A SIMPLY
PERFECT
NETWORK.

**CABLE-TV NETWORKS:
HFC PRODUCTS & MONITORING**

DELTA
E l e c t r o n i c s

DELTANET - DELTA´S SMART CONTROL SOFTWARE SOLUTION

▌ DELTANET – the smart way of getting device specific information during the installation of your network, gaining an installation topography overview with automatic cross checks and controlling your FTTx and HFC cable devices from DCT DELTA via our FSK receiver (FOSTRA-F)

▌ DELTANET consists of two main application, which can operate independent or jointly in a system:

▌ DELTANET FOSTRA-F: Our answer on the demand of a robust remote control tool for ingress management and others functions (depending on device type)

▌ DELTANET ScanApp: Supports you during installation – register your nodes / amps online with the help of bar- or QR codes (inventory), creates during the installation already a topology map based overview of your network via a parent-child relationship, cross checks duplicated wavelengths in an RFoG environment and collects images and documents during the installation date. Such online information are also useful for maintenance and service tasks.

DELTANET FOSTRA-F

▌ Module-oriented remote control solution for HFC/RFoG nodes/amps

▌ User friendly GUI grants access to relevant parameters of your nodes/amps, such as ingress suppression for sufficient error analysis in collaboration with your umbrella management system

▌ Robust and reliable Linux based platform, available as standalone or centralized server solution

▌ Access via web GUI (http(s)), CLI (SSH/serial), SNMP (requires license), REST API

▌ Based on FSK, unidirectional, consumes no additional bandwidth since the FSK carrier can be placed in-between two DS carriers

▌ Cost efficient with a pay as you grow licensing scheme

DELTANET ScanApp

▌ Client/Server system. Server e.g. installed at the headend or else where with a connection to the internet

▌ Clients located on installer's smartphone / tablet (Android or iOS version) with internet access (temporarily also offline usage possible)

▌ Node/Amp registration by scanning component depending QR codes (mapping file can be extended)

▌ 1 QR Code per node/amp, 1 QR Code per FOSTRA-F module (optional)

▌ Automatic inventory and asset control

▌ Topology or list view of installed components and given dependencies (signal path)

▌ Parent device function enables view of complete link, from headend to subscriber

DELTANET FOSTRA-F - OVERVIEW

The core of DELTANET FOSTRA-F is a MySQL/MariaDB based database running on a Linux server platform. This can be hosted on the Head End Controller (HEC2191) or on a (customer supplied) centralized server system (also running as a virtual machine). The database grants access to device related information of each node/amp, such as name, address and type. In addition it offers control to type dependent parameters, such as US related ingress control (main aspect), DS on/off, burst mode on/off, Eco mode or OMI settings.

Each installed device, which shall be remote controlled, is hosting an FSK receiver, the FOSTRA-F module. Interface between the database, respectively GUI for user access, and the FSK- receiver is the HEC2191. The HEC2191 acts in any case as the RF gateway between database and node/amp. In addition, it can carry and operate as well the database and GUI for initial or smaller networks (recommended for networks up to 500 nodes/amps). For bigger networks we recommend the usage of a centralized, database server platform, keeping all entries and access for configuration and control to one central point.

Node/Amplifier with or without
FOSTRA-F module

Database on HEC2191 or
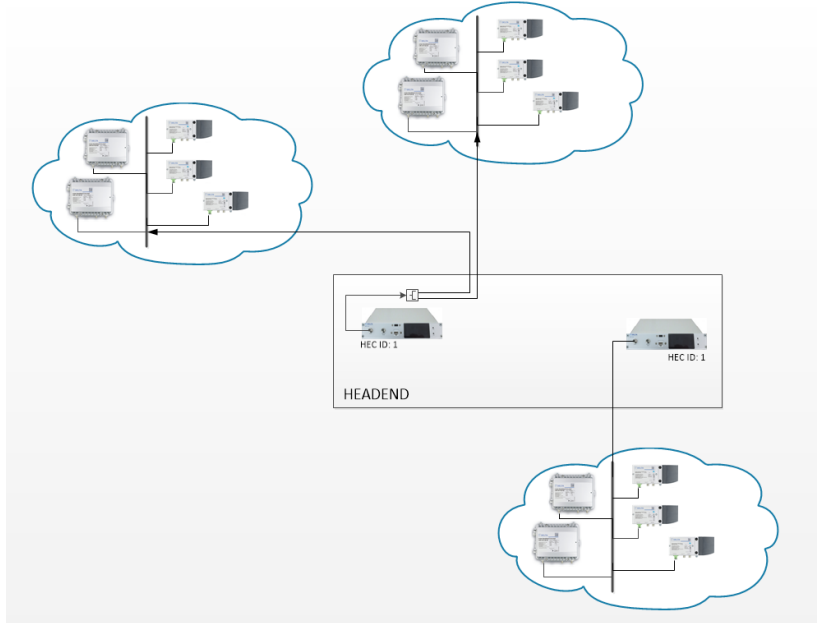dedicated server system

Prerequisites - All you need is …

▌ A hardware platform to host the MySQL/MariaDB FOSTRA-F database. This can be the HEC2191 or a Linux based (customer supplied) server system

▌ Our DELTANET software incl. a software license to manage a dedicated number of nodes/amps. Standard licenses to handle 32, 500, 1000 or 5000 entries are available. For larger project based setups, please get in direct contact

▌ An appropriate number of FOSTRA-F modules to be installed in corresponding nodes/amps

▌ Optional: ScanApp for smart registration of nodes/amps during installation and therefore provision of a map based network view and automatic inventory

DELTANET FOSTRA-F DESIGN RECOMMENDATION
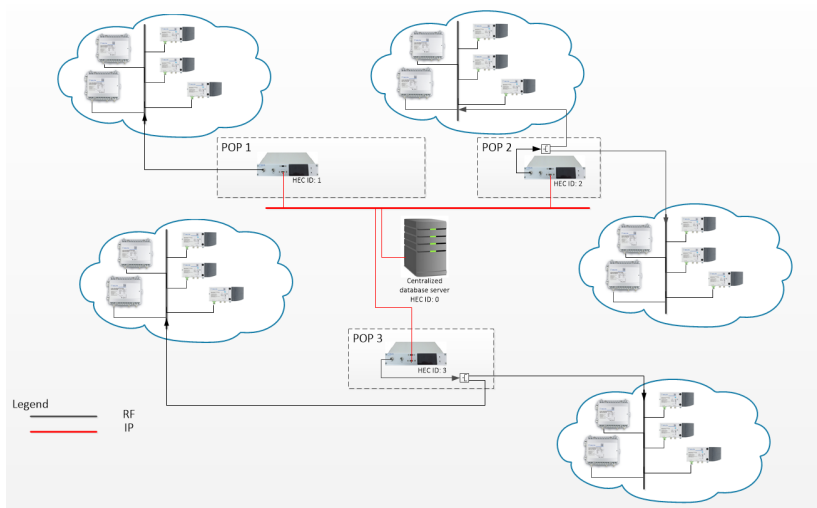
Standalone approach

Recommended for

❚ Small sized networks: HEC in standalone mode

❚ Database runs on HEC and HEC acts as RF gateway between DELTANET and FOSTRA-F modules.

Centralized Server approach

Recommended for

❚ Medium/big sized networks: Centralized server which hosts the database.

❚ HEC acts as RF gateway only

DELTA Electronics

HEC2191 - HEAD END CONTROLLER (HEC) FOR DELTANET FOSTRA-F

Cost-effective remote control system for HFC/RFoG nodes/amps

❚ HEC in operation with DELTANET FOSTRA-F Software acc. to EN 60728-14

❚ Compact FSK-transmitter as desktop unit, with included mounting kit also as 1RU 19"device

❚ Variable Transmit Frequency Range 860.480-879.515 MHz

❚ Web Server with DELTANET application, Linux operated

❚ 1 RF output (selectable on front or rear panel) with RF test point

❚ Electronic level adjustment of output

❚ 100 Base-T RJ-45 connection, USB-port for serial connection

❚ Including basic license for 32 FOSTRA-F modules (subscribers), expandable to 500, 1000 or 5000 FOSTRA-F modules

❚ HEC can host the MySQL database. Alternatively the data base can be installed on an external server, thus one or multiple HECs will act as RF gateway only. Recommended for more than 500 subscribers

FOSTRA-F Microreceiver for Fibre Nodes and Amplifiers

❚ Remote control functions: DS ON/OFF, Burst Mode ON/OFF, Ingress Detection Switch 0/6/45 dB, Eco Mode on/off, OMI adjustment *

❚ Easy integration into DELTANET via Smart Phone application DELTANET ScanApp

❚ FSK-based, robust, no return way necessary

❚ FSK signal can be in between two SC-QAM carrier – not additional bandwidth consumption or frequency blocking
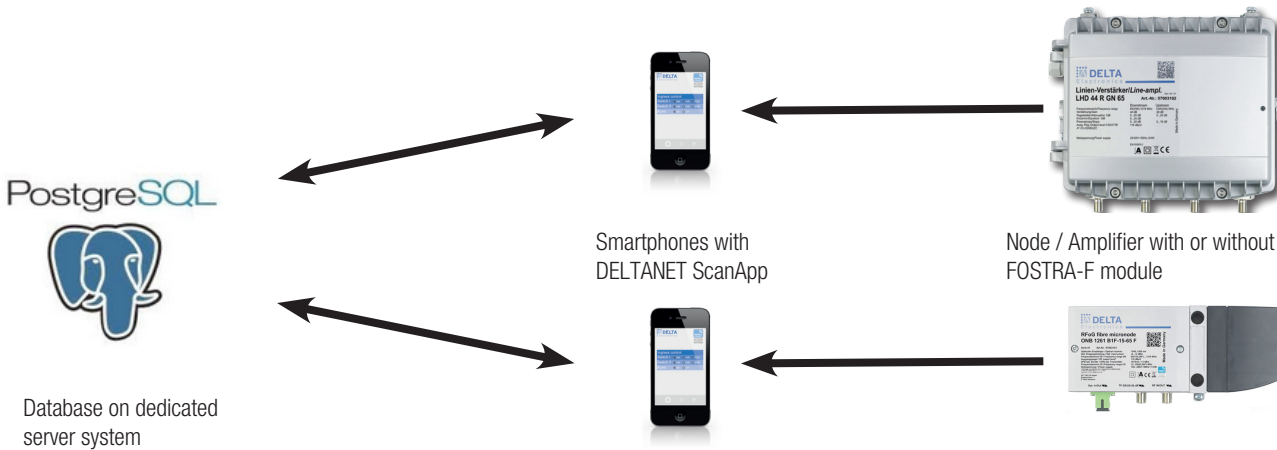
  * whole functionality depending to amp/node type

Type		HEC 2191	FOSTRA-F
Application		DELTANET / FOSTRA-F	ONH, ONB, BKD, LHD, NVD types
Item No.		57003259	57001981 / 57003244 / 57003245 / 57003663
TX-frequency	MHz	860.480-879.515 MHz (other frequencies on request)	868 / 862 / 861.7-862.3; 868-868.6; 869.7 -870.3 MHz (other frequencies on request)
Monitoring-Status LED		green (=Tx ON)	green: 0 / 6 / 45dB, DS ON/OFF, Burst Mode ON/OFF
Bandwidth	kHz	200	200
Spurious	dBµV	< 10	< 10
Distortion	dB	> 66	-
Dynamic-Input level	dBµV	-	30...75
Transmitting level	dBµV	1 x 69 ... 100 (set by software)	-
RF test point		1 x -20 dB	-
Data Speed	Bps	9600	9600
Local Interface		100 Base-T RJ-45 and USB (as serial port)	RS-232
Power supply	V~/W	185 ... 265 AC / 5 DCV (1A) / < 5	6-24V / < 0.4W@24V / <0.18W@12V
Dimensions	mm	220 x 140 x 1RU (chassis only) 19" x 140 x 1RU (with mounting frame)	25 x 24 x 8
Weight	kg	< 1.0	0.02
IP protection class		IP 20, Indoor	

DELTANET SCANAPP - OVERVIEW

Registration of new nodes/amps can be done on site during installation via DELTANET ScanApp, available for Android and iOS. Simply scan QR codes of the node/amp and (optional) corresponding FOSTRA-F module and transfer device related data, together with geo positioning data and other related data, the ScanApp database via the internet.

❙❙ The ScanApp (hosted on a smart phone or tablet) provides an automated collection of your management relevant data of the installed device, incl. location data, installation time, installer's ID and picture(s)

❙❙ Systematic recording of location data and documentation of most important parameters of your network devices during installation and automated cross-checks (duplicate used wavelength or port usage) helps the installer to avoid errors. Automatic transfer into a centralized database shows the operator current status of network deployment incl. current topology overview

❙❙ ScanApp runs on Android and iOS

Smartphones with
DELTANET ScanApp

Node / Amplifier with or without
FOSTRA-F module

Database on dedicated
server system

DELTA
Electronics

DELTANET PRODUCT OVERVIEW

Type	Item No.	Description
HEC 2191	57003259	Head End Controller incl. basic 32 user license
DELTANET SNMP Module	57002418	Management by SNMP
DELTANET License 500	57002423	License for 500 FOSTRA-F modules
DELTANET License1000	57002424	License for 1000 FOSTRA-F modules
DELTANET License5000	57002425	License for 5000 FOSTRA-F modules
FOSTRA F	57001981	FSK module 868.3 MHz
FOSTRA F 862	57003244	FSK module 862 MHz
FOSTRA F TUNEABLE VER	57003245	For a vertical mount 861.7 – 862.3 MHz / 868.0 – 868.6 MHz / 869.7 – 870.3 MHz
FOSTRA F TUNEABLE HOR	57003663	For a horizontal mount 861.7 – 862.3 MHz / 868.3 – 868.6 MHz / 869.7 – 870.3 MHz
DELTA SCANAPP BASIS	57003559	ScanApp Server Software incl. license for 500 subscribers
DELTA SCANAPP +500 LIC	57003560	ScanApp license for additional 500 devices
DELTA SCANAPP +1000 LIC	57003590	ScanApp license for additional 1000 devices
DELTA SCANAPP +5000 LIC	57003591	ScanApp license for additional 5000 devices
DELTA SCANAPP ANDROID	57003561	ScanApp Mobile App for Android
DELTA SCANAPP IOS	57003562	ScanApp Mobile App for IOS