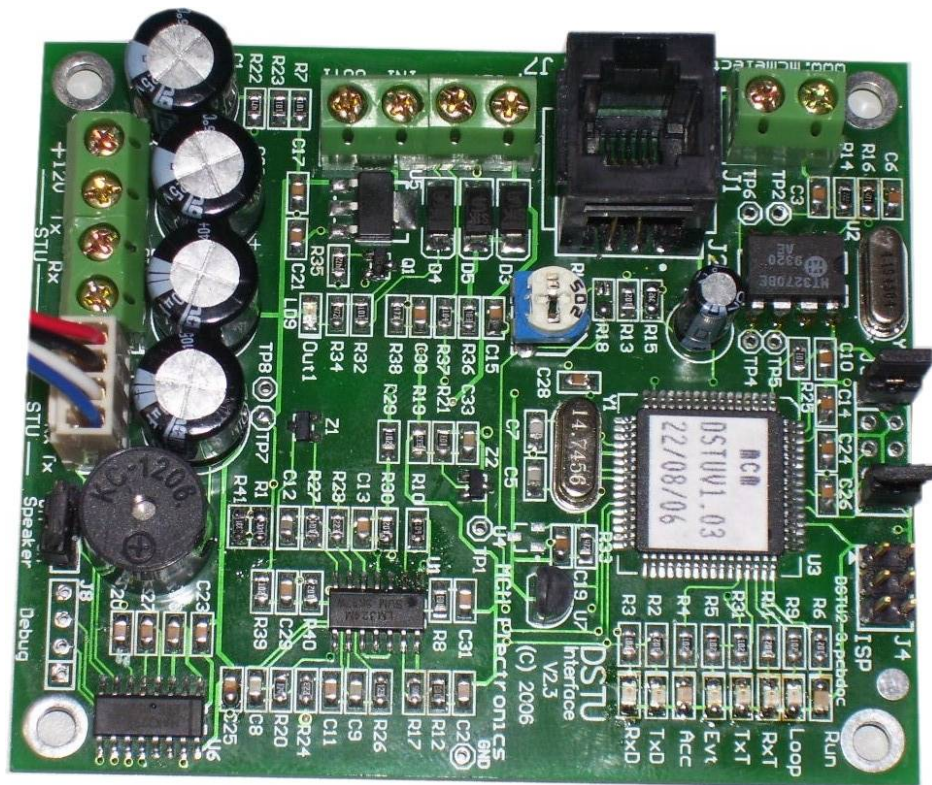




MCM electronics

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DSTU

Dialler to STU interface

Revised 27th September 2006

Version 1.2



N3295



General Description

The DSTU is an interface between an alarm panel reporting Contact ID and an MCM Securitel RS232STU. This interface enables the alarm panel to communicate via its PSTN connection. The DSTU emulates the PSTN telephone network and provides a DC line voltage together with optional simulated dial tone (link selectable).

The DSTU acts as a Central Station Receiver generating Handshake and Acknowledge tones. The DSTU receives the Contact ID and translates the data as per the table below, then sends this data to the MCM RS232STU. The STU sends the event via the Securitel network using standard ASIAL Serial Data (ASD) format.

System Wiring

The Alarm Panel connects to the DSTU via PSTN (phone line terminal) and also 12volts DC. The DSTU connects to an MCM RS232 STU (4 wire) and the STU in turn is connected to the Securitel Line.

The DSTU requires 12Vdc power supply @25mA....plus the 232STU@60mA

The DSTU has connections for:

- **12Vdc** Input Power
- **PANEL** RJ11 (panel connection)
- + - **Rx Tx**. 4 wire connection to an MCM STU

Control Panel Programming

Setup these functions in the Alarm Panel:

- Account Number.... This will become the STUs Hard ID
- Contact ID Reporting
- DTMF Tone Dialing
- 1 or more Telephone Number digits; eg. 1 2 3 (Any digits)
- Setup all the desired alarm and system reporting codes.

Initial System Setup

The DTU must receive an event (e.g. alarm /open /close) so it can receive the Account Number. The account number of the panel is then used as the Hard ID. This account number is then sent to the STU so that the STU can be brought on line (Upped).

Note....

Make sure only one account number is used (Not Multi Account number)

If using a multi-partition Control Panel, ensure all account numbers are identical.

Normal Operation.

Panel makes a telephone call to report an event. When the DSTU detects the panel going off-hook, the Loop LED on the DSTU operates. If J3 is linked, the DSTU will generate dial tone for up to 4 seconds and listen for the phone number to be dialled. (if a digit is detected Dial tone stops). When the panel finishes dialing, the DSTU generates a Handshake (as a normal Central Station receiver would). The panel transmits its account number and Contact ID event code. If a valid message is received an Acknowledge or Kiss-off signal is sent to the panel. Further events can be received on the same call. The DSTU translates the received account number and Contact ID event and sends this account number to the STU to be used as the Hard ID. The event data is sent to the STU as Serial data. Once this first transmission is received STU can be UPPED. Events are then sent as serial data using the translation table below.

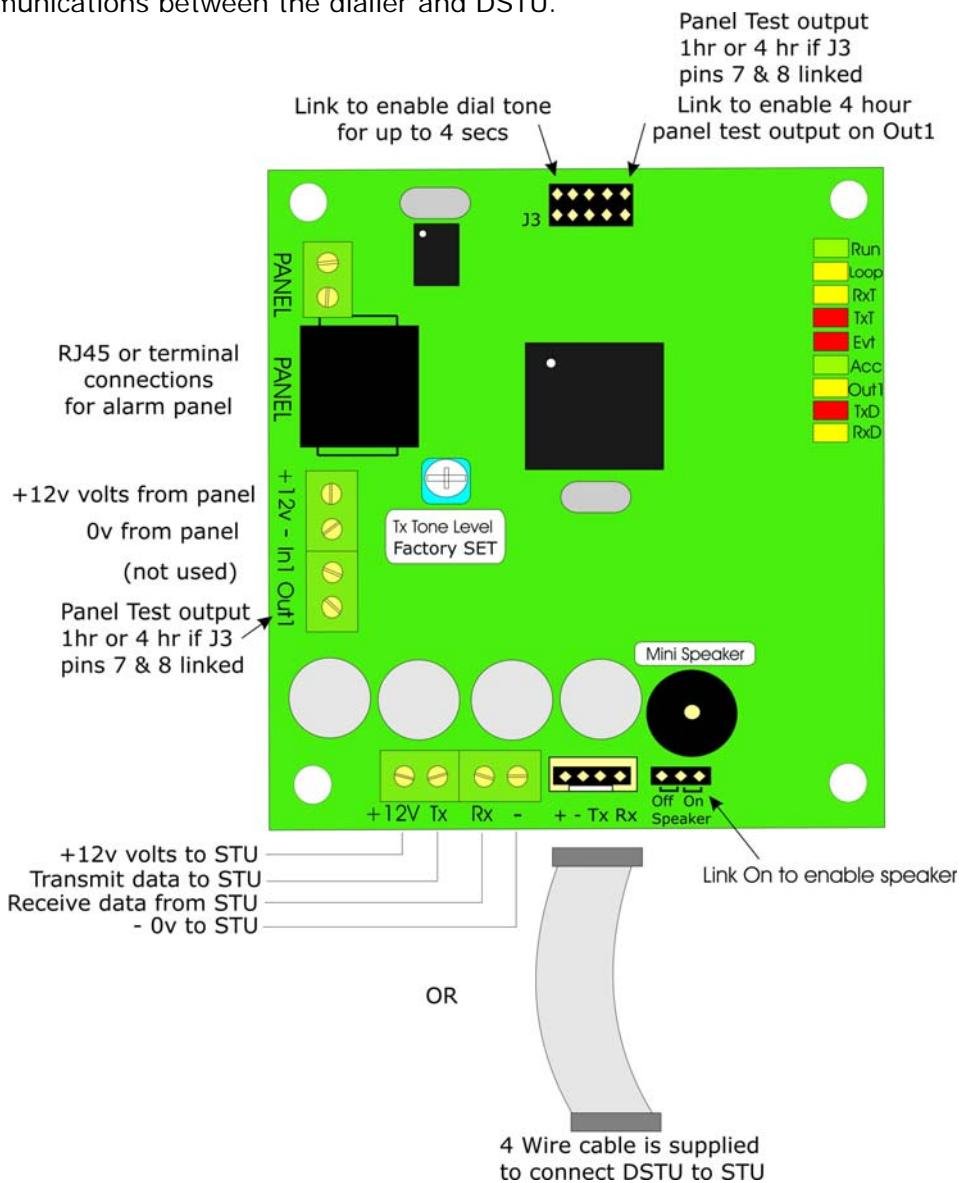
Indicators

The DSTU has multiple LEDs to indicate the progress of the transmission and the status of the DSTU. These LEDs indicate the following

- Run** will flash every second.
- Loop** indicates when the panel has looped the line to the DSTU.
- RxT** Receiving tone from the panel to the DSTU.
- TxT** Transmitting tone from the DSTU to the panel. (Dial tone, Handshake or Acknowledge)
- Evt** An event has been received by the DSTU and is waiting to be sent to STU.
- Acc** An account number received by the DSTU from the panel. On after 1st event received.
- TxD** transmit data to the STU. Flashes every 1-3 seconds in normal operation.
- RxD** receive data from the STU. Flashes every 1-3 seconds in normal operation.
- Out1** Status of Output1. On for 1 second every 1 Hr or 4 Hrs depending on J3 pin 7 and 8.
Out1 can be used to trigger the panel to do a 1 hourly or 4 hourly test.

Onboard Speaker

The onboard speaker can be enabled with a link. This speaker gives audible output of communications between the dialler and DSTU.



Wiring

Power

+ **12V** and – **0v** terminals connect to the panels +**12V** and – source. To make wiring easier, 2 terminals are provided with +**12v** and – **0v** connections. Both terminals are wired in parallel therefore power can be connected to either one. It's recommended to run power from the panel to the J7 terminal block and power out to the STU from J5 terminal block or J6 if the STU has a 4-pin header. This will result in a neater installation.

Input 1

The input does not require an EOL (End of Line) resistor. The input can be triggered via a GND with a response time of around 300ms. It can be programmed to send its own event to the STU.

Out1

The output can be used to trigger the panel if an event hasn't been received for a period of time or wake it up to generate a test signal. The output can sink 100ma MAX.

Tx & Rx

Tx & Rx connections from J5 & J6 connect to the STU. A 4pin header and terminal block are provided for convenience, only one is required to be connected at any one time.

Panel

This is connected to the panel's dialler via the RJ45 socket or terminal block. Only the two centre pins usually red and green are required on the telecom lead from the panel to the DSTU.

Technical Specifications

Nominal Input Voltage:	+12v DC
Maximum Input Voltage:	+15v DC
Maximum Current Draw:	110ma
Minimum Current Draw:	20ma
Input EOL Resistor:	No EOL required
Output type:	Output transistor, switches to GND.
Maximum Output Current:	100ma

Contact ID translation to ASIAL Serial Data (ASD)

ALARM CLASSIFICATION

- ALARM

Contact ID Code

E10? - Medical
 R10? - Medical Restore
 E11? - Fire
 R11? - Fire Restore
 E120 - Panic
 R120 - Panic Restore
 E121 - Duress
 R121 - Duress Restore

...Other 12? Alarms/Restores....

E12? - Alarm
 R12? - Restore
 E137 - Tamper Alarm
 R137 - Tamper Restore

ASD Code or Point Number

06 Alarm point 200
 08 Restore point 200
 06 Alarm point 201
 08 Restore point 201
 06 Alarm point 202
 08 Restore point 202
 06 Alarm point 203
 08 Restore point 203

06 Alarm point 204
 08 Restore point 204
 06 Alarm point 205
 08 Restore point 205

Where ? is digits 0-9

Where **xxx** is the Point or Section# received.

...Other Alarms/Restores....

*** Any 1xx series event code received that is not defined above will generate an ASD event code of 06 for an E (new trouble) or 08 for an R (new trouble restore) in line with the above but with the Point Number. (Point numbers above 220 will be sent as 220)

*** Any 200 Series event code received will generate an ASD event code of 12 for an E (new trouble) or 14 for an R (new trouble restore) in line with the above but with a Point Number of 220.

TROUBLES CLASSIFICATION

- TROUBLE

Contact ID Code

E300 - System Trouble
 R300 - System Trouble Restore
 E301 - AC Power Loss
 R301 - AC Power Restore
 E302 - Low System Battery
 R302 - Low System Battery Restore
 E303 - RAM Checksum Bad
 E304 - ROM Checksum Bad
 E305 - System Reset
 E306 - Panel Programming Changed
 E310 - Ground Fault
 R310 - Ground Fault Restore
 E320 - Sounder/Relay Trouble
 R320 - Sounder/Relay Restore
 E321 - Bell 1 Trouble
 R321 - Bell 1 Restore
 E322 - Bell 2 Trouble
 R322 - Bell 2 Restore
 E323 - Alarm Relay Trouble
 R323 - Alarm Relay Restore

ASD Code or Point Number

12 Trouble Alarm Point 255
 14 Trouble Rest. Point 255
 12 Trouble Alarm Point 254
 14 Trouble Restore Point 254
 12 Trouble Alarm Point 253
 14 Trouble Rest. Point 253
 12 Trouble Alarm Point 252
 12 Trouble Alarm Point 251
 12 Trouble Alarm Point 250
 12 Trouble Alarm Point 249
 12 Trouble Alarm Point 245
 14 Trouble Rest. Point 245
 12 Trouble Alarm Point 244
 14 Trouble Rest. Point 244
 12 Trouble Alarm Point 243
 14 Trouble Rest. Point 243
 12 Trouble Alarm Point 242
 14 Trouble Rest. Point 242
 12 Trouble Alarm Point 241
 14 Trouble Rest. Point 241

E324	- Trouble Relay Trouble	12	Trouble Alarm Point	240
R324	- Trouble Relay Restore	14	Trouble Rest. Point	240
E325	- Reversing Relay Trouble	12	Trouble Alarm Point	239
R325	- Reversing Relay Restore	14	Trouble Rest. Point	239
E330	- System Peripheral Trouble	12	Trouble Alarm Point	238
R330	- System Peripheral Restore	14	Trouble Rest. Point	238
E331	- Polling Loop Open	12	Trouble Alarm Point	237
R331	- Polling loop Open Restore	14	Trouble Rest. Point	237
E332	- Polling Loop Short	12	Trouble Alarm Point	236
R332	- Polling Loop Short Restore	14	Trouble Rest. Point	236
E333	- Expansion Module Failure	12	Trouble Alarm Point	235
R333	- Expansion Module Restore	14	Trouble Rest. Point	235
E334	- Repeater Failure	12	Trouble Alarm Point	234
R334	- Repeater Restore	14	Trouble Rest. Point	234
E335	- Local Printer Paper Out	12	Trouble Alarm Point	233
R335	- Local Printer Paper Restore	14	Trouble Rest. Point	233
E336	- Local Printer Failure	12	Trouble Alarm Point	232
R336	- Local Printer Restore	14	Trouble Rest. Point	232
E350	- Communication Trouble	12	Trouble Alarm Point	231
R350	- Communication Restore	14	Trouble Rest. Point	231
E351	- Telecom 1 Fault	12	Trouble Alarm Point	230
R351	- Telecom 1 Restore	14	Trouble Rest. Point	230
E352	- Telco 2 Fault	12	Trouble Alarm Point	229
R352	- Telco 2 Restore	14	Trouble Rest. Point	229
E353	- Long Range Radio Xmitter Fault	12	Trouble Alarm Point	228
R353	- Long Range Radio Xmitter Rest.	14	Trouble Rest. Point	228
E354	- Failure to Communicate Event	12	Trouble Alarm Point	227
R354	- Fail to Communicate Restore	14	Trouble Rest. Point	227
E355	- Loss of Radio Supervision	12	Trouble Alarm Point	226
R355	- Restore of Radio Supervision	14	Trouble Rest. Point	226
E356	- Loss of Central Polling	12	Trouble Alarm Point	225
R356	- Restore of Central Polling	14	Trouble Rest. Point	225
E370	- Protection Loop	12	Trouble Alarm Point	224
R370	- Protection Loop Restore	14	Trouble Rest. Point	224
E371	- Protection Loop Open	12	Trouble Alarm Point	223
R371	- Protection Loop Open Restore	14	Trouble Rest. Point	223
E372	- Protection Loop Short	12	Trouble Alarm Point	222
R372	- Protection Loop Short Restore	14	Trouble Rest. Point	222
E373	- Fire Trouble	12	Trouble Alarm Point	221
R373	- Fire Trouble Restore	14	Trouble Rest. Point	221
E380	- Trouble (Global)	0E	Tamper Alarm Point	xxx
R380	- Trouble (Global) Restore	10	Tamper Rest. Point	xxx
E381	- Loss of Supv. RF	0E	Tamper Alarm Point	xxx
R381	- Loss of Supv. RF Restore	10	Tamper Rest. Point	xxx
E382	- Loss of Supv. RPM	12	Trouble Alarm Point	xxx
R382	- Loss of Supv. RPM Restore	14	Trouble Rest. Point	xxx
E383	- RPM Sensor Tamper	0E	Tamper Alarm Point	xxx
R383	- RPM Sensor Tamper Restore	10	Tamper Rest. Point	xxx
E384	- RF Low Battery	12	Trouble Alarm Point	xxx
R384	- RF Low Battery Restore	14	Trouble Rest. Point	xxx

Where xxx is the Point/Section# received.

*** **Any 3xx series event code received that is not defined above will generate an ASD event code of 12 for an E (new trouble) or 14 for an R (new trouble restore) in line with the above but with a Point Number of 220.**

OPEN/CLOSE or Access CLASSIFICATION

Contact ID Code	ASD Code or Point Number
E400 - Opening	31 Opening User 255
R400 - Closing	51 Closing User 255
E401 - Group 00 Open User #	31 Opening ALL User #xxx
R401 - Group 00 Close User #	51 Closing ALL User #xxx
E401 - Grps 01-30 Open User #	32-50 Partial Open Grp 01-30 User #xxx
R401 - Grps 01-30 Close User #	52-70 Partial Close Grp 01-30 User #xxx
E402 - Group 00 Open User #	31 Opening ALL User #xxx
R402 - Group 00 Close User #	51 Closing ALL User #xxx
E402 - Group Opening	32-50 Opening Grp 01-30 User #xxx
R402 - Group Closing	32-50 Closing Grp 01-30 User #xxx
E403 - Automatic Opening	31 Opening User 253
R403 - Automatic Closing	51 Closing User 253
E405 - Deferred Opening	31 Opening User 252
R405 - Deferred Closing	51 Closing User 252
E406 - Cancel	31 Opening User 251
E407 - Remote Disarm	31 Opening User 250
R407 - Remote Arm	51 Closing User 250
R408 - Quick Arm	51 Closing User 249
E409 - Keyswitch Disarm	31 Opening User 248
R409 - Keyswitch Arm	51 Closing User 248
E411 - Callback Request Made	06 Alarm point 236
E412 - Successful Download/Access	06 Alarm point 235
E413 - Unsuccessful Access	06 Alarm point 234
E414 - System Shutdown Command Recv.	06 Alarm point 233
E415 - Dialler Shutdown Command Recv.	06 Alarm point 232
E421 - Access Denied	06 Alarm point 231
E422 - Access Report by User	06 Alarm point 230
R441 - Armed STAY	51 Closing User 247
E450 - Exception Open	31 Opening User 246
R450 - Exception Close	51 Closing User 246
E451 - Early Open	31 Opening User 245
R451 - Early Close	51 Closing User 245
E452 - Late Open	31 Opening User 244
R452 - Late Close	51 Closing User 244
E453 - Failed to Open	31 Opening User 243
E454 - Failed to Close	31 Opening User 242
E455 - Auto Arm Failed	31 Opening User 241
R456 - Partial Arm	51 Closing User 240
E457 - Exit Error	31 Opening User 239
E458 - User on Premises	31 Opening User 238
R459 - Recent Close	51 Closing User 237

*** Groups > 30 will be sent as 30

*** Users above 220 will be sent as 220.

*** Any 400 series event code received that is not defined above will generate an ASD event code of 31 for an E (new opening) or 51 for an R (new closing) in line with the above but with a Point Number of 220.

BYPASS / DISABLE CLASSIFICATION

CONTACT ID EVENT	ASD CODE	POINT NUMBER
E57? - Bypasses	16	Isolate Point xxx
R57? - Bypasses Restore	18	D-Isolate Point xxx
E520 - Sounder/Relay Disable	16	Isolate point 255
R520 - Sounder/Relay Enable	18	D-isolate point 255
E521 - Bell 1 Disable	16	Isolate point 254
R521 - Bell 1 Enable	18	D-isolate point 254
E522 - Bell 2 Disable	16	Isolate point 253
R522 - Bell 2 Enable	18	D-isolate point 253
E523 - Alarm Relay Disable	16	Isolate point 252
R523 - Alarm Relay Enable	18	D-isolate point 252
E524 - Trouble Relay Disable	16	Isolate point 251
R524 - Trouble Relay Enable	18	D-isolate point 251
E525 - Reversing Relay Disable	16	Isolate point 250
R525 - Reversing Relay Enable	18	D-isolate point 250
E551 - Dialler Disabled	16	Isolate point 249
R551 - Dialler Enabled	18	D-isolate point 249
E552 - Radio Transmitter Disabled	16	Isolate point 248
R552 - Radio Transmitter Enabled	18	D-isolate point 248

***** Any 500 series event code received that is not defined above will generate an ASD event code of 16 for an E (new bypass) or 18 for an R (bypass restore) in line with the above but with a Point Number of 220.**

E601 - Test Manually Triggered	06	Alarm point 254
E602 - Test Periodic	06	Alarm point 253
E603 - Periodic RF Transmission	06	Alarm point 252
E604 - Fire Test	06	Alarm point 251
R604 - Fire Test	08	Restore point 251
E605 - Status Report to Follow	06	Alarm point 250
E606 - Listen-in to Follow	06	Alarm point 249
E607 - Walk Test Mode Entered	06	Alarm point 248
R607 - Walk Test Mode Exited	08	Restore point 248
E621 - Event Log Reset	06	Alarm point 247
E622 - Event Log 50% Full	06	Alarm point 246
E623 - Event Log 90% Full	06	Alarm point 245
E624 - Event Log Overflow	06	Alarm point 244
E625 - Time/Date Reset	06	Alarm point 243
E626 - Time/Date Inaccurate	06	Alarm point 242
E627 - Program Mode Entry	06	Alarm point 241
E628 - Program Mode Exit	06	Alarm point 240
E630 - Schedule Change	06	Alarm point 239
E631 - Exception Schedule Change	06	Alarm point 238
E632 - Access Schedule Change	06	Alarm point 237

***** Any 200, 700, 800 and 900 series event code received will generate an ASD event code of 12 for an E (new trouble) or 14 for an R (new trouble restore) in line with the above but with a Point Number of 220.**

***** Any 600 series event code received that is not defined above should generate an ASD event code of 06 for an E (new alarm) or 08 for an R (new restore) in line with the above but with a Point Number of 220.**