# DELTANET OVERVIEW - DELTA´S SMART REMOTE CONTROL SOLUTION

▐ DELTANET – the smart way of collecting and getting device specific information during the installation of your network, resulting automatically in 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). On site configuration of Delta devices via WLAN access.

▐ DELTANET consists of three applications, DELTANET FOSTRA-F (together with the HEC unit), DELTANET SCANAPP and DELTANET CONFIGAPP which can operate independent or jointly in a system:

▐ DELTANET FOSTRA-F: The smart approach for the demand of a robust remote control tool for ingress management and others functions (depending on device type)

▐ DELTANET SCANAPP: The mobile device based app (available for Android and iOS) supports you during the installation of your network. It registers your nodes / amps online with the help of QR codes (collecting data for the inventory), and creates, during the installation, already a topology map based overview of your network via a parent-child relationship. Additionally, the app can do a complete upstream path cross checks for duplicated used wavelengths in an RFoG environment and collects images and documents during the on-site installation. Available as online information, such data are also quite beneficial for later maintenance and service tasks.

▐ DELTANET CONFIGAPP: The mobile device based app (available for Android and IOs) enables on-site configuration of Delta devices via WLAN access. WLAN access is granted by using the FOSTRA-C module during on-site installation. Thus the configuration of each node/amp of your network can be saved and stored centrally.
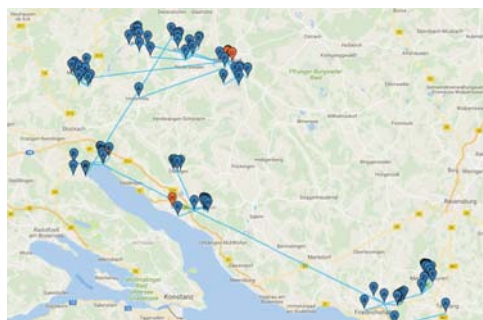
DELTANET FOSTRA-F

▐ 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 error analysis in collaboration with your umbrella management system

▐ Robust and reliable Linux based platform, available as standalone or centralized database solution

▐ Access via web GUI (http(s)), REST API

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

▐ Pay as you grow licensing scheme
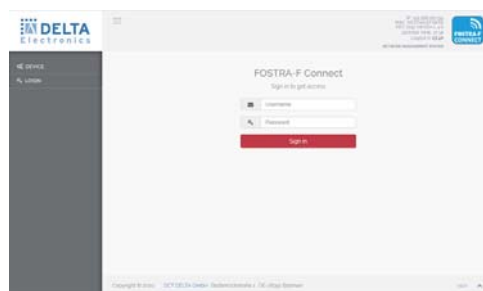
DELTANET SCANAPP

▐ Client/Server approach.Server e.g.installed at the headend or other ocation with a permanent connection to the internet

▐ Client app located on installer's mobile device Android and iOS supported), offline data will be synchronized as soon app is online again

▐ Node/Amp registration by scanning QR codes available on each device (corresponding mapping file can be extended)

▐ 1 QR code per node/amp, 1 QR code per FOSTRA-F module if installed

▐ Integrated link test between HEC database and FOSTRA-F module

▐ Automatic inventory and asset control

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

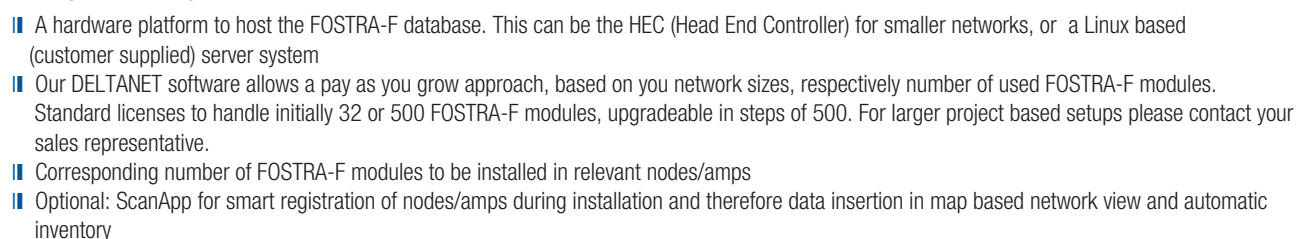▐ Parent device function enables view for complete upstream link, from chosen device to headend

DELTANET CONFIGAPP

▐ App located on installer's mobile device (Android and iOS supported)

▐ FOSTRA-C module to be plugged into corresponding slot of amp / node

▐ FOSTRA-C module acts as a WLAN access point

▐ WLAN access to the device via FOSTRA-C

▐ Configuration can be stored/recalled on the mobile device, incl. import/export of the data

DELTA
Electronics

DELTANET FOSTRA-F

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

In each installed device - which shall be controlled, an FSK receiver plug-in is put in - the FOSTRA-F module. The gateway between the database, respectively GUI for user interaction and the FSK receiver, is the HEC (Head End Controller). For initial setups or smaller networks, the HEC contains and operates the database as well as user interface for operational tasks. (recommended for networks up to 500 nodes/amps). For bigger networks or usage of multiple HECs in an overall network a centralized,-database server platform is recommended to be used for simplified administration and consolidated IT infrastrcuture. This allows a single point of configuration and control approach, although a local access to the dedicated HEC units and their assigned modules is still possible.


Node/Amplifier with
FOSTRA-F module

Database on HEC or
dedicated database server

Prerequisites - All you need is …

❙❙ A hardware platform to host the FOSTRA-F database. This can be the HEC (Head End Controller) for smaller networks, or a Linux based (customer supplied) server system

❙❙ Our DELTANET software allows a pay as you grow approach, based on you network sizes, respectively number of used FOSTRA-F modules. Standard licenses to handle initially 32 or 500 FOSTRA-F modules, upgradeable in steps of 500. For larger project based setups please contact your sales representative.

❙❙ Corresponding number of FOSTRA-F modules to be installed in relevant nodes/amps

❙❙ Optional: ScanApp for smart registration of nodes/amps during installation and therefore data insertion in map based network view and automatic inventory

DELTANET FOSTRA-F DESIGN RECOMMENDATION
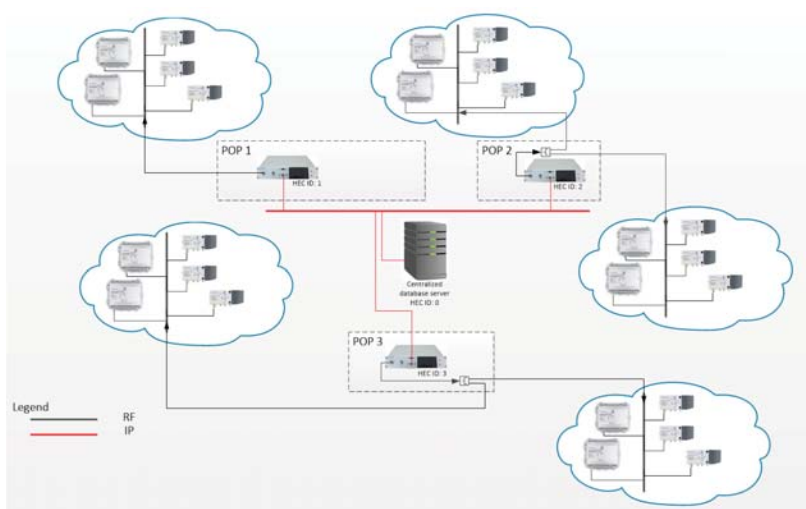
Standalone approach

Recommended for

❚ Smaller sized networks: HEC in standalone mode

❚ Database runs on HEC and HEC acts as RF
single controller to attached Fostra-F modules
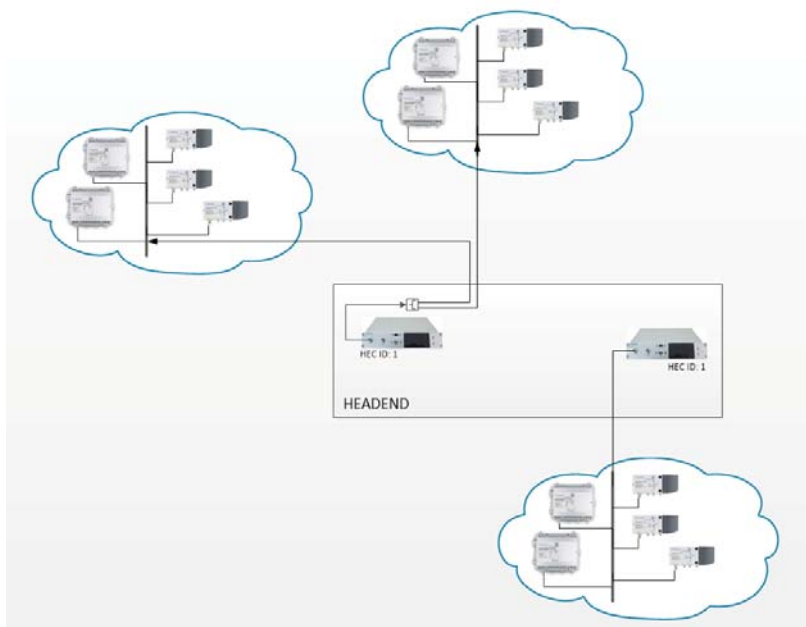
Centralized Server approach

Recommended for

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

❚ HEC acts as RF gateway only

DELTA Electronics

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

FOSTRA-F
CONNECT
NETWORK
MANAGEMENT
SYSTEM

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

▋ HEC in operation with DELTANET FOSTRA-F modules.Protocol implementation based on EN 60728-14

▋ Compact FSK-transmitter as desktop unit, mounting kit for 1RU 19" installation included

▋ Variable Transmit Frequency Ranges. General range is from 860.5..879.5 MHz
  with preselected main center frequencies at 862 MHz, 868.3 MHz and 870 MHz.
  (preselected 300kHz sections as standard)

▋ Web based GUI, running locally or centralized, Linux operated

▋ 1 RF output (selectable on front or rear panel) with RF test point (-20dB)

▋ Electronic level adjustment of output signal

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

▋ Standard HEC includes basic test license for 32 FOSTRA-F modules (subscribers),
  expandable in steps off 500 additional FOSTRA-F modules

▋ HEC can host the database. Alternatively the database can be installed on
  an external server. In this case the (multiple) HECs will act as RF gateways only.

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 smartphone application DELTANET ScanApp

▋ FSK-based, robust, no return path necessary

▋ FSK signal can be configured between two SC-QAM carrier
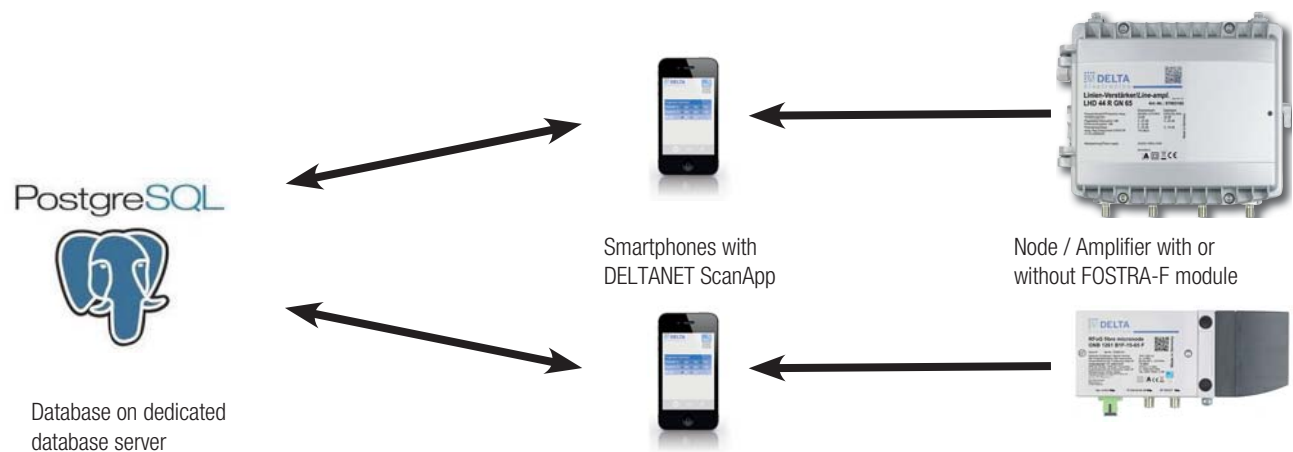 – no additional bandwidth consumption or other frequency block allocation.

  * whole functionality depending on amp/node type

Type		HEC 2191	FOSTRA-F
Application		DELTANET / FOSTRA-F	ONH, ONB, BKD, LHD, NVD types
Item No.		Item number see page 9 bottom	Item number see page 9 bottom
TX-frequency	MHz	860.5-879.5 MHz (other frequencies on request)	862 / 868.3 / 870 MHz, each with a ±300 kHz capture range (other frequencies on request)
Monitoring-Status LED		green (=Tx ON)	green: 0 / 6 / 45dB, DS ON/OFF, Burst Mode ON/OFF
Bandwidth	kHz	120	120
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	4800	4800
Local Interface		100 Base-T RJ-45 and USB (as serial port)	RS-232 (only for debugging)
Power supply	V~/W	200 - 240 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

Registration of new nodes/amps can be done already 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, to the ScanApp database via the internet.

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

❚❚ Systematic collection of location data and documentation of most important parameters of your network devices during installation plus automated cross-checks (duplicate used wavelength or port usage) helps the service teams to avoid errors during installation phases. Automatic transfer into a centralized database allows the operator to look for current status of network deployment incl. current topology overview. In addition the link between FOSTRA-F module (if installed) and corresponding HEC can be verified.

❚❚ ScanApp runs on Android and iOS

Database on dedicated
database server

Smartphones with
DELTANET ScanApp

Node / Amplifier with or
without FOSTRA-F module

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DELTANET CONFIGAPP

DELTANET CONFIGAPP is an application which enables a technician to configure certain DCT-Delta devices by using a mobile device with WLAN capability. Beside the app on the smartphone one requires a FOSTRA-C (C for Configuration) module.
This module needs to be plugged in the socket, where in general the FOSTRA-F module is placed. The FOSTRA-C module acts as a wireless access point.

Accessible data:

❚ Access to all main settings, which can be performed via the push button menu, such as
　- downstream and upstream relevant parameters
　- device specific settings, e.g. eco mode on/off
❚ The app displays information about hardware / firmware / serial number of connected device
❚ Location/address can be assigned
❚ Logfile - shows activities
❚ Import/export of the configuration files enables centralized storage of the data and transfer to other mobile devices.
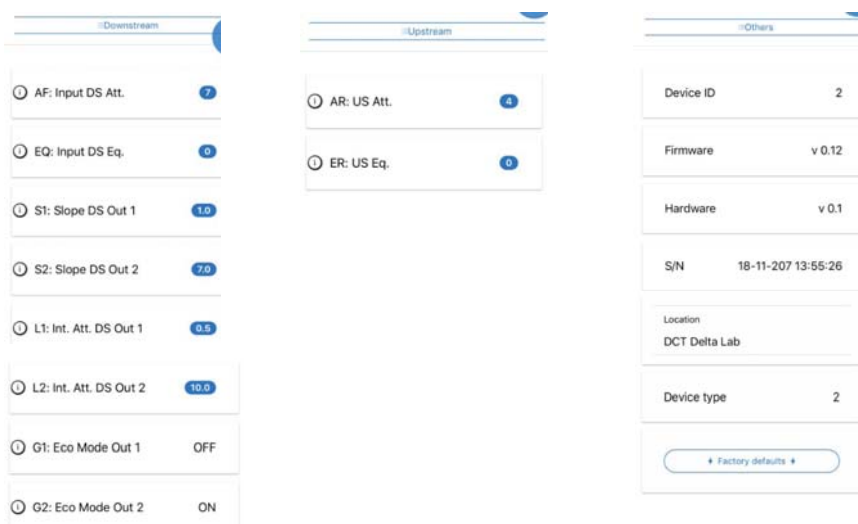
DELTANET PRODUCT OVERVIEW

Type	Item No.	Description
HEC 2191	57003259	Head End Controller incl. basic 32 user license
DELTANET license extension +500	57005352	Upgrade license, to manage additional 500 FOSTRA-F modules
FOSTRA F V2 868.3 VER	57004089	FSK module 868.3 MHz
FOSTRA F V2 862 VER	57004088	FSK module 862 MHz
FOSTRA F V2 Tuneable VER	57003909	For a vertical mount 861.7 – 862.3 MHz / 868.0 – 868.6 MHz / 869.7 – 870.3 MHz
FOSTRA F V2 Tuneable HOR	57003908	For a horizontal mount 861.7 – 862.3 MHz / 868.3 – 868.6 MHz / 869.7 – 870.3 MHz
FOSTRA C VER	57002143	WiFi Config Module for Fostra-F Connect.
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