03 0:00:03 0:00:03 0:00:03 0:00:03 0:00:03	Cutting 0:06:35 0:00:00 0:03:57 0:08:33 0:52:06 0:01:42 0:00:00 0:01:42 0:52:06 0:252:16 0:252:16 0:252:16 0:252:16 0:252:16 0:252:16 0:252:16 0:252:16 0:252:16 0:252:16 0:252:16	RM 0:00:00 0:00:00 0:00:00 0:00:01 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02	QC0 0:00:00 0:00:00 0:00:00 0:00:01 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02 0:00:02	MC 0:09:28 0:00:00 0:02:39 0:08:46 0:06:44 0:00:58 0:06:44 0:00:50 0:10:50 0:10:50 0:10:50 0:00:05 0:00:05 0:05:07 0:06:44 0:05:07 0:06:44 0:00:00 0:00:00 0:00:00 0:00:00 0:00:00	I			

Figure 6.2

• Data can be easily imported to excel file.

C .		7 • (° •) =		Book1	- Microsoft	Excel				- 0	x
	Hon	ne Insert Page Lay	rout Formu	ilas Dat	a Revie	w View	Develop	per		🥑 -	•
Pas	te 🛷	Calibri * 12 B Z U * M * Δ Font \Box	= = = ≡ ≡ ≡ ∉ ∉ ≫·	Ger	neral ← ← % → ⇒.0 amber 「>	Styles	Delete * Format * Cells	∑ * Arr Sort & C * Filter * Editin	Find & Select *		
	J14	- (9	f_{x}								
	А	В	С	D	E	F	G	н	1	J	
1	SN	MODULE NAME	IE	Tech	Cutting	RM	QCO	MC			
2	1	Module 1	0:00:00	0:21:40	0:06:35	0:00:00	0:00:00	0:09:28			
3	2	Module 2	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00			
4	3	Module 3	0:00:00	0:03:35	0:03:57	0:00:00	0:00:00	0:02:39			
5	4	Module 4	0:00:01	0:18:01	0:08:33	0:00:01	0:00:01	0:08:46			
6	5	Module 5	0:00:03	0:00:03	0:52:06	0:00:02	0:00:02	0:06:44			
7	6	Module 6	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00			
8	7	Module 7	0:00:02	0:00:02	0:01:42	0:00:02	0:00:02	0:00:58			
9	8	Module 8	0:00:03	0:00:03	0:52:06	0:00:02	0:00:02	0:06:44			
10	9	Module 9	0:00:02	0:00:02	0:01:42	0:00:02	0:00:02	0:00:58			
11	10	Module 10	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00			
12	11	Module 11	0:00:01	0:00:01	0:11:37	0:00:01	0:00:01	0:19:55			
13	12	Module 12	0:00:02	0:00:02	0:01:42	0:00:02	0:00:02	0:00:58			100
14	13	Module 13	0:00:03	0:00:03	0:52:06	0:00:02	0:00:02	0:06:44			
15	14	Module 14	0:00:02	0:00:01	0:25:31	0:00:00	0:00:00	0:05:08			
16	15	Module 15	0:00:01	0:00:01	0:10:14	0:00:01	0:00:01	0:05:07			
17	16	Module 16	0:00:03	0:00:03	0:52:06	0:00:02	0:00:02	0:06:44			
18	17	Module 17	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00			
19	18	Module 18	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00			
20	19	Module 19	0:00:02	0:00:02	0:01:42	0:00:02	0:00:02	0:00:58			_
21	20	Module 20	0:00:03	0:00:03	0:52:06	0:00:02	0:00:02	0:06:44			
22											
23	H S	heet1 Sheet2 Shee	et3 / 🞾			14					F 1
Read	y 🛅							100% 🤆)	0	-+





7. Wiring Diagram.

8. System Requirements.

- PC, running with "Windows 7" operating system and should have one serial port.
- > 01 Mobile SIM is required for SMS Alert
- UPS power supply is required for Andon units and Department display units.
- Mounting brackets are required for Andon, Keypad and Department display units.

"Qio" Queue Management Systems Electronic Andon Systems Sky Security Systems Digital Watches and Timers Alarm Systems Power Supplies LED Display Systems Electronic Books Electronic Classes PIC Microcontroller Accessories Printed Copper Boards



Sky Technologies.

For all kind of Microcontroller Based electronic circuit Designing, PCB designing and fabricating.