

MSF5000 / 10000 STATION ERROR CODES

MSF5000/10000 DIGITAL "E" ERROR CODES

Below is a list of brief explanations of Operational error codes that may be displayed on the digital LED display on the front panel of the MSF5000/10000 Stations. Codes of 80 hex or higher are fatal and will cause the station to reset (show 8.8.8.) and reboot.

Operational Error Codes	
E00	Push-to-Talk Type HSR Image Mismatch
E10	RF Band not Designated
E20	Secure Module Coded Rx Level EEPot lower limit out-of-bounds
E21	SSCB Flutter-Fighter Clip Level EEPot lower limit out-of-bounds
E22-E2E	SSCB EEPot Value out-of-bounds (EEPot # is last digit)
E30-E3E	TTRC EEPot Value out-of-bounds (EEPot # is last digit)
E3F	RAC/SAM EEPot limit out-of-bounds
E40	Receive Loop Control Signal Error
E41	Transmit Loop Control Signal Error
E42	Bad MCS Update Time value in SSCB Code Plug
E43	MCS Transfer Error
E44	MCS ASCII Data Transfer Error
E45	Rx Level Adjust Error
E46	Tx Synthesizer Failed To Unlock
E47	Tx Synthesizer Failed To Lock
E48	Rx Synthesizer Failed To Unlock
E49	Rx Synthesizer Failed To Lock
E4A	Rx2 Synthesizer Failed To Unlock
E4b	Rx2 Synthesizer Failed To Lock
E4C	Illegal Number of Scan Channels
E4d	Rx1 Tuning Channel Is Zeroed
E4E	Rx2 Tuning Channel Is Zeroed
E4F	Tx Tuning Channel Is Zeroed
E50	TTRC ALC Xmit EEPot Code Plug Value Invalid
E51	TTRC Un-ALC Xmit EEPot Code Plug Value Invalid
E52	Invalid HSR Address In External PTT Control Table
E53	Invalid HSR bit IN External PTT Control Table
E54	TTRC Encode Echo Busy
E55	TTRC Encoder Active Too Long
E56	Bad TTRC Tone Request
E57	Invalid DC Current Present (TTRC)
E58	Invalid HSR Address Specified in Spare Control Table
E60	Call Sign Too Long (SSCB)
E70-E78	RAC/SAM Errors
E80	Invalid SSCB Timer Usage
E81	Invalid SSCB EEPot Operation Requested
E82	Invalid Push-To-Talk Request
E83	Invalid Push-To-Talk Arbitration State

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Operational Error Codes	
E84	Invalid Transmitter Operations State Detected
E85	Missing MCS Module
E86	Invalid EEPot Adjustment State Detected
E87	Invalid High Speed Ring Display State Detected
E88	Invalid Push-To-Talk Priority List Detected
E89	Too Many Channels and Modes Defined
E8A	Invalid SSCB I/O State Detected
E8b	Invalid SSCB IPCB Command State Detected
E8C	Invalid Power Level Trip Display State Detected
E8d	SSCB Sp Address Table Error
E8E	Invalid Scan Operation State Detected
E90	Invalid TTRC Timer Usage
E91	Invalid TTRC EEPot Operation Requested
E92	Invalid TTRC Tone Requested
E93	Invalid TTRC Command Requested
E94	Invalid TTRC ALC State Detected
E95	Invalid TTRC DC Current Number Detected
E9b	Invalid TTRC IPCB Command State Detected
E9D	TTRC SP Address Error
EA0	Invalid Secure Timer Usage
EA1	Invalid Secure Takeover State Detected
EA2	RAC/SAM Output Response Number Out-of-Range
EAA	RAC/SAM Output Line Number Out-of-Range
EAb	Invalid Secure IPCB Command State Detected
EAD	Secure SP Address Error
Eb0-EE1	Undefined Interrupt Vector Fetched
EFF	COP Failure

MSF5000 / 10000 STATION ERROR CODES

MSF5000/10000 DIGITAL "d" ERROR CODES

Below is a list of brief explanations of Digital Diagnostic error codes that may be displayed on the digital LED display on the front panel of the MSF5000/10000 Stations. Codes of 80 hex or higher are fatal and will cause the station to reset (show 8.8.8.) and reboot.

Digital Diagnostic Error Codes	
d01	SSCB Primary User Area Has Bad Check Byte
d10	TTRC Module did not receive IPCB Wakeup Command from SSCB
d11	TTRC Primary User Area Has Bad Check Byte
d13	Bad Guard Tone Frequency
d20	Secure Module did not receive IPCB Wakeup Command from SSCB
d40	MCS did not receive IPCB Wakeup Command from SSCB
d80	Corrupted User Area of SSCB Code Plug
d81	Corrupted SSCB Code Plug
d82	Bad SSCB Serial EEPROM
d83	SSCB Code Plug Type Mismatch
d84	Incorrect SSCB Code Plug Version Number
d85	Incorrect SSCB Code Plug Checksum
d86	Incorrect SSCB Firmware Checksum
d90	Faulty SSCB Internal RAM
d91	No SSCB MUXbus Data Strobe (internal loop-back mode)
d92	No SSCB MUXbus Data Strobe (normal operating mode)
d93	Improper SSCB MUXbus Operation (internal loop-back mode)
d94	Improper SSCB MUXbus Operation (normal operating mode)
d97	No SSCB High Speed Ring Clock/Sync Signal (internal loop-back mode)
d98	No SSCB High Speed Ring Clock/Sync Signal (normal operating mode)
d99	Improper SSCB High Speed Ring Operation (internal loop-back mode)
d9A	Improper SSCB High Speed Ring Operation (normal operating mode)
d9b	Defective SSCB IPCB Interface
d9E	SSCB Processor Configuration Register Altered
d9F	SSCB EEPROM Code Plug Erased
dA0	Corrupted User Area of TTRC Code Plug
dA1	Corrupted TTRC Code Plug
dA2	Bad TTRC Serial EEPROM
dA3	TTRC Code Plug Type Mismatch
dA4	Incorrect TTRC Code Plug Version Number
dA5	Incorrect TTRC Code Plug Checksum
dA6	Incorrect TTRC Firmware Checksum
dA7	Missing TTRC Module
dA8	TTRC Module Present But Not Responsive
dA9	TTRC Code Plug Station Type Mismatch
dAA	TTRC System Version Number Mismatch
dAC	TTRC EEPROM Programming Timeout Error
db0	Faulty TTRC Internal RAM

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Digital Diagnostic Error Codes	
db1	No TTRC MUXbus Data Strobe (internal loop-back mode)
db2	No TTRC MUXbus Data Strobe (normal operating mode)
db3	Improper TTRC MUXbus Operation (internal loop-back mode)
db4	Improper TTRC MUXbus Operation (normal operating mode)
db7	No TTRC High Speed Ring Clock/Sync Signal (internal loop-back mode)
db8	No TTRC High Speed Ring Clock/Sync Signal (normal operating mode)
db9	Improper TTRC High Speed Ring Operation (internal loop-back mode)
dbA	Improper TTRC High Speed Ring Operation (normal operating mode)
dC0	Corrupted User Area of Secure Code Plug
dC1	Corrupted Secure Code Plug
dC3	Secure Code Plug Type Mismatch
dC4	Incorrect Secure Code Plug Version Number
dC5	Incorrect Secure Code Plug Checksum
dC6	Incorrect Secure Firmware Checksum
dC7	Missing Secure Module
dC8	Secure Module Present But Not Responsive
dC9	Secure Code Plug Station Type Mismatch
dCA	Secure System Version Number Mismatch
dCC	Secure EEPROM Programming Timeout Error
dd0	Faulty Secure Internal RAM
dd1	No Secure MUXbus Data Strobe (internal loop-back mode)
dd2	No Secure MUXbus Data Strobe (normal operating mode)
dd3	Improper Secure MUXbus Operation (internal loop-back mode)
dd4	Improper Secure MUXbus Operation (normal operating mode)
dd5	Secure Standard Mode ASIC Output Latch/Input Buffer Error (internal loop-back mode)
dd7	No Secure High Speed Ring Clock/Sync Signal (internal loop-back mode)
dd8	No Secure High Speed Ring Clock/Sync Signal (normal operating mode)
dd9	Improper Secure High Speed Ring Operation (internal loop-back mode)
ddA	Improper Secure High Speed Ring Operation (normal operating mode)
ddb	Faulty Secure Module Transmit Phase Lock Detector Circuits
ddC	Faulty Secure Module Receive Phase Lock Detector Circuits
dE0-dF6	RAC/SAM Error Codes
dEA	RAC/SAM Board System Version # is incompatible with SSCB's

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MSF5000/10000 DIGITAL "o" and "U" ERROR CODES

Below is a list of brief explanations of error codes that are not Digital Diagnostic or Operational. These error codes may be displayed on the digital LED display on the front panel of the MSF5000/10000 Stations.

Special Test Mode Errors	
o80-o89	Undefined SSCB Interrupt Vector Fetched
o8C-o8F	Undefined SSCB Interrupt Vector Fetched
oA0-ob2	Undefined TTRC Interrupt Vector Fetched
obE	TTRC Processor Configuration Register Altered
obF	TTRC EEPROM Code Plug Erased
oC0-od1	Undefined Secure Interrupt Vector Fetched
odE	Secure Processor Configuration Register Altered
odF	Secure EEPROM Code Plug Erased

Undefined Error Codes

U00-UFF	Unrecognized Error Code Class
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MSF5000 / 10000 STATION ERROR CODES

MSF5000/10000 DIGITAL "A" ERROR CODES

Below is a list of brief explanations of error codes that are related to the various audio paths and circuits. These error codes may be displayed on the digital LED display on the front panel of the MSF5000/10000 Stations.

Audio Diagnostic Error Codes	
A00	PL Encoder Error
A01	Alert Tone Encoder Error
A02	PL Modulation Path Error
A03	Limiter/Splatter Filter/MAX DEV EEPot Error
A04	Receive Audio Path Error
A05	Receive Squelch Detector Error
A06	Repeater Squelch Detector Error
A07	Select Audio (TP1) Error
A08	Line Audio Path Error
A09	Repeater Path Error
A0A	SSCB MC68HC11 Analog-to-Digital Converter system failure
A0b	Alert Tone Transmit Gate Failure
A0C	Defective Receive Audio Gate
A0d	PL Decoder Error
A20	TTRC MC68HC11 Analog-to-Digital Converter system failure
A21	TRC Encoder Failure
A22	TRC Encoder to Line 2 Path Failure
A23	TRC Encoder to Line 4 Path Failure
A24	TRC Encoder to Line 2 Path Failure
A25	Bad Line 2 Gate (No Mute)
A26	TTRC Encoder to Line 2 Path Failure or Line 4 EEPot Failure
A27	Bad Line 4 Gate (No Mute)
A28	STAC Encoder Failure or STAC EEPot Failure
A29	STAC Encoder to Line 2 Path Failure
A2A	ALC Audio Circuitry Failure
A2b	Function Tone Decode Circuitry Failure
A2E	ALC Audio to Tx Audio 4 Path Failure or Tx Level EEPot Failure
A2F	ALC Audio to TX Audio 2 Path Failure or Tx Level EEPot Failure
A30	Un-ALC Audio to Tx Audio Path Failure
A31	Failsoft Tone Trunking Mod Audio Path Failure
A32	Failsoft Codeword Trunking Mod Audio Path Failure or Trunking Deviation EEPot Failure
A33	Bad Data/Failsoft Gate
A40	Secure MC68HC11 Analog-to-Digital Converter system failure
A41	Secure Alert Tone Encoder/Filter failure
A42	Secure Coded Modulation Splatter Filter Failure
A43	Secure Coded Modulation Audio Gate Failure
A44	Secure Coded Receive Audio Line Filter Failure
A45	Secure Rx Coded Audio Gate Failure

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MSF5000/10000 DIGITAL FLASHING ERROR CODES

Below is a list of brief explanations of error codes that are displayed as individual flashing LEDs or the entire digital display of the MSF5000/10000 Stations.

Diagnostic Error Indications - Flashing LED or Display		
Flashing Indicator	# Flashes	Problem Area or Condition
SSCB Status Display	2	Faulty SSCB Display Driver or No Interrupt Request Interrupt
SSCB Status Display	4	Faulty SSCB External RAM
TTRC FAIL LED	2	No Interrupt Request interrupt to the TTRC microprocessor
TTRC FAIL LED	4	Faulty TTRC External RAM
TTRC FAIL LED	6	Faulty IPCB operation on the TTRC module.
Secure FAIL LED	2	No RX Interrupt Request or TX Interrupt Request signal (should be pulses every 667 uS)
Secure FAIL LED	4	Faulty Secure Module External RAM
Secure FAIL LED	6	Faulty IPCB operation on the Secure module

MSF5000/10000 DIGITAL and ANALOG BEEPING ALARM CODES

Below is a list of brief explanations of error codes that are indicated as audible beeps over-the-air or down the wire-line of the MSF5000/10000 Stations.

Beeping Alarm Codes			
# Beeps	Alarm Condition or Area	Analog	Digital
1	Battery Revert	Y	Y
2	Power Amplifier	Y	Y
3	Synthesizer Unlocked	Y	Y
4	Battery Overvoltage	Y	Y
5	Trunking TSTAT	N	Y
6	Reflected Power Limit	N	Y
7	Forward Power Limit	N	Y
8	Redundant Station Error	N	Y

MSF5000 ANALOG FLASHING ERROR CODES

Below is a list of brief explanations of error codes that are displayed by flashing the TEST LED on the station control board of the MSF5000 Analog Stations.

Flashing TEST LED Codes	
# Flashes	Alarm Condition or Area
Rapid/ON	Watchdog Reset failure or expansion bus problem
1	Microprocessor or program ROM defective; replace
2	Code plug ROM defective; replace
3	MUXbus not operating properly; troubleshoot
4	IPCB not operating properly; troubleshoot