Element Management

Transponder for SAII & SAIII Amplifiers

Description

The SAII/SAIII transponder is a special purpose status monitoring transponder designed to interface with Scientific-Atlanta's System Amplifier II & III Distribution Amplifier Station. It is controlled by Scientific-Atlanta's ROSA™ Element Manager (EM) and Transmission Network Control System (TNCS) element management systems.

The transponder monitors the operational parameters of the amplifier and allows remote control of certain amplifier functions. Communications to and from the transponders are accomplished via the built-in forward RF data carrier receiver and reverse RF data carrier transmitter.

The transponder communicates with the ROSA EM and TNCS element management systems via the Phoenix™ RF Modem. The cutting-edge RF technology used in the Phoenix modem allows operation in networks that suffer from a high level of ingress noise in the return path.

The transponder monitors a wide range of operational parameters, including:

- Station temperature
- AC and DC power supply voltages
- AGC voltage level detect
- Housing opened/closed

If the status of any monitored parameter is outside of established thresholds an alarm can be activated by the centrally located element management console. All alarm thresholds are remotely adjustable from the console. The transponder also enables remote control of the reverse "On/-6 dB/Off" RF switches (for remote isolation of ingress) and of the power supply.

The transponder has a frequency agile FSK data modem, downloadable program storage, and supports current Scientific-Atlanta (S-A) and AM Communications (AM) protocols. Frequency agility allows the transponder to be remotely tuned to a new operating channel in the event that communication is impaired by noise or ingress in the return spectrum. Dual protocol support permits automatic switchover on command from either protocol.

The transponder utilizes internal non-volatile memory for storage of the unit address, calibration data, and other important operational parameters. Two front panel LEDs are present to indicate the unit is functioning properly, and the unit is actively being polled. Programming is accomplished by connecting the Model 6585 Handheld Programmer (1 required) to the RJ-45 style modular Craft connector, thereby allowing the user to configure, control, and monitor this transponder. The unit is packaged in a formed sheet-metal housing that plugs directly into the status monitor socket in the amplifier housing.

Features

- "Plug-in" compatibility with Scientific-Atlanta System Amplifier II / III amplifiers
- Frequency agile 5 to 40 MHz for reverse path – (within specified bandwidth)
- Frequency agile 50 to 110 MHz for forward path – (within specified bandwidth)
- Dual protocol support
- Monitors all critical internal station parameters
- Controls all switches within the station
- Simple and efficient installation – no switches or adjustments
- Wide operating temperature range

Transponder for SAII & SAIII Amplifiers

Specifications

Agile Transmitter

Parameter	Specifications	Units	Notes
Carrier frequency	5.5-8 12-18 27-40	MHz MHz MHz	Choose one of the frequency bands. Agile within the frequency band.
Modulation Type	FSK	-	
Deviation	±50 (AM) ±20 (S-A)	kHz kHz	AM Communications Scientific-Atlanta
Occupied bandwidth	500 (AM) 350 (S-A)	kHz kHz	@ 50 dBc
RF output level	21 to 45	dBmV	adjustable
Output level step size	6.0	DB	
Level stability	± 2.0	DB	each step
Frequency stability	0.01	%	
Data Format	Asynchronous, NRZ, Burst Packet		
Data Rate	38.4 (AM) 9.6 (S-A)	kbps kbps	
Spurious Outputs (max)	> -30	dBmV	5 to 750 MHz

Agile Receiver

Parameter	Specifications	Units	Notes
Receive carrier frequency	50-53 73-76 107-110	MHz MHz MHz	Choose one of the frequency bands. Agile within the frequency band.
Nominal RF input level	0	dBmV	
Input level range	-25 to + 15	dBmV	
Interference Rejection @± 300 kHz @± 600 kHz	 0 dBc +20 dBc	 kHz kHz	

Power / Environmental

Parameter	Specifications	Units	Notes
Voltage	24	V DC	±3%
Current Consumption	150	mA max	
Operating Temperature	-40 to + 85	ºC	
Humidity	0 to 90	%	Non-Condensing

Mechanical

Parameter	Specifications	Units	Notes
Dimensions	5.625 x 3.875 x1.037	Inches	
RF In/Out	Type: RG 179	B/U	
Station Interface	20 Pin		

Monitored Parameters

Device	Units	Parameter
Amplifier Temperature	°C	Internal Temperature
Transponder Data Carrier	dBmV	RF Input Level
Power Supply	V AC	AC Input Voltage
Power Supply	V DC	DC Output Voltage
Tamper Switch	-	Housing Open or Closed

Controllable Parameters

Device	Control Variables
Reverse Switch	Normal/-6 dB/Off

Transponder for SAII & SAIII Amplifiers

Ordering Information

Description	Part Number
Transponder, System Amplifier II or III, Agile 5.5-8/50-53 MHz (AM/SA)	566610
Transponder, System Amplifier II or III, Agile 5.5-8/73-76 MHz (AM/SA)	566611
Transponder, System Amplifier II or III, Agile 5.5-8/107-110 MHz (AM/SA)	566612
Transponder, System Amplifier II or III, Agile 12-18/50-53 MHz (AM/SA)	566615
Transponder, System Amplifier II or III, Agile 12-18/73-76 MHz (AM/SA)	566616
Transponder, System Amplifier II or III, Agile 12-18/107-110 MHz (AM/SA)	566617
Transponder, System Amplifier II or III, Agile 27-40/50-53 MHz (AM/SA)	566620
Transponder, System Amplifier II or III, Agile 27-40/73-76 MHz (AM/SA)	566621
Transponder, System Amplifier II or III, Agile 27-40/107-110 MHz (AM/SA)	566622

Accessories

Description	Part Number
SAII Housing Lid Assembly, low profile, uncoated	564385
SAII Housing Lid Assembly, low profile, coated	564386
Module, Reverse Switch ON or -6 dB for SA II, SAIII, and Model 6920 Launch Amplifier	548598
Module, Reverse Switch ON/OFF or -6 dB for SA II, SAIII, and Model 6920 Launch Amplifier	540633

Related Equipment – Handheld Programmer (see Model 6585 Handheld Programmer Data Sheet for more information)

Description	Part Number
Hand Held Programmer, Interface Cable, and Data Inverter Box	372895
Hand Held Interface Cable (RJ-11 to DB-9), replacement	562244
Transponder Data Inverter box, replacement	564510

Phoenix RF Modem	Part Number
Tx (1), Rx (1)	
Phoenix 110/220 V AC EU, Tx (1) and Rx (1)	V9528341
Phoenix 110/220 V AC UK, Tx (1) and Rx (1)	V9528342
Phoenix 110/220 V AC AUS, Tx (1) and Rx (1)	V9528343
Phoenix 110/220 V AC US, Tx (1) and Rx (1)	V9528082
Tx (1), Rx (2)	
Phoenix 110/220 V AC EU, Tx (1) and Rx (2)	V9528344
Phoenix 110/220 V AC UK, Tx (1) and Rx (2)	V9528345
Phoenix 110/220 V AC AUS, Tx (1) and Rx (2)	V9528347
Phoenix 110/220 V AC US, Tx (1) and Rx (2)	V9528346
Tx (1), Rx (4)	
Phoenix 110/220 V AC EU, Tx (1) and Rx (4)	V9528348
Phoenix 110/220 V AC UK, Tx (1) and Rx (4)	V9528349
Phoenix 110/220 V AC AUS, Tx (1) and Rx (4)	V9528351
Phoenix 110/220 V AC US, Tx (1) and Rx (4)	V9528350
Tx (1), Rx (8)	
Phoenix -48 V DC, Combicon, Tx (1) and Rx (8)	V9523551
Phoenix -48 V DC, Mate-N-Lock, Tx (1) and Rx (8)	4002043
Phoenix 110/220 V AC EU, Tx (1) and Rx (8)	V9523552
Phoenix 110/220 V AC UK, Tx (1) and Rx (8)	V9528338
Phoenix 110/220 V AC AUS, Tx (1) and Rx (8)	V9528340
Phoenix 110/220 V AC US, Tx (1) and Rx (8)	V9528339
Phoenix Options	**Part Number**
Phoenix Receiver Kit (one receiver)	4002230

Ordering Information, continued

ROSA EM – North and Latin America	Part Number
ROSA EM – AC Version	
ROSA EM, 100 - 240 V AC US, DCL Class 1 (0-10 devices)	4005326
ROSA EM, 100 - 240 V AC US, DCL Class 2 (0-25 devices)	4005370
ROSA EM, 100 - 240 V AC US, DCL Class 3 (0-50 devices)	4005371
ROSA EM, 100 - 240 V AC US, DCL Class 4 (0-100 devices)	4005372
ROSA EM, 100 - 240 V AC US, DCL Class 5 (0-250 devices)	4005373
ROSA EM, 100 - 240 V AC US, DCL Class 6 (0-500 devices)	4005374
ROSA EM, 100 - 240 V AC US, DCL Class 7 (0-750 devices)	4005375
ROSA EM, 100 - 240 V AC US, DCL Class 8 (0-1000 devices)	4005376
ROSA EM – DC Version	
ROSA EM, -48 V DC US, DCL Class 1 (0-10 devices)	4006322
ROSA EM, -48 V DC US, DCL Class 2 (0-25 devices)	4007210
ROSA EM, -48 V DC US, DCL Class 3 (0-50 devices)	4007211
ROSA EM, -48 V DC US, DCL Class 4 (0-100 devices)	4007212
ROSA EM, -48 V DC US, DCL Class 5 (0-250 devices)	4007213
ROSA EM, -48 V DC US, DCL Class 6 (0-500 devices)	4007214
ROSA EM, -48 V DC US, DCL Class 7 (0-750 devices)	4007215
ROSA EM, -48 V DC US, DCL Class 8 (0-1000 devices)	4007216

ROSA EM – EMEA (Europe, Middle-East, Asia)	Part Number
ROSA EM Headend	
ROSA EM Headend, 100 – 240 V AC EU DCL Class 5 (0-250 headend devices)	4005317
ROSA EM Headend, 100 – 240 V AC UK DCL Class 5 (0-250 headend devices)	4005320
ROSA EM Headend, 100 – 240 V AC AUS DCL Class 5 (0-250 headend devices)	4005323
ROSA EM Headend, -48 V DC DCL Class 5 (0-250 headend devices)	4007217
ROSA EM Hub & HFC	
ROSA EM Hub & HFC, 100 – 240 V AC EU DCL Class 6 (0-500 Hub & HFC network devices)	4005318
ROSA EM Hub & HFC, 100 – 240 V AC UK DCL Class 6 (0-500 Hub & HFC network devices)	4005321
ROSA EM Hub & HFC, 100 – 240 V AC AUS DCL Class 6 (0-500 Hub & HFC network devices)	4005324
ROSA EM Hub & HFC, -48 V DC DCL Class 6 (0-500 hub & HFC network devices)	4007218
ROSA EM Transmitter sites	
ROSA EM Tx Site, 100 – 240 V AC EU DCL Class 1 (0-10 devices in transmitter sites)	4005319
ROSA EM Tx Site, 100 – 240 V AC UK DCL Class 1 (0-10 devices in transmitter sites)	4005322
ROSA EM Tx Site, 100 – 240 V AC AUS DCL Class 1 (0-10 devices in transmitter sites)	4005325
ROSA EM Tx Site, -48 V DC DCL Class 1 (0-10 devices in transmitter sites)	4007219

Ordering Information, continued

ROSA EM Upgrades	Part Number
ROSA EM Device Count License (DCL) Upgrade	4005377
Class Info DCL Class 1 : 0-10 devices DCL Class 2 : 0-25 devices DCL Class 3 : 0-50 devices DCL Class 4 : 0-100 devices DCL Class 5 : 0-250 devices DCL Class 6 : 0-500 devices DCL Class 7 : 0-750 devices DCL Class 8 : 0-1000 devices	

ROSA EM Options	Part Number
ROSA EM external temperature sensor, maximum 2 per ROSA EM (cable length 15 m / 50 ft)	4005382

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