Technische Informationen
Engineering Data Sheet

RCM-28

Remote Control Module

Beschreibung

Das RCM-28 Remote Control Modul ist ein zweikanaliges Digital-Controller-Modul für Live Sound, PA und Festinstallation. Das Modul kann in Electro-Voice Tour Grade und DYNACORD PowerH Endstufen verwendet werden. Durch den Einbau des RCM-28 wird aus einem konventionellen Verstärker ein Remote Amplifier, man hat also zu jedem Zeitpunkt einen vollständigen Überblick über den gesamten Systemzustand und die Kontrolle über alle Systemparameter. RCM-28-Module erlauben die Integration der Verstärker in ein OMNEO-Netzwerk mit bis zu 100 Geräten in einem einzelnen Subnetz ohne zusätzliche Netzwerk-Hardware. Damit kann ein komplettes PA-System von einem oder mehreren PCs mit Hilfe der Software IRIS-Net - Intelligent Remote & Integrated Supervision - gesteuert und überwacht werden. Das RCM-28 stellt neben digitaler Signalverarbeitung einen digitalen Audio-Eingang (AES/EBU), OMNEO Audio-Eingänge und Ausgänge sowie Steuerein- und ausgänge zur Verfügung.

Weitere Eigenschaften:
- **116 dB Dynamikbereich** - für beste Audio-Performance
- **Hohe DSP-Leistung** - umfangreiche Signalverarbeitung mit Equalizer, Crossover, Delay, Dynamics
- **FIR Filter** - Linear Phase Filter, Linear Phase Brickwall Crossover
- **Lautsprecherschutz** - Peak Anticipation Limiter und TEMP (Thermal Energy Management and Protection) Limiter
- **Impedanzmessung** - von 20 Hz bis 20 kHz

Description

The RCM-28 Remote Control Module is a two-channel digital controller module for live sound reinforcement, PA and fixed installation applications. The module can be used in Electro-Voice Tour Grade and DYNACORD PowerH Amplifier models. Installing the RCM-28 turns a conventional amp into a remote amplifier, which, at any time, provides complete overview of the overall system status and control of all system parameters. RCM-28 modules allow the integration of amplifiers into a OMNEO network with up to 100 devices in a single subnet without additional hardware. This offers the possibility to control and monitor an entire sound system from one or more PCs using the IRIS-Net - Intelligent Remote & Integrated Supervision - software package. In addition to digital signal processing functions, the RCM-28 also offers a digital audio input (AES/EBU), OMNEO network audio inputs and outputs, and freely programmable control inputs and control outputs.

Additional features:
- **116 dB dynamic range** - for superior audio performance
- **High DSP power** - extensive signal processing including Equalizer, Crossover, Delay, Dynamics
- **FIR filter** - Linear Phase Filter, Linear Phase Brickwall Crossover
- **Speaker protection** - Peak Anticipation and TEMP (Thermal Energy Management and Protection) limiters
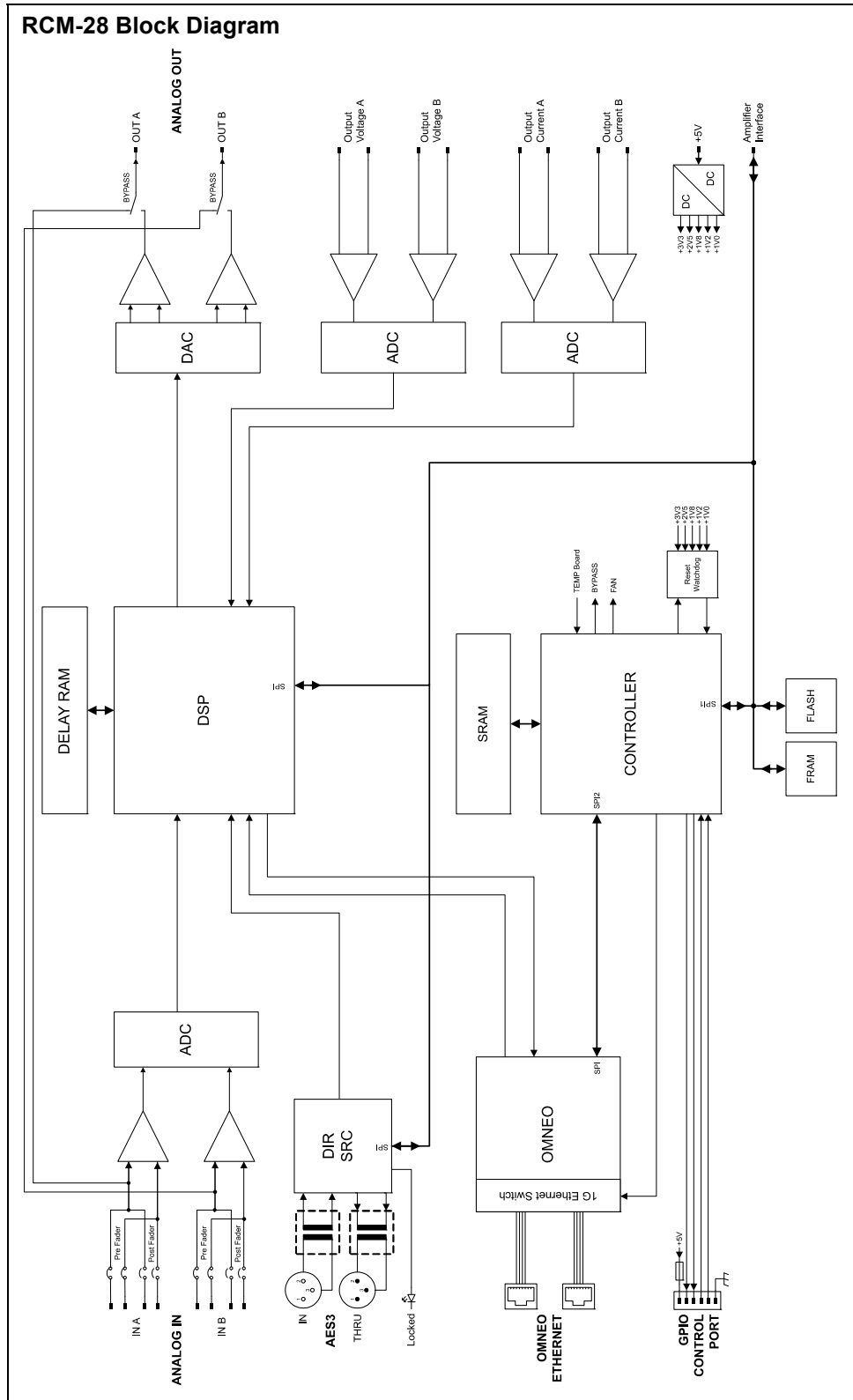- **Impedance measurement** - testing from 20 Hz to 20 kHz

Part Number

RCM-28	OMNEO Remote Control Module	F01U171994

Inhalt

1 x RCM-28
1 x Bedienungsanleitung
1 x Kunden-Information
1 x Stecker 6-pol. Phoenix MC 1,5/6-STF-3,81 (F.01U.104.179)
4 x Schrauben Kombi-Torx M3x10

Contents

1 x RCM-28
1 x Owner's manual
1 x Customer Information
1 x Connector 6-pole Phoenix MC 1,5/6-STF-3,81 (F.01U.104.179)
4 x Screws Combination Torx M3x10

RCM-28 Block Diagram

Technical Specifications

NETWORK AND GENERAL FEATURES	
Remote Control and Software	IRIS-Net, Multiple PCs possible, MS Windows XP, Vista, Win 7
Maximum Configuration	100 Amplifiers with RCM-28 in a single subnet without additional hardware
Supervised Amplifier Parameters	Operation mode, temperature, output voltage and current, impedance of connected speakers, protection mode status, mains voltage and current, power consumption, pilot tone detection
Network Supervision	Network failures, defective or missing amplifiers, failure protocol and messaging Redundant network possible
Audio Monitoring	All input and output signals selectable over OMNEO

AUDIO SPECIFICATIONS	
Analog Audio Input	2 audio inputs on internal slot connector, pre-/post fader selectable
Input Level (nominal)	+6 dBu / 1.55 V
Input Level (max. before clip)	+21 dBu / 8.7 V
A/D Conversion	24 Bit linear, Sigma-Delta, 128x oversampling
Digital Audio Input	AES3 (AES/EBU) format, XLR In/Thru connectors
Input Sample Rates	32 kHz – 192 kHz, internal Sample-Rate-Converter
Audio Output	2 audio outputs on internal slot connector
Output Level (nominal)	+6 dBu / 1.55 V
Output Level (max. before limit)	+15 dBu / 4.4 V
D/A Conversion	24 Bit linear, Sigma-Delta, 128x oversampling
Monitor Outputs	1 output channel via OMNEO; amplifier inputs and outputs selectable for monitoring
Frequency Response	20 Hz … 20 kHz (±0.5 dB)
Signal to Noise Ratio (A-weighted)	ADC: 120 dB typical / DAC: 120 dB typical / AES3: 128 dB typical / Analog In to Analog Out: 116 dB typical
THD+N	<0.002 %
Crosstalk	< -100 dB @ 1 kHz
Signal Delay / Latency	2.375 ms (Analog In to Analog Out) / 1.563 ms (AES3 In to Analog Out @ ext. Sync., 48 kHz)

SIGNAL PROCESSING	
Sample Rate	48 kHz
Data Format	24 Bit linear A/D and D/A conversion, 48 Bit processing
Signal Processing	Dual core DSP, 500MIPS
Input PEQ	10 filters per channel, selectable as PEQ, Lo-Shelf, Hi-Shelf, Hi-Pass and Lo-Pass
Input Delay	0 to 1000 ms per channel (units: µs, ms, s, cm, m, inches, feet, samples)
Array PEQ	5 filters per channel, selectable as PEQ, Lo-Shelf, Hi-Shelf, Hi-Pass, Lo-Pass and All-Pass
Array Delay	0 to 100 ms per channel (units: µs, ms, s, cm, m, inches, feet, samples)
Output PEQ	6 filters per channel, selectable as PEQ, Lo-Shelf, Hi-Shelf, Hi-Pass, Lo-Pass and All-Pass
Output X-Over	Hi-Pass and Lo-Pass per channel, 6/12/18/24 dB Bessel / Butterworth, 12/24 dB Linkwitz-Riley; Alignment Delay, 0 to 20 ms per channel
Output FIR	Linear Phase Filter, Linear Phase Brickwall X-Over
Output Delay	0 to 1000 ms per channel (units: µs, ms, s, cm, m, inches, feet, samples)
Output Limiters	Peak Anticipation Limiter and TEMP Limiter per channel
Other Functions	Input Routing, Level, Mute, Polarity, Sine and Noise Generator, Pilot Tone Generator and Detection, Level Meters, Impedance Measurement and Load Monitoring

INTERFACES	
OMNEO / Ethernet	2 x RJ-45 ports, 1000base-T/100base-TX, integrated switch (IRIS-Net Control)
GPIO Control Port	1 x 6-pole Euro block / 2 Control Inputs (U$_{in}$ max. 5 V) / 2 Control Outputs (2x 100 mA) / 2 Reference Outputs (+5 V, 200 mA / GND)

RCM-28 GENERAL SPECIFICATIONS	
Power Supply	+5 V DC / 1 A / +15 V DC / 180 mA / -15 V DC / 110 mA
Power Consumption	9.35 W

Operating Temperature Range	0 °C to +40 °C
Dimensions (W x H x D)	84.7 x 80.4 x 230.8 mm
Weight	
Net Weight	400g
Shipping Weight	930g
ACCESSORIES	
6-pole Euro block connector	For GPIO control port

Montage

1. Endstufe ausschalten und Netzstecker abziehen
2. Leerblende an Rückwand der Endstufe abschrauben (4 Schrauben)
3. RCM-28-Modul in Slot einschieben und mit 4 Schrauben an Rückwand befestigen
4. Anschließen benötigter Schnittstellen (OMNEO, Control-Port,..)
5. Netzkabel in Endstufe einstecken und Endstufe einschalten
6. Das RCM-28-Modul wird in der Endstufe automatisch erkannt.

Installation

1. Switch the power amp's power off and pull the mains plug
2. Remove the cover panel from the rear panel (4 screws)
3. Insert the RCM-28 module in the slot and lock it in place on the rear panel using the 4 screws
4. Connect the needed interfaces (OMNEO, Control Port,...)
5. Reconnect the mains cord and switch on the power amplifier
6. The power amp automatically recognizes the installed RCM-28 module

Abmessungen / Dimensions