

Antenna Monitoring & Control System



Product:

DEV 9110 -

Antenna Monitoring & Control System

Features:

- /// Convenient Setup and Remote Control of a Redundant Motorised Antenna via a comprehensive and easy to use Web Interface
- /// Automatic Positioning of a Redundant Motorised Antenna in Combination with DEV 1993 Redundancy Switch
- /// SNMP Protocol Support for Communication with Network Management Systems

Application Areas:

- /// Cable Head End Stations
- /// DAB-T with Satellite Input
- /// Digital TV

DEV 9110 Antenna Monitoring & Control System



Front DEV 9110



Rear DEV 9110

The Situation

To enhance the uptime of modern cable head end stations significantly, motorised antennas are used as redundancy, in case that one of the stationary antennas fails.

Usually, the direct operation of the motorised antenna via an antenna controller is not very convenient. Additionally, the antenna controller cannot be linked easily to the operation of a redundancy switch. I.e. if one of the stationary antenna signals fails, first, the redundancy antenna is to be moved to the corresponding antenna position and second, the redundancy switch is to be operated, that the signal is now fed by the redundancy antenna.

DEV worked out a Solution

First, DEV Systemtechnik had developed the redundancy switch DEV 1993 for the surveillance of stationary antennas and the capability to switch a reception channel to the redundancy antenna. The DEV 9110 Antenna Monitoring & Control System supplements this functionality via a user-friendly Web Interface combining the features of the DEV 1993 with the setup and control of a motorised antenna. Thus, a system is established to perform the automatic positioning of the motorised antenna and the redundancy switching.

Therefore, the DEV 9110 is always to be ordered in combination with a DEV 1993, please refer to the corresponding data sheet.

The Technical Concept

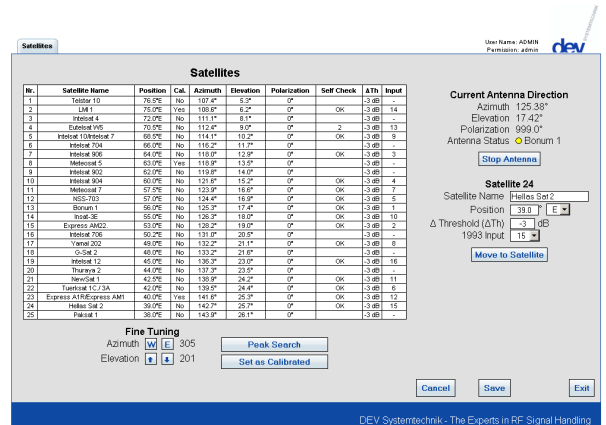
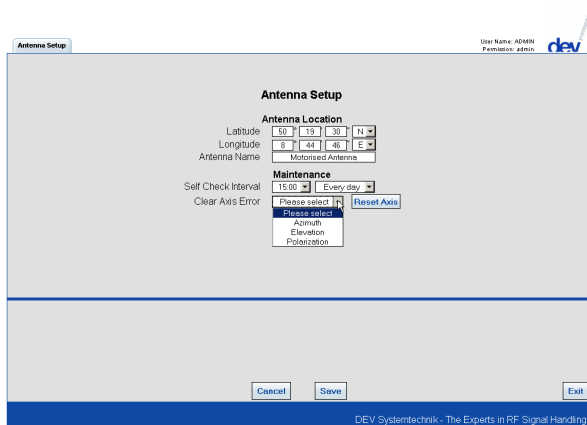
The base of the technical concept of the DEV 9110 is the application of a microcontroller which communicates with the antenna controller of the motorised antenna to provide a comprehensive and easy to use Web Interface for setting up distinct antenna positions and for manual operation and automatic positioning of the motorised redundancy antenna.

The communication of the DEV 9110 with a DEV 1993 Redundancy Switch is used to realise the automatic switching of signal paths to the redundancy antenna in case that one of the stationary antennas fails.

For remote surveillance via SNMP, the system can be attached to the head end's network management system.

Currently, two antenna controller types are supported by the DEV 9110 firmware; support for other antenna controllers will be realised in the future, please contact DEV Systemtechnik to discuss your individual requirements.

The DEV 1993/DEV 9110 Web Interface



The figures above show two screen shots of the Web Interface of a DEV 1993/DEV 9110 system.

The Antenna Setup Window

The Antenna Setup Window of the Web Interface permits the setup of the motorised redundancy antenna with respect to its geographical location, i.e. the GPS data of the antenna location has to be determined and the values are to be entered in the first two lines (labelled “Latitude” and “Longitude”) of the **Antenna Location** section. Additionally, the name of the redundancy antenna can be assigned in the “Antenna Name” line.

In the first line, the **Maintenance** section permits the definition of a “Self Check Interval”. With the left drop-down select box an hour of the day can be chosen, or the self check can be disabled by selecting “Never”. The second drop-down select box permits the selection of a weekday or the self check can be started “Every day”.

If activated, the self check will start automatically at the scheduled time. Then, the motorised antenna is sequentially commanded to all assigned antenna positions as stated in the “Input” column of the table in the Satellites Window. If the reception in the current position is above the corresponding threshold level, the entry “OK” will appear in the “Self Check” column of the satellites table, otherwise an error code will be entered there.

The Satellites Window

The Satellites Window of the Web Interface is used for the setup and the modification of stored satellite positions and for the manual motion of the motorised redundancy antenna.

The main part of the window is occupied by the satellites table which provides space for up to 25 different satellite entries. After specifying the name, the position and the assignment between satellite and DEV 1993 channel, the system calculates the values for azimuth and elevation for the motorised antenna via an internal calibration curve which can be continuously improved by the customer by adding qualified calibration points via the button

Set as Calibrated.

The antenna can be positioned to the specified satellite positions via the **Move to Satellite** button. By monitoring and judging the signal(s) of the redundancy antenna at the redundancy output(s) of the DEV 1993 the reception can be optimised and stored in the setup process by using the convenient **Peak Search** button and/or the four direction buttons (**W** , **E** , **▲** & **▼**), which permit a step-wise motion of the antenna.

Technical Data

DEV 9110 Antenna Monitoring & Control System

Remote Control

Interfaces, connectors	- (Interface for remote control & surveillance:) Ethernet, RJ-45; - (Configuration interface:) serial interface RS 232, Sub-D-9 (f); - (Antenna controller interface:) serial interface RS 422 or RS 485, Sub-D-9 (f).
Remote control & surveillance, interface	- via Web Interface, Ethernet; - via ProSan protocol, serial interface (DEV 1993 only); - via SNMP protocol, Ethernet.

Supported Antenna Controllers (support for other antenna controllers on request)

Manufacturer, type (option)	- Andrew Corporation, ACS 100-100 Antenna Programmable Controller (Option 30); - Research Concepts Inc., RC2000 Dual Axis Antenna Controller (Option 31).
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General Specifications

Housing	19" (483 mm), 3 RU (133 mm), 430 mm depth
Weight	~5 kg
Environmental conditions	ETS 300019 Part 1-3 Class 3.1

Order Information

The DEV 9110 Antenna Monitoring & Control System is always to be ordered in combination with a DEV 1993 Redundancy Switch, please refer to the corresponding data sheet.

DEV 9110 Antenna Monitoring & Control System

Please specify one of the following options to determine the applied antenna controller (please contact DEV Systemtechnik to discuss the support of other antenna controller types)

Option 30 Firmware supporting Antenna Controller
Andrew Corporation ACS 100-100 Antenna Programmable Controller
(including Interface Cable DEV 78-0128)

Option 31 Firmware supporting Antenna Controller
Research Concepts Inc. RC2000 Dual Axis Antenna Controller
(including Interface Cable DEV 78-0129)

Contact

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