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1 OUTLINE

1.1 General Construction

SRCC (Sky Rav Clean Controller) consists of two control systems.

One control system is OPC (Object oriented Panel PC), which receives remote commands from MCS computer (Host) and sends transport commands to SRC. OPC also monitors transport status and errors in the control equipment, and it controls the functions of manual operations performed by operators. OPC's operations are compliant with GEM/IBSEM, and the functions such as a remote command, event management, alarm management and status variable management are provided.

The other control system is MPC (Murata Programmable Controller), which controls the devices and status (e.g.: the indicators, the power supply status, the SRC status, error displays and the fire shutter) on the rail.

1.2 FCC Warning

This equipment includes the wireless communication unit inside It is metal cased and locates at the center area inside of this equipment

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CAUTION

To keep proper efficiency, never use the parts such as wire harness which are not assembled originally.

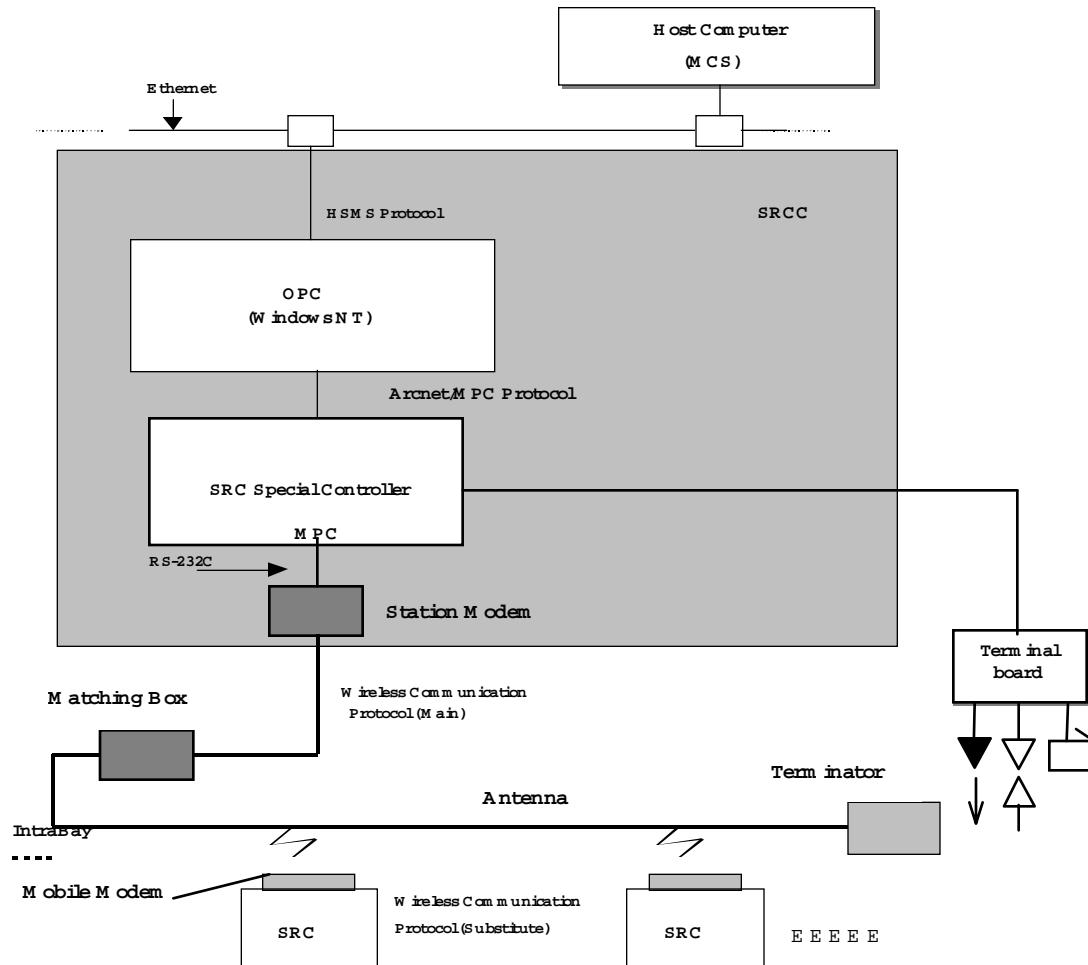
To keep the frequency accuracy, avoid the mechanical shock.

NOTICE

This equipment ha been tested and found to comply the limits for a Class A digital device, pursuant to part 15of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residual area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

2 System Configuration:

SRC System is configured with the basic devices shown below:



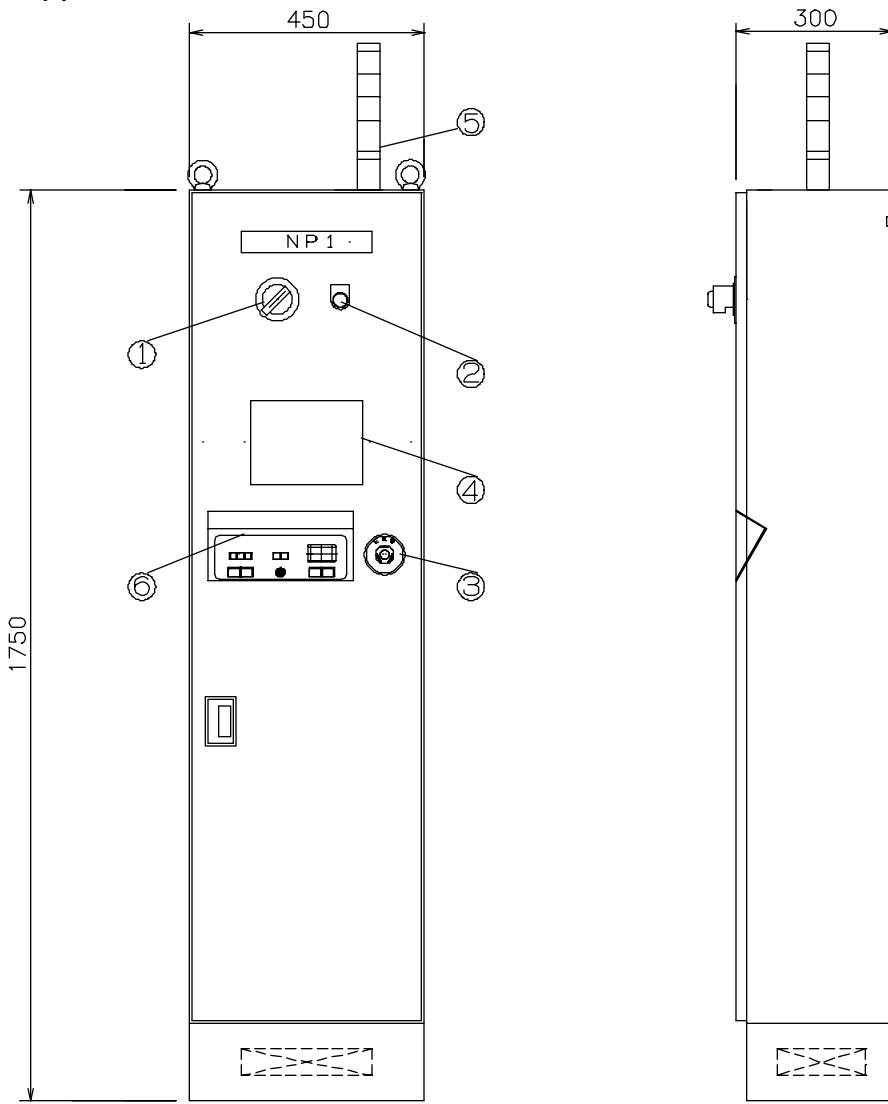
3 Electric Specifications

3.1 Supplied Power Source

Please supply the power according to the below conditions.

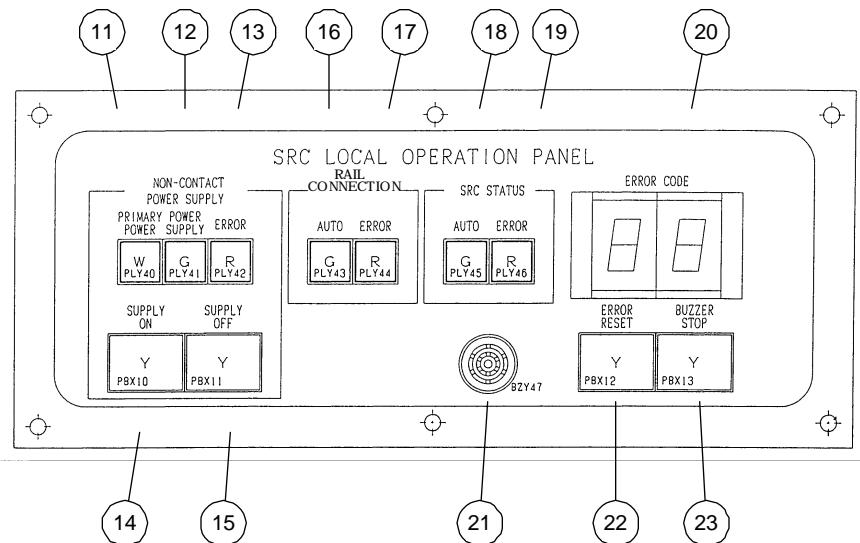
System Name	Phase	Power	Frequency	Capacity	Current (MAX.)	Breaker of Main Control Panel	Power Receiving Method	Quantity of Circuits
SRCC system	3	AC208V ±5%	60Hz ±1%	2KVA	10A	10A	Terminal block on breaker	1
The 3 rd class grounding for ensuring safety							Terminal block	1 for each

3.2 External Appearance of Control Panel



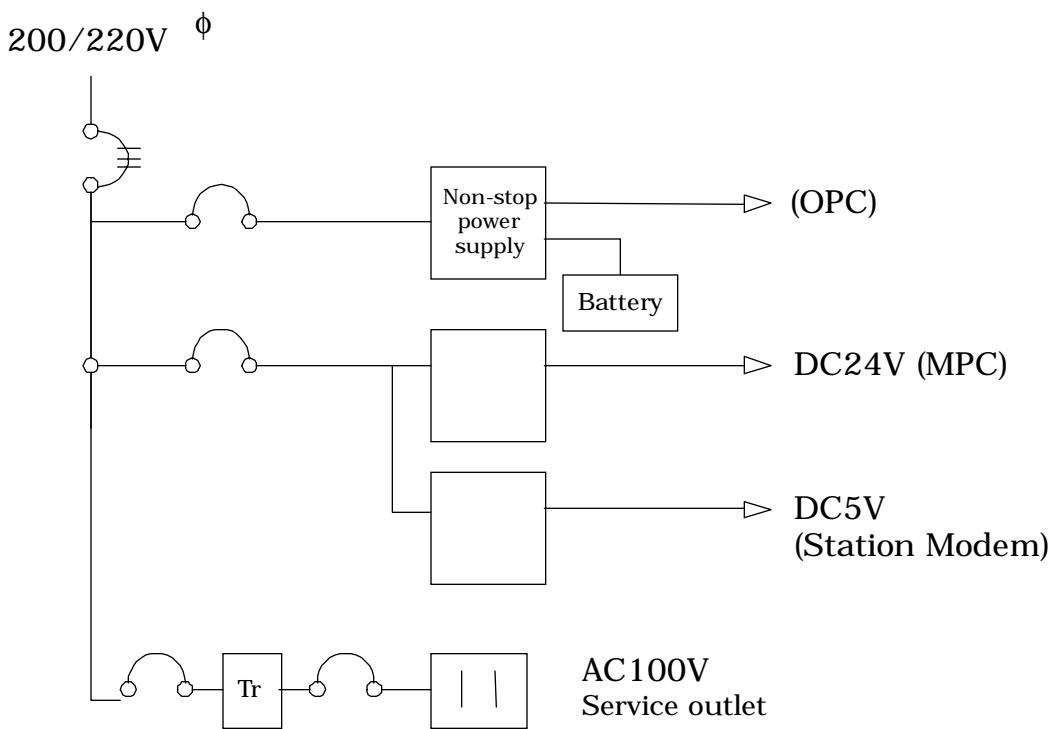
No.	Item	Color	Note
1	Main breaker	---	Turn ON and OFF the power supplied to the control panel.
2	Power supply display light	White	Lit when the power is being supplied to the control panel.
3	EMO switch	Red	EMO switch for the SRC system. Press this switch to turn off the power of the whole SRC system.
4	OPC		Displays the operation screens of SRCC.
5	Signal tower		Red : This lamp flashes when an error is detected in the SRC system. Yellow : Green : Blue :
6	Operation panel		See the next page.

Operation Panel



No.	Name	Color	Function
	<High-frequency power>		
11	PRIMARY POWER	White	Lit when the high-frequency power is being supplied.
12	POWER SUPPLY	Green	Lit while the high-frequency power is being supplied.
13	ERROR	Red	Lit when an error occurs in the high-frequency power supply.
14	SUPPLY ON	Yellow	Press this switch to start supplying the high-frequency power.
15	SUPPLY OFF	Yellow	Press this switch to stop supplying the high-frequency power.
	<Maintenance rail>		
16	RAIL CONNECTION – AUTO	Green	Lit when it is possible for a vehicle to pass through on the maintenance rail.
17	RAIL CONNECTION – ERROR	Red	Lit when it is impossible for a vehicle to pass through on the maintenance rail.
	<SRC>		
18	SRC STATUS – AUTO	Green	Lit while SRC is performing automatic operations.
19	SRC STATUS – ERROR	Red	Ls lit when an error occurs in SRC.
	<Common>		
20	ERROR CODE	Red	Displayed in 2 digits and 7 segments in order to describe an error in SRCC.
21	Buzzer	---	Buzzer sounds when an error occurs.
22	ERROR RESET	Yellow	Press this switch to reset an error after removing the error cause.
23	BUZZER STOP	Yellow	Press this button to stop the buzzer sound.

3.3 Control Panel Control Block

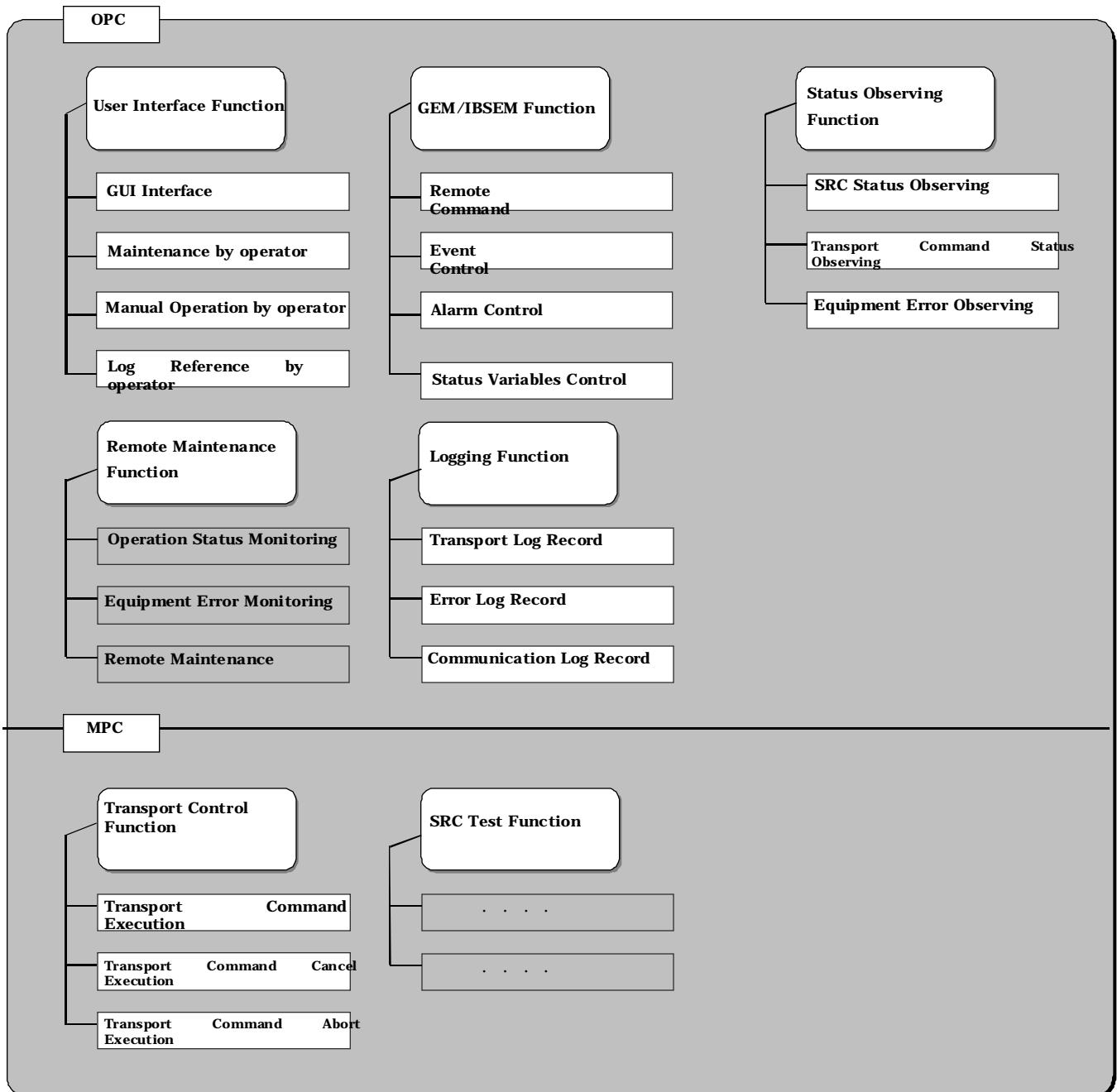


3.4 OPC Electric Specification

Item	Specification
Display panel	10.4 inch, TFT, 800 × 600 dot color
CPU	MMX 223MHz
Memory	64MB
HDD	2GB (Mirror)
Floppy	3.5 inch
OS	Windows NT 4.0
Interface	Touch panel: 1 line
	Keyboard : 1 line
	Mouse : 1 line
	LAN : 1 line (10Base-T)
	Arcnet : 1 line
	RS232C : 4
Power	AC100V ~ 260V
Battery	2.2AH, Backup time: 5 minutes
External size	See another document.
External appearance drawing	

4 Function Description

4.1 Function Configuration



4.2 Description of Function

4.2.1 Operator Interface

- GUI Interface

SRCC functions under Windows NT and provides interface based on GUI for an operator. A touch panel is used for this operation.

- Maintenance by operator

Transfer command cancellation and aborting are possible while an operator is checking on transfer command status and SRC status with a monitor.

Status display and setting changes on IBSEM/GEM functions are also provided

- Manual Operation by operator

Operation orders such as transfer and traveling are provided for SRC by an operator.

Initialization instructions in starting up of the system are also provided for SRC by an operator.

- Log Reference by operator

The Log data reference is possible by an operator. The log search function can also provide a display of a desired log data by specifying date and a log type.

4.2.2 GEM/IBSEM Function

- Remote Command

SRCC receives commands shown below from the Host computer and processes them.

Remote Command Name	Description	Main Data
TRANSFER	Transfer Command	Command ID Cassette ID Priority From To
CANCEL	Transfer Command Cancellation before execution	Command ID Cassette ID
ABORT	Transfer Command Aborting in Execution	Command ID Cassette ID
PAUSE	Pause of TSC Status	Command ID
RESUME	Resume of TSC Status	Command ID

- Event Control

“Event Report”

SRCC makes event reports on every detected item to the Host Computer. Each event report has its own reporting type, and it can be changed by the Host Computer and an operator.

“Active Event Setting”

SRCC make a report when it receives an event list request from the Host Computer. It also corresponds to active event setting requests.

- Alarm Control

“Alarm Report”

SRCC make an alarm report to the Host Computer when it judges a detected error as an alarm. Each alarm report has its own alarm ID. SRCC also makes an event report on causes of an alarm when it occurs.

- Status Variables Control

SRCC controls the below status variables requested by IBSEM. It makes an event report on changes of each status variable.

Status Variables	Description	Status
TSC Status	Execution Status of Controller	INIT PAUSED AUTO
Transfer Command Status	Transfer Command Status	QUEUED WAITING TRANSFERRING PAUSED CANCELING ABORTING
Vehicle Status	Vehicle (SRC) Status	ENROUTE PARKED ACQUIRING DEPOSITING ASSIGNED NOT ASSIGNED INSTALLED REMOVED
Carrier Status	Load Status	INSTALLED REMOVED
Host Control Status	Host Control Status	EQUIPMENT OFFLINE ATTEMPT ONLINE HOST OFFLINE ONLINE LOCAL ONLINE REMOTE
Communication Status	Communication Status	ENABLE DISABLE

4.2.3 Transfer Control Function

- Transfer Command Execution

SRCC send an order to SRC on the basis of TRANSFER Command from the Host Computer and execute cassette transfer. It also observes SRC and transfer status and make event reports to the Host Computer.

- Transfer Command Cancel Execution

SRCC executes a cancellation of TRANSFER Command with CANCEL Command from the Host Computer. However, the cancellation is possible only before the TRANSFER Command is executed (before SRC starts loading).

- Transfer Command Abort Execution

SRCC executes TRANSFER Command Aborting with ABORT Command from the Host Computer. However, the command aborting is possible only while the transfer command is being executed.

4.2.4 Status Observing Function

- SRC Status Observing

SRCC observes SRC status by communicating with SRC through a wireless communication protocol and executing a polling constantly. This operation makes it possible to detect events and alarms.

Also, an operator can check SRC status through a monitor.

- Transfer Command Status Observing

SRCC observes transfer command status by communicating with SRC through a wireless communication protocol and executing a polling constantly. This operation makes it possible to detect events and alarms.

Also, an operator can check transfer command status through a monitor.

- Equipment Error Observing Function (PLC)

SRCC captures IO from PLC and detects power supply shutting in a diversion table and opening/closing of a fire-proof shutter, and it reports to the Host Computer and an operator immediately. (Event, Alarm, Messages, etc.)

4.2.5 Logging Function

- Transfer Log Function

SRCC records log data about transfer executed by SRC. Transfer Log records results of each vehicle and station, and it also records completions of transfer commands (completions of loading and unloading).

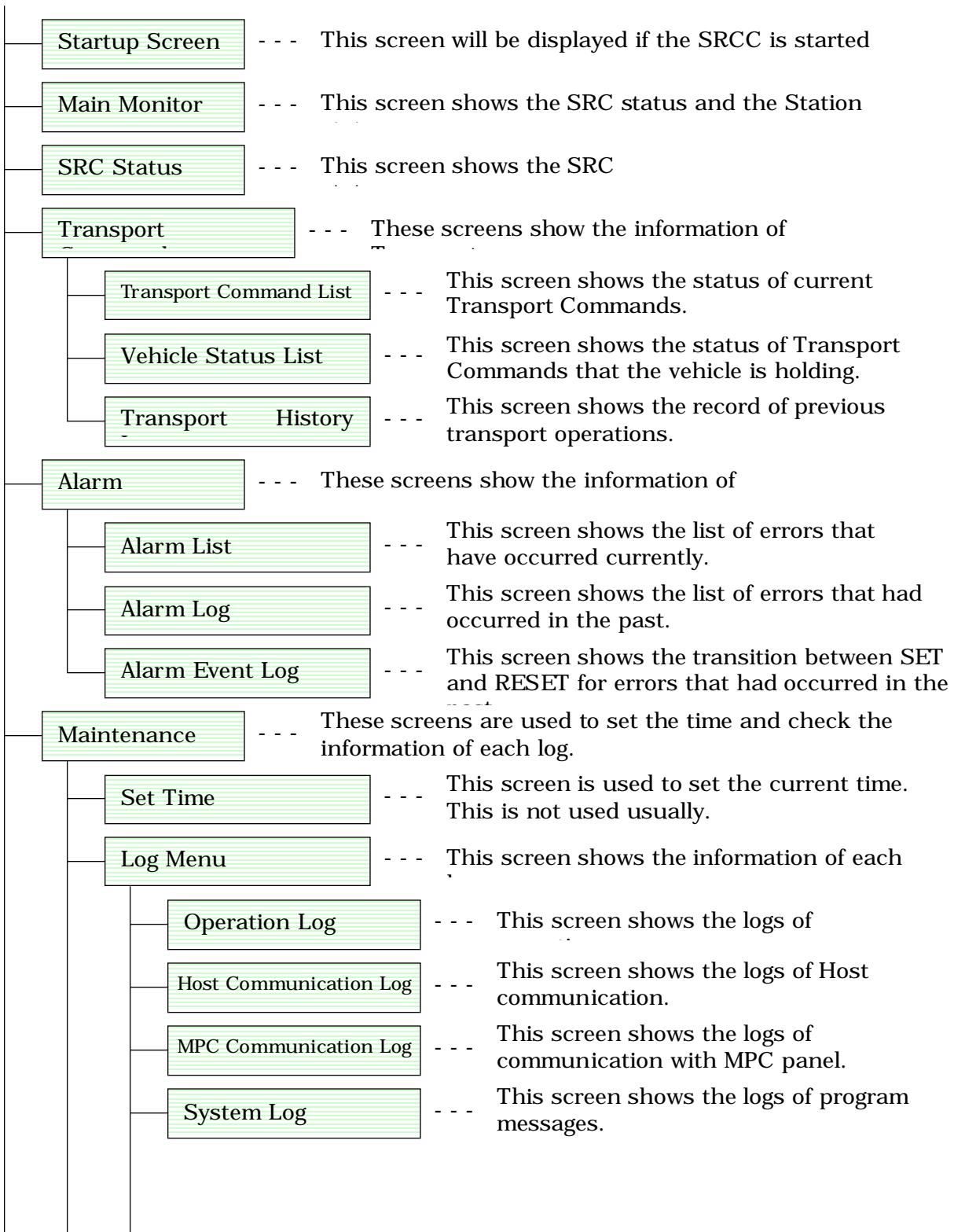
- Error Log Function

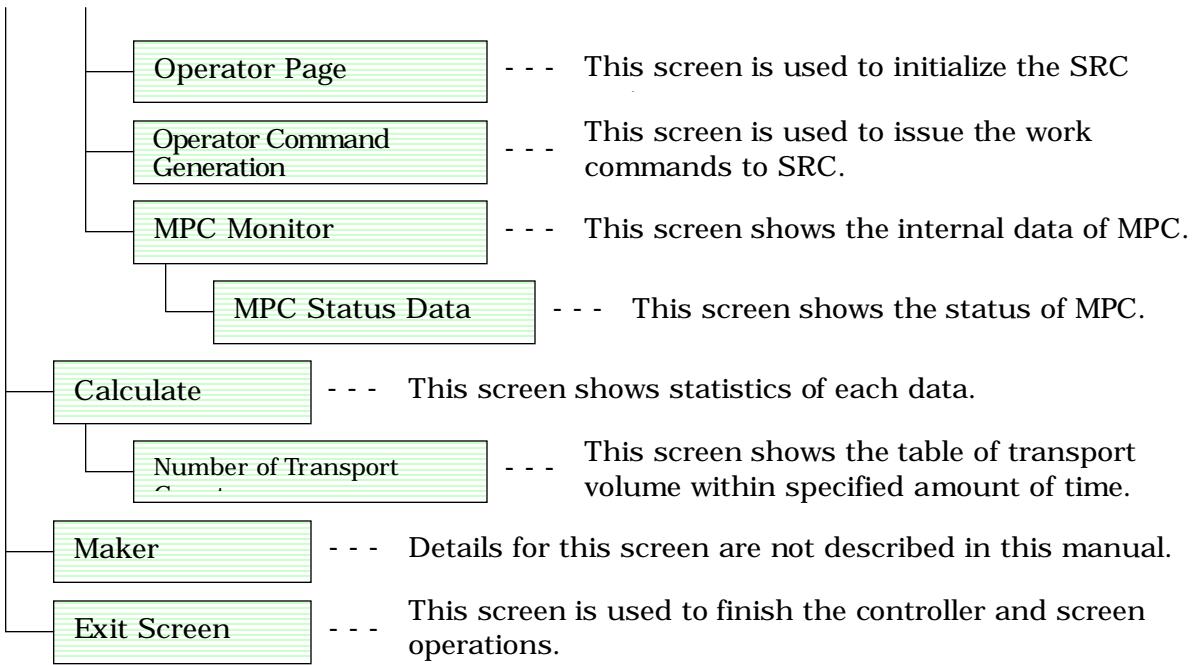
SRCC records log data about all the detected error. An error log records occurrence and recovery logs, and it consists of time, classification, occurrence point and error code, etc.

- Communication Log

SRCC records a log in communication between the Host Computer and HSMS, OPC and MPC, and MPC and SRC. However, a recording level of the communication log can be set because the communication log generates a lot of load.

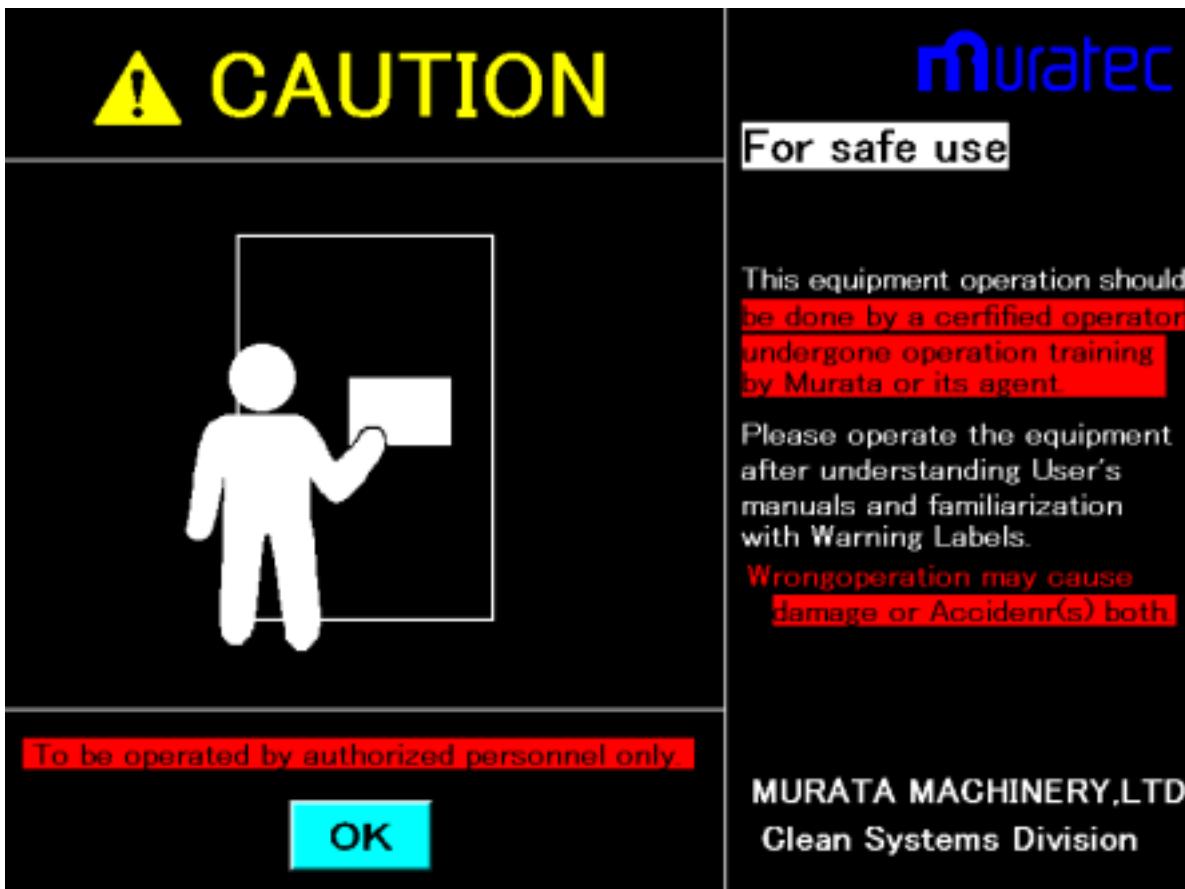
4.3 Screens





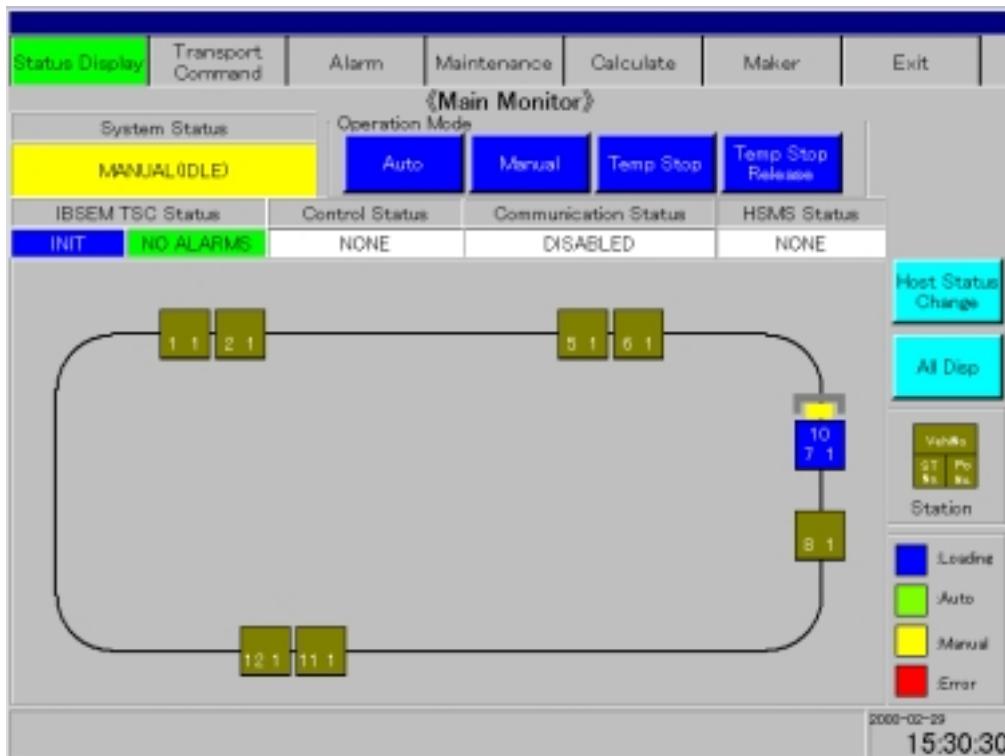
4.4 Startup Screen

The below screen will be displayed every time SRCC is started up. Go to Control Screen by pressing the “OK” button at the left side of the bottom. When starting operation, make sure to follow the instructions explained in this screen.



4.5 Main Monitor Screen

Main Monitor Screen is configured to be able to grasp the status of SRC and Station.



4.6 SRC Status Screen

Detailed information in the state of SRC is displayed.

The screenshot shows the 'SRC Status' interface. At the top, there is a menu bar with tabs: Status Display, Transport Command, Alarm, Maintenance, Calculate, Maker, and Exit. Below the menu is a title '《SRC Status》'. The main area is a table with columns: Nr, Vehicle No, Lane Line No, Coordinate, Target ST No, Transport Command No, Reserve Command No, System Operation Code, Vehicle Operation Code, SRC Test Mode, and Load Status. The table contains 10 rows of data. At the bottom, there is a date and time display: 2000-02-29 14:57:00.

Nr	Vehicle No	Lane Line No	Coordinate	Target ST No	Transport Command No	Reserve Command No	System Operation Code	Vehicle Operation Code	SRC Test Mode	Load Status
1	1	1	#T12	7	0	4	0xFF	0x69	9	10
2	2	1	#T12	7	0	4	0xFF	0x69	9	10
3	3	1	#T12	7	0	4	0xFF	0x69	9	10
4	4	1	#T12	7	0	4	0xFF	0x69	9	10
5	5	1	#T12	7	0	4	0xFF	0x69	9	10
6	6	1	#T12	7	0	4	0xFF	0x69	9	10
7	7	1	#T12	7	0	4	0xFF	0x69	9	10
8	8	1	#T12	7	0	4	0xFF	0x69	9	10
9	9	1	#T12	7	0	4	0xFF	0x69	9	10
10	10	1	#T12	7	0	4	0xFF	0x69	9	10

4.7 Transfer Command List Screen

This screen displays the list of transport command status that SRCC is currently holding.

Transport Command List								
No	CommandID	Priority	CarrierID	Source Port	Destination Port	Layout Vehicle	Load No.	Status
1	MANUAL123	2	Car1	ST011	ST012	1	1	TO VNEST
2	MANUAL123	2	Car2	ST011	ST012	1	1	SEND COMMAND
3	MANUAL123	2	456	ST011	ST012	1	1	STRANDED
4	MANUAL123	2	456	ST011	ST012	1	1	STRANDED
5	MANUAL123	2	Car1	ST011	ST012	1	1	TO VNEST
6	MANUAL123	2	Car2	ST011	ST012	1	1	SEND COMMAND
7	MANUAL123	2	456	ST011	ST012	1	1	STRANDED
8	MANUAL123	2	456	ST011	ST012	1	1	STRANDED
9	MANUAL123	2	Car1	ST011	ST011	1	1	TO VNEST
10	MANUAL123	2	Car2	ST011	ST011	1	1	SEND COMMAND
11	MANUAL123	2	234	ST011	ST011	1	1	STRANDED
12	MANUAL123	2	234	ST011	ST011	1	1	STRANDED
13	MANUAL123	2	Car1	ST011	ST012	1	1	TO VNEST
14	MANUAL123	2	Car2	ST011	ST012	1	1	SEND COMMAND
15	MANUAL123	2	456	ST011	ST012	1	1	STRANDED
16	MANUAL123	2	456	ST011	ST012	1	1	STRANDED
17	MANUAL123	2	Car1	ST011	ST011	1	1	TO VNEST
18	MANUAL123	2	Car2	ST011	ST011	1	1	SEND COMMAND
19	MANUAL123	2	456	ST011	ST011	1	1	STRANDED
20	MANUAL123	2	456	ST011	ST011	1	1	STRANDED

Buttons: Cancel, Abort, Command Generation, Detail

Timestamp: 2000-02-29 14:57:54

4.8 Vehicle Status List Screen

This screen displays the list of transport command status that a vehicle is

Vehicle Status List									
No	Vehicle No	Lane Line No	Coordinate	Operation Code	LoadNo	CarrierID	Source Port	Destination Port	Transport Status
1	1	1	9712	0xFF	1	-----	-----	-----	-----
2	2	1	9712	0xFF	1	-----	-----	-----	-----
3	3	1	9712	0xFF	1	-----	-----	-----	-----
4	4	1	9712	0xFF	1	-----	-----	-----	-----
5	5	1	9712	0xFF	1	-----	-----	-----	-----
6	6	1	9712	0xFF	1	-----	-----	-----	-----
7	7	1	9712	0xFF	1	-----	-----	-----	-----
8	8	1	9712	0xFF	1	-----	-----	-----	-----
9	9	1	9712	0xFF	1	-----	-----	-----	-----
10	10	1	9712	0xFF	1	-----	-----	-----	-----

Buttons: Force Completion, Abort, Command Preparation, Detail

Timestamp: 2000-02-29 14:58:51

holding.

4.9 Transport History Log Screen

This screen displays the record of previous transport operations.

Transport History Log						
No.	CommandID	CarrierID	Source Port	Destination Port	Command Received Time	Command Completed Time
64	123	456	ST011	ST011	2000-02-14 13:04:28.662	2000-02-14 13:04:28.662
65	123	345	ST011	ST011	2000-02-14 19:20:13.292	2000-02-14 19:20:13.292
66	123	456	ST011	ST011	2000-02-18 10:52:55.582	2000-02-18 10:52:55.582
67	123	456	ST011	ST011	2000-02-18 11:29:20.353	2000-02-18 11:29:20.353
68	123	456	ST011	ST011	2000-02-21 11:04:36.510	2000-02-21 11:04:36.510
69	123	456	ST011	ST011	2000-02-21 19:32:17.215	2000-02-21 19:32:17.215
70	123	456	ST011	ST011	2000-02-21 21:17:24.365	2000-02-21 21:17:24.365
71	123	456	ST011	ST011	2000-02-22 11:23:54.330	2000-02-22 11:23:54.330
72	123	456	ST011	ST012	2000-02-22 13:22:00.059	2000-02-22 13:22:00.059
73	123	456	ST011	ST011	2000-02-22 18:29:28.203	2000-02-22 18:29:28.203
74	123	456	ST011	ST011	2000-02-22 19:42:00.890	2000-02-22 19:42:00.890
75	123	456	ST011	ST011	2000-02-22 19:55:15.712	2000-02-22 19:55:15.712
76	123	426	ST011	ST011	2000-02-23 14:11:30.137	2000-02-23 14:11:30.137
77	123	345	ST011	ST011	2000-02-23 17:02:58.886	2000-02-23 17:02:58.886
78	123	234	ST011	ST011	2000-02-23 19:20:14.597	2000-02-23 19:20:14.597
79	123	456	ST011	ST011	2000-02-23 19:47:09.219	2000-02-23 19:47:09.219
80	123	456	ST011	ST011	2000-02-24 13:21:55.096	2000-02-24 13:21:55.096
81	123	456	ST011	ST011	2000-02-24 14:15:47.464	2000-02-24 14:15:47.464
82	123	456	ST011	ST012	2000-02-24 19:32:52.019	2000-02-24 19:32:52.019
83	123	456	ST011	ST011	2000-02-29 14:55:53.052	2000-02-29 14:55:53.052

2000-02-29 14:59:48

4.10 Alarm

Select the Alarm Tab, and the below menu will be displayed. This menu is for checking the information of alarm.

4.10.1 Alarm List Screen

This screen displays the list of current errors.

(a) Re Display

Click this button to update and re-display the data displayed on this screen.

(b) Detail

Click this button to open the screen that shows the detail of a selected error.

4.11 Alarm Log

This screen displays the list of previous errors.

Main Monitor	Transport Command	Alarm	Maintenance	Statistics	Marker	Exit		
<Alarm Log>								
No.	Alarm No.	Machine No.	Division	Error Contents	Occurrence Date And Time	Pass Time		
1	02 03	1		Circuit Error(ID-tag communication Error)	2001-03-05 18:55:29.647	00:01:29		
2	02 02	1		Circuit Error(Hand-unit communication Error)	2001-03-06 17:02:29.816	00:00:41		
All Display		Re Display	Search	Detail	2001-03-06 17:03:23			

4.12 Alarm Event Log

This screen displays SET and RESET status of previous errors.

Main Monitor	Transport Command	Alarm	Maintenance	Statistics	Marker	Exit		
<AlarmEvent Log>								
No.	Alarm No.	Machine No.	Division	Error Contents	Occurrence Date And Time			
1	08 08		SET	Host communication Socket error	2001-03-05 18:41:12.277			
2	08 08		SET	Host communication Socket error	2001-03-05 18:48:28.872			
3	02 03	1	SET	Circuit Error(ID-tag communication Error)	2001-03-05 18:55:29.647			
4	02 03	1	CLEAR	Circuit Error(ID-tag communication Error)	2001-03-05 18:56:58.785			
5	08 08		SET	Host communication Socket error	2001-03-05 20:47:35.158			
6	08 08		SET	Host communication Socket error	2001-03-06 11:01:30.733			
7	08 08		SET	Host communication Socket error	2001-03-06 18:48:10.487			
8	02 02	1	SET	Circuit Error(Hand-unit communication Error)	2001-03-06 17:02:29.816			
9	02 02	1	CLEAR	Circuit Error(Hand-unit communication Error)	2001-03-06 17:02:11.626			
All Display		Re Display	Search	Detail	2001-03-06 17:03:49			

4.13 Maintenance

Select the Maintenance Tab, and the below menu will be displayed.

4.13.1 Time Setting

This screen is used to set time. While this screen is displayed, current time of the system is displayed.



4.14 Operation Log

This screen displays the list of previous screen operations.

Main Monitor	Transport Command	Alarm	Maintenance	Statistics	Marker	Exit		
<Operation Log>								
No.	Operation Date And Time	Form	Control	Event	Contents			
276	2001-03-06 16:56:14,186	Form_STransData	Form_STrans	Edit_CommandClick				
277	2001-03-06 16:56:23,235	Form_STransData	Form_STransData	Edit_CarrierIDClick				
278	2001-03-06 16:56:33,075	Form_STransData	Form_	CB_OKClick				
279	2001-03-06 16:56:38,686	Form_Main	Form_Main	FormCreate				
280	2001-03-06 16:57:17,151	Form_STransList	Form_STransList	FormCreate				
281	2001-03-06 16:57:40,771	Form_Main	Form_Main	FormCreate				
282	2001-03-06 16:58:15,981	Form_Main	Form_Main	CB_StatDispClick				
283	2001-03-06 16:58:41,017	Form_Main	Form_Main	CB_HostChangeClick				
284	2001-03-06 16:58:47,947	Form_Main	Form_Main	CB_HostChangeClick				
285	2001-03-06 16:59:29,337	Form_Main	Form_Main	PaintBoxMouseDown				
286	2001-03-06 16:59:29,401	Form_MainStInfo	Form_MainStInfo	FormCreate				
287	2001-03-06 17:00:01,313	Form_STransVehi	Form_STransVehiList	FormCreate				
288	2001-03-06 17:00:25,866	Form_CLogTrans	Form_CLogTrans	FormCreate				
289	2001-03-06 17:01:51,982	Form_CLogTransE	Form_CLogTransEvent	FormCreate				
290	2001-03-06 17:02:13,743	Form_CAlarm	Form_CAlarm	FormCreate				
291	2001-03-06 17:03:11,596	Form_CAlarm	Form_CAI	CB_ResetClick				
292	2001-03-06 17:03:16,555	Form_CAlarmLog	Form_CAlarmLog	FormCreate				
293	2001-03-06 17:03:42,070	Form_CAlarmEvent	Form_CAlarmEventLog	FormCreate				
294	2001-03-06 17:04:36,585	Form_CLogOpe	Form_CLogOpe	FormCreate				
295	2001-03-06 17:04:36,789	Form_CLogOpe	Form_CLogOpe	FormShow				
All Display		Re Display	Search	Detail				
2001-03-06 16:57:00 Vehicle No.3 Loaded [command ID: MANUALABCD0]				2001-03-06 17:04:39				
2001-03-06 16:57:11 Vehicle No.3 Unloading [command ID: MANUALABCD1]								
2001-03-06 16:57:35 Vehicle No.3 Unloaded [command ID: MANUALABCD2]								

4.15 HOST Communication Log

This screen displays the list of messages exchanged with HOST in the past.

Main Monitor	Transport Command	Alarm	Maintenance	Statistics	Marker	Exit		
<Host Communication Log>								
No.	Send Or Receive Date And Time	Division	Stream	Function	P-Type/S-Type	Message		
1508	2001-05-31 17:18:08.309	SEND	1	13	0-0	Establish Communi		
1509	2001-05-31 17:18:08.319	RECV	1	14	0-0	Establish Communi		
1510	2001-05-31 17:18:08.429	SEND	1	1	0-0	Are You There Requ		
1511	2001-05-31 17:18:08.429	RECV	1	2	0-0	On Line Data(ID)		
1512	2001-05-31 17:18:08.429	SEND	6	11	0-0	Event Report Send(ETSCOnlineRemote		
1513	2001-05-31 17:18:08.439	SEND	6	11	0-0	Event Report Send(ETSCAutoInitiated		
1514	2001-05-31 17:18:08.439	RECV	6	12	0-0	Event Report Ackno		
1515	2001-05-31 17:18:08.439	SEND	6	11	0-0	Event Report Send(ETSCPaused		
1516	2001-05-31 17:18:08.449	RECV	6	12	0-0	Event Report Ackno		
1517	2001-05-31 17:18:08.459	RECV	6	12	0-0	Event Report Ackno		
1518	2001-05-31 17:18:08.469	SEND	6	11	0-0	Event Report Send(ETSAvailChanged		
1519	2001-05-31 17:18:08.479	RECV	6	12	0-0	Event Report Ackno		
1520	2001-05-31 17:18:25.794	SEND	6	11	0-0	Event Report Send(ETSCAutoCompleted		
1521	2001-05-31 17:18:25.804	RECV	6	12	0-0	Event Report Ackno		
1522	2001-05-31 17:19:11.820	SEND	0	0	0-5	HSMS : Linktest.req		
1523	2001-05-31 17:19:11.830	RECV	0	0	0-6	HSMS : Linktest.rsp		
1524	2001-05-31 17:19:21.965	SEND	6	11	0-0	Event Report Send(ETTransferCancelInitiated		
1525	2001-05-31 17:19:21.965	RECV	6	12	0-0	Event Report Ackno		
1526	2001-05-31 17:19:22.365	SEND	6	11	0-0	Event Report Send(ETTransferCancelComplete		
1527	2001-05-31 17:19:22.365	RECV	6	12	0-0	Event Report Ackno		
All Display		Re Display	Search	Detail				
2001-05-31 20:28:40 Cancel vehicle registration.				2001-05-31 20:28:40				
2001-05-31 20:28:44 Canceling vehicle registration.								
2001-05-31 20:28:44 Canceled vehicle registration,(registered 2 vehicles)								

4.16 MPC Communication Log

This screen displays the list of messages exchanged with MPC (Murata Panel Computer) in the past.

Main Monitor	Transport Command	Alarm	Maintenance	Statistics	Marker	Exit		
<MPC Communication Log >						Channel No.1		
No.	Send Or Receive Date And Time	Division	SAP	Content				
167	2001-03-06 16:52:10.105SEND	18	8F FF 12 00 00 18 18 14 BF 00 01 00 02 00					
168	2001-03-06 16:52:10.345RECEIVE	18	FF 8F 12 00 00 18 18 14 13 00 01 01 02 00					
169	2001-03-06 16:52:10.406RECEIVE	18	FF 8F 16 00 00 18 18 00 14 00 81 00 01 00					
170	2001-03-06 16:52:10.556SEND	18	8F FF 16 00 EE 18 18 00 C2 00 81 01 01 00					
171	2001-03-06 16:52:10.748RECEIVE	18	FF 8F 16 00 00 18 18 00 15 00 81 00 02 00					
172	2001-03-06 16:52:11.097SEND	18	8F FF 16 00 EE 18 18 00 C4 00 81 01 02 00					
173	2001-03-06 16:56:34.866SEND	18	8F FF 1A 00 00 18 18 1E 0F 00 21 00 01 00					
174	2001-03-06 16:58:35.048RECEIVE	18	FF 8F 1A 00 00 18 18 1E 16 00 21 01 01 00					
175	2001-03-06 16:58:40.915RECEIVE	18	FF 8F 19 00 00 18 18 00 18 00 81 00 01 00					
176	2001-03-06 16:58:40.955SEND	18	8F FF 19 00 EE 18 18 00 F9 00 81 01 01 00					
177	2001-03-06 16:58:41.175RECEIVE	18	FF 8F 19 00 00 18 18 00 19 00 81 00 01 00					
178	2001-03-06 16:58:41.295SEND	18	8F FF 19 00 EE 18 18 00 FB 00 81 01 01 00					
179	2001-03-06 16:57:00.403RECEIVE	18	FF 8F 19 00 00 18 18 00 1A 00 81 00 01 00					
180	2001-03-06 16:57:00.443SEND	18	8F FF 19 00 EE 18 18 00 87 00 81 01 01 00					
181	2001-03-06 16:57:11.569RECEIVE	18	FF 8F 19 00 00 18 18 00 18 00 81 00 01 00					
182	2001-03-06 16:57:11.619SEND	18	8F FF 19 00 EE 18 18 00 D8 00 81 01 01 00					
183	2001-03-06 16:57:35.453RECEIVE	18	FF 8F 19 00 00 18 18 00 1C 00 81 00 01 00					
184	2001-03-06 16:57:35.543SEND	18	8F FF 19 00 EE 18 18 00 78 00 81 01 01 00					
185	2001-03-06 17:02:28.945RECEIVE	18	FF 8F 44 00 00 18 18 00 10 00 91 00 01 00					
186	2001-03-06 17:02:28.926SEND	18	8F FF 44 00 EE 18 18 00 77 00 91 01 01 00					
All Display		Re Display	Search	Detail				
2001-03-06 16:57:00 Vehicle No.3 Loaded (forward ID:MANUAL:ABCD)				2001-03-06				
2001-03-06 16:57:11 Vehicle No.3 Unloading (backward ID:MANUAL:ABCD)				17:05:45				
2001-03-06 16:57:36 Vehicle No.3 Unloaded (backward ID:MANUAL:ABCD)								

4.17 System Log

This screen displays messages which show the system operation status.

Main Monitor	Transport Command	Alarm	Maintenance	Statistics	Marker	Exit
<System Log>						
No.	Occurrence Date And Time	File Name	Contents			
34	2001-05-31 02:31:14,865		System End			
35	2001-05-31 14:57:57,717		System Start			
36	2001-05-31 15:04:05,265		System End			
37	2001-05-31 15:05:23,858		System Start			
38	2001-05-31 15:09:10,434		System End			
39	2001-05-31 15:09:15,211		System Start			
40	2001-05-31 15:10:01,868		System End			
41	2001-05-31 15:10:16,949		System Start			
42	2001-05-31 15:10:43,267		System End			
43	2001-05-31 15:10:58,469		System Start			
44	2001-05-31 15:19:30,345		System End			
45	2001-05-31 17:06:23,097		System Start			
46	2001-05-31 17:07:15,743		System End			
47	2001-05-31 17:15:50,531		System Start			
48	2001-05-31 17:16:28,385		System End			
49	2001-05-31 17:18:07,197		System Start			
50	2001-05-31 18:06:05,136		System End			
51	2001-05-31 20:22:15,487		System Start			
52	2001-05-31 20:22:52,981		System End			
53	2001-05-31 20:25:35,135		System Start			

Buttons: All Display, Re Display, Search, Detail

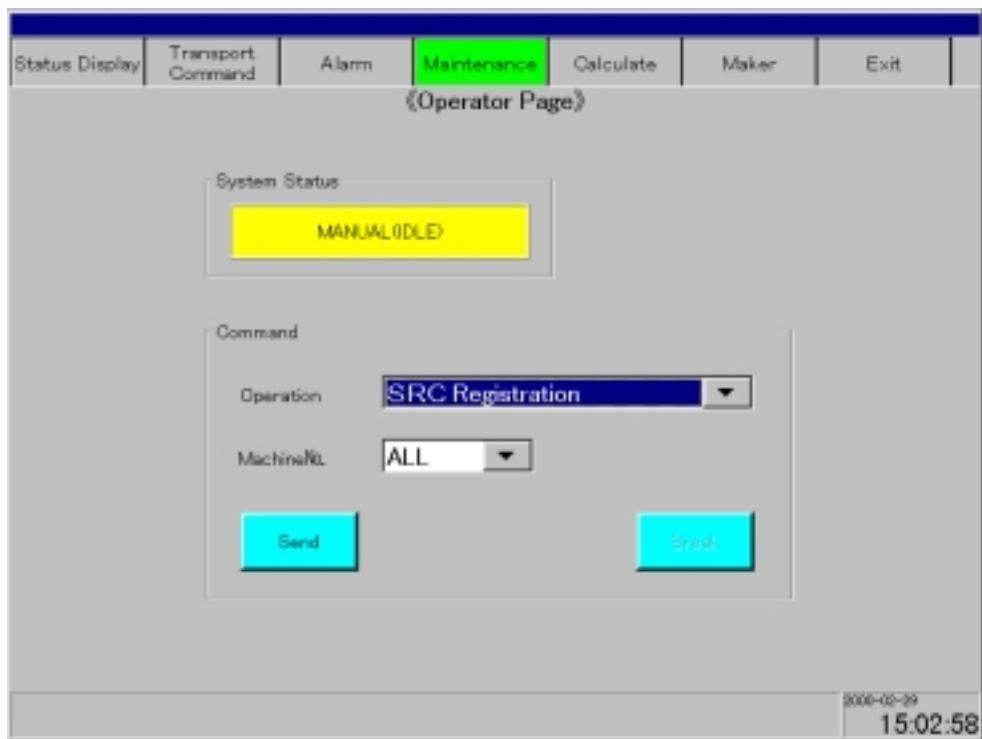
Log entries:

- 2001-05-31 20:25:43 Cancel vehicle registration.
- 2001-05-31 20:25:44 Cancelling vehicle registration.
- 2001-05-31 20:25:44 Canceled vehicle registration.(registered 2 vehicles)

Date: 2001-05-31 Time: 20:27:02

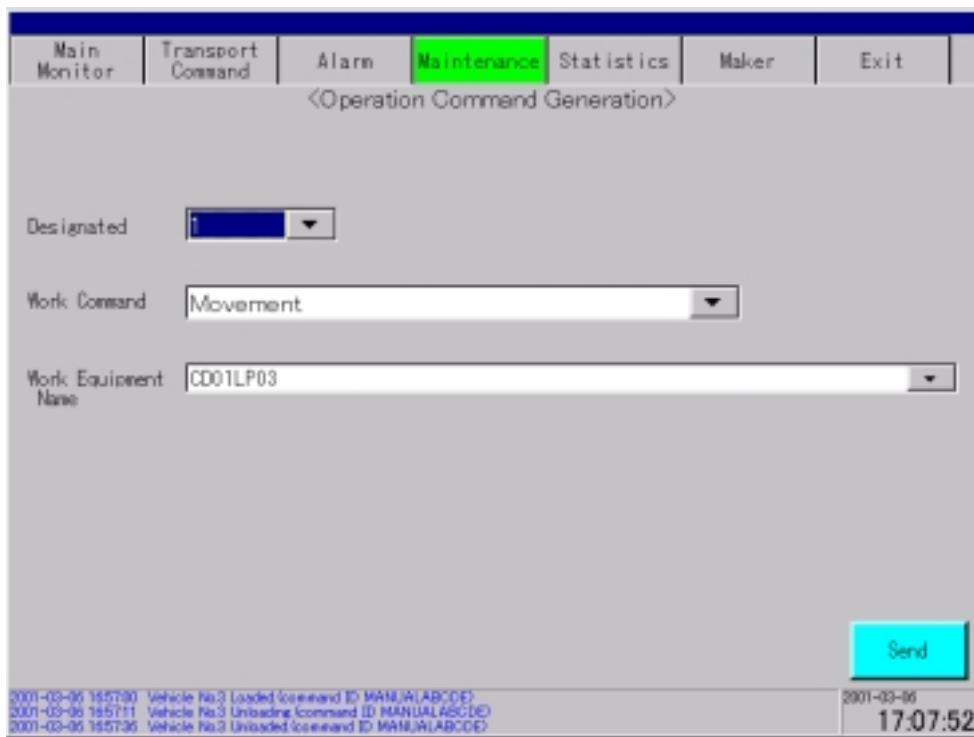
4.18 Operator Screen

This screen is used to issue operation commands for normal initialization of SRC system.



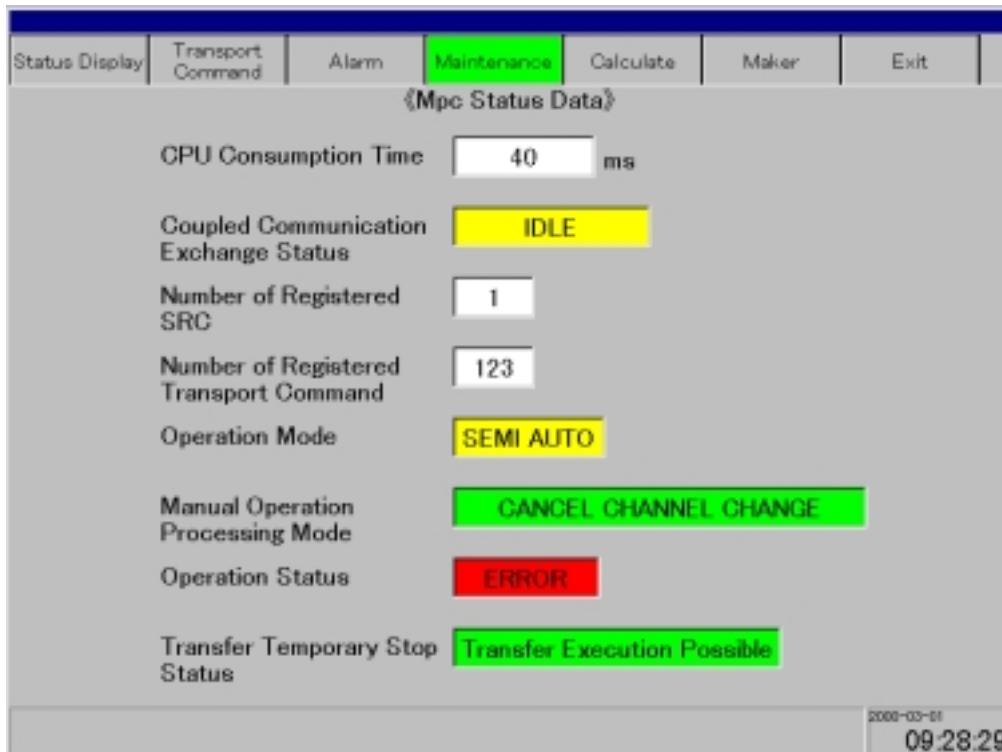
4.19 Work Command Generation Screen

This screen is used to issue normal operation commands of SRC system.



4.20 MPC Status Data Screen

This screen is used to check the status of MPC

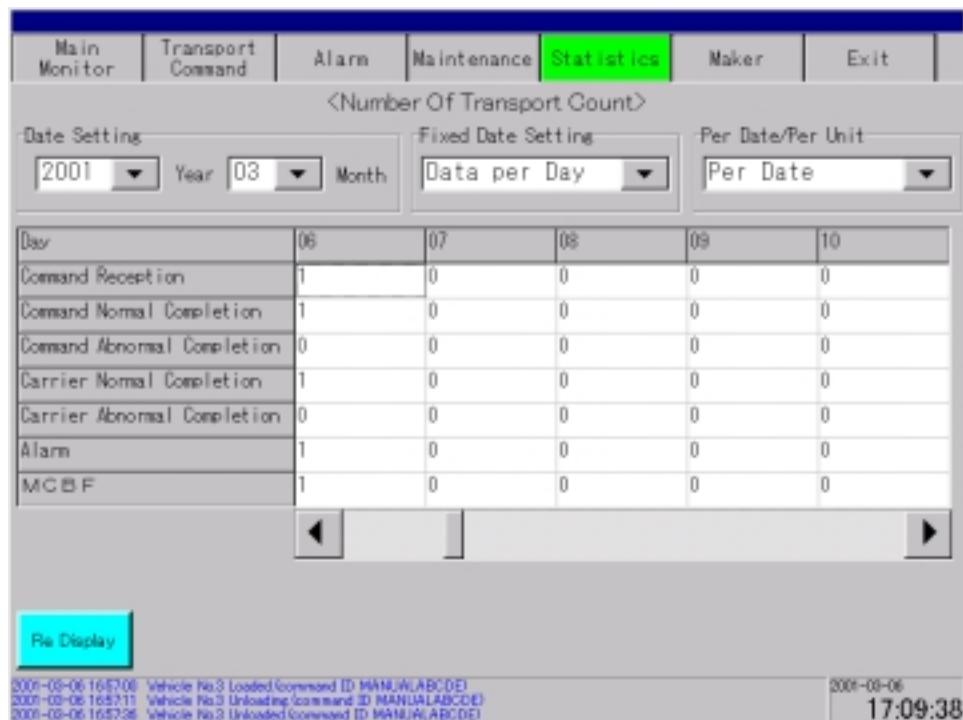


4.21 Statistics Screen

Select the Statistics Tab, and the below menu will be displayed. This menu is used to check statistical information of transfer commands that had been executed in the past.

4.21.1 Transport Count Table Screen (Per day – Per fixed date)

This screen displays the table of the transport volume per day in a month set in “Date Setting”.



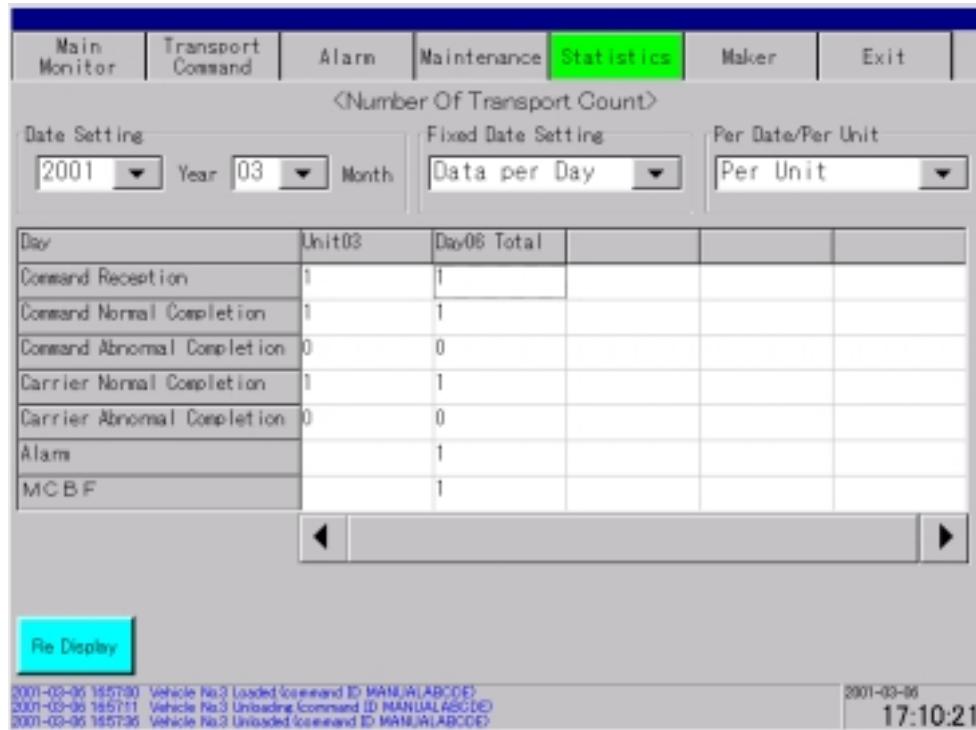
The screenshot shows a software interface for 'Statistics' with a table titled 'Number Of Transport Count'. The table has columns for Day (06, 07, 08, 09, 10) and various command types. The 'Re Display' button is highlighted in blue.

Day	06	07	08	09	10
Command Reception	1	0	0	0	0
Command Normal Completion	1	0	0	0	0
Command Abnormal Completion	0	0	0	0	0
Carrier Normal Completion	1	0	0	0	0
Carrier Abnormal Completion	0	0	0	0	0
Alarm	1	0	0	0	0
MCBF	1	0	0	0	0

Below the table, a message box displays log entries for vehicle No. 3: 'Vehicle No.3 Loaded (command ID: MANUAL(ABCDE))', 'Vehicle No.3 Unloading (command ID: MANUAL(ABCDE))', and 'Vehicle No.3 Unloaded (command ID: MANUAL(ABCDE))'. The timestamp is 2001-03-06 17:09:38.

4.21.2 Transport Count Table Screen (Per day – Per unit)

This screen displays the table of the transport volume per unit No. in a certain day.



Number Of Transport Count

Date Setting: 2001 Year 03 Month

Fixed Date Setting: Data per Day

Per Date/Per Unit: Per Unit

Day	Unit03	Day06 Total		
Command Reception	1	1		
Command Normal Completion	1	1		
Command Abnormal Completion	0	0		
Carrier Normal Completion	1	1		
Carrier Abnormal Completion	0	0		
Alarm		1		
MCBF		1		

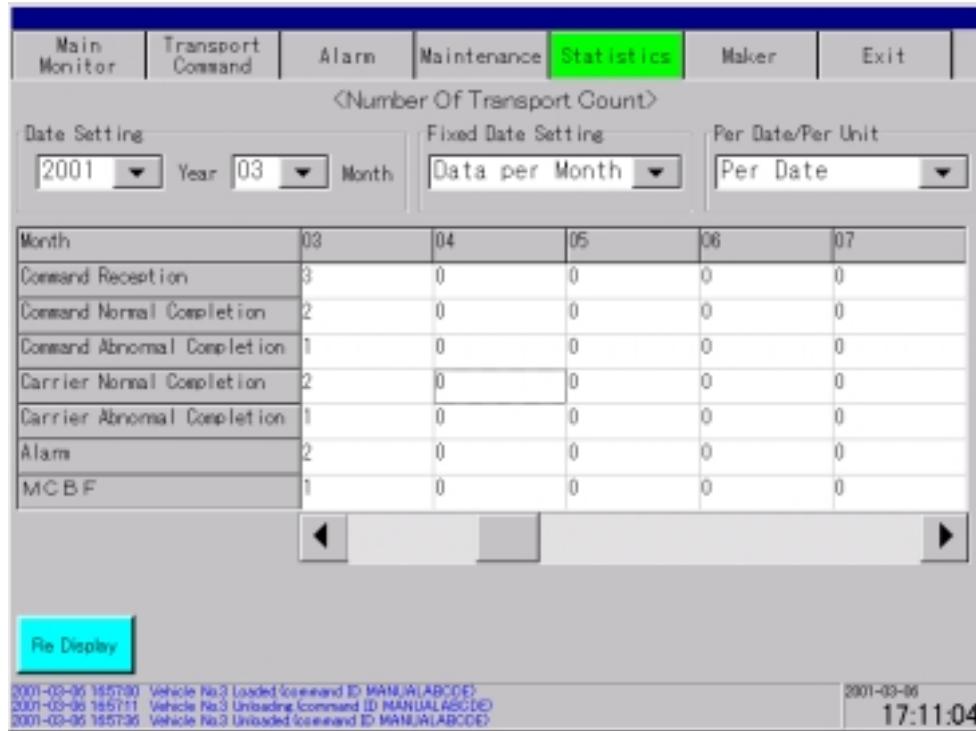
Re Display

2001-03-06 1857100 Vehicle No.3 Loaded (Forward ID:MANUALABCD)
2001-03-06 1857111 Vehicle No.3 Unloading (Command ID:MANUALABCD)
2001-03-06 1857126 Vehicle No.3 Unloaded (Forward ID:MANUALABCD)

2001-03-06 17:10:21

4.21.3 Transport Count Table Screen (Per month – Per fixed date)

This screen displays the table of the transport volume per month in data specified in “Date Setting”.



Number Of Transport Count

Date Setting: 2001 Year 03 Month

Fixed Date Setting: Data per Month

Per Date/Per Unit: Per Date

Month	03	04	05	06	07
Command Reception	3	0	0	0	0
Command Normal Completion	2	0	0	0	0
Command Abnormal Completion	1	0	0	0	0
Carrier Normal Completion	2	0	0	0	0
Carrier Abnormal Completion	1	0	0	0	0
Alarm	2	0	0	0	0
MCBF	1	0	0	0	0

Re Display

2001-03-06 1857100 Vehicle No.3 Loaded (Forward ID:MANUALABCD)
2001-03-06 1857111 Vehicle No.3 Unloading (Command ID:MANUALABCD)
2001-03-06 1857126 Vehicle No.3 Unloaded (Forward ID:MANUALABCD)

2001-03-06 17:11:04

4.21.4 Transport Count Table Screen (Per month – Per specified unit)

This screen displays the table of the transport volume per unit No. in a month specified in “Date Setting”.

4.22 Exit

Select the Exit Tab, and the below menu will be displayed. Exit operation must be executed from this screen.



4.23 SRCC operation procedure

Operation start

(1) Turn the main breaker on.

=> The Startup screen appears on OPC.

Confirm the message and click the “OK” button.

=> The Main Monitor screen appears.

=> The operation panel of MPC is started up and manual operations become possible.

(2) Start up the local equipment.

(For more information, see the operation procedures for the local equipment.)

- High-frequency power supply

Turn the main breaker on.

=> The power supply indicator is lit.

Press the standby switch.

=> The power supply indicator on the MPC operation panel is lit.

- Shunting device

Turn the main breaker on.

Perform a home position recovery operation.

Turn the operation mode to the Automatic mode.

=> The Automatic mode lamp on the MPC operation panel is lit.

- MPC operation panel

Press the high-frequency power supply start switch.

=> The high-frequency power supply indicator is lit.

=> The power is supplied to the vehicle and the startup status is displayed.

(3) Start up the vehicle.

With the remote controller for SRC, perform a home position recovery operation. After completing the home position recovery operation, select the Automatic mode and make the vehicle wait for automatic operations.

(4) Perform the procedure to register SRC.

Select the vehicle registration operation on the operation screen of OPC.

=> The vehicles whose registrations are completed are scrolled and displayed.

Select the interruption after completing the registration of all the vehicles in the system.

Return to the Main Monitor screen and select the Automatic operation mode.

=> The system status switches from "Manual" to "Automatic" mode.

(5) Connect SRCC with the Host in the on-line status.

(SRCC is automatically connected to the Host when it starts up.)

(6) The Host sends transport commands to SRCC.

=> SRC starts transport operations.

Operation stop

(1) Stop SRC temporarily.

Select the temporary stop mode on the Main Monitor screen.

=> SRC makes a cycle stop after completing all transport commands that it holds.

(2) Stop the local equipment.

(For more information, see the operation procedures for the local equipment.)

- MPC operation panel

Press the high-frequency power OFF switch.

=> The high-frequency power supply indicator goes out.

=> The power of the vehicle is shut down and the indicator goes out.

- High-frequency power supply

Turn the main breaker off.

=> The power supply indicator goes out.

- Shunting device

Turn the main breaker off.

(3) Turn the main breaker off.

5 Appendix

1. External appearance of SRCC

OUTLINE DRAWING	CY0-BC004-10M
CIRCUIT DRAWING	CY0-BC004-10E
PARTS LAYOUT DRAWING	CY0-BC004-10D