Fibre optic

Fracarro has over 15 years experience

shaping the future

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Thanks to Fracarro's experience, acquired over 15 years in designing and producing fibre optic solutions, our R&D department has developed new technologically advanced products that reduce installation time and costs.
The new fibre transmitters and receivers can be used for the distribution of satellite and terrestrial signals over standard single mode fibre and are ideal for covering long distances and repositioning system headends. Therefore, their main target markets are: holiday villages and big hotels, skyscrapers, airports, prestigious old buildings, protected areas and installations that require remote headends.

Fibre optic advantages

▸ Only one fibre required for all signals (SAT, DTT, analogue, CCTV, ethernet etc.)

▸ Low power consumption, low impact on the environment

▸ Immune to electromagnetic interference

▸ Ideal for long distance distribution

▸ Electrical isolation between equipment

▸ Resistant to water and humidity

New OPT Series

The new OPT series fibre range is composed of 4 products. OPT-TX51 transmitter converts and distributes terrestrial bandwidth and 4 satellite polarities using only 1 fibre, while OPT-RX51 receiver converts these terrestrial and satellite signals back.

The OPT-TX54 and OPT-RX54 products provide a more cost effective solution, 4 satellite polarities and terrestrial bandwidth are transmitted using 4 fibres. These new products enhance the existing fibre optic range that include optical splitters, transmitters and receivers.

Main specifications

▸ 5 inputs, DTT conversion embedded

▸ Signal transmission in 3rd window

▸ Ideal for extending existing MSW installations

▸ Possible SAT and DTT equalisations before E/O conversion using an AMP9254A

▸ Analogue channels (TV/CCTV) supported

▸ Receivers can be powered from STB

▸ AUX bidirectional optical IN/OUT in 2nd window for:

- Transmission of more analogue channels

- Remote feed for additional programs

- Remote CCTV streaming

- Ethernet networking using the same fibre

▸ OPT-54 products were developed for fibre optic networks where splicing costs are not a critical point of the installation

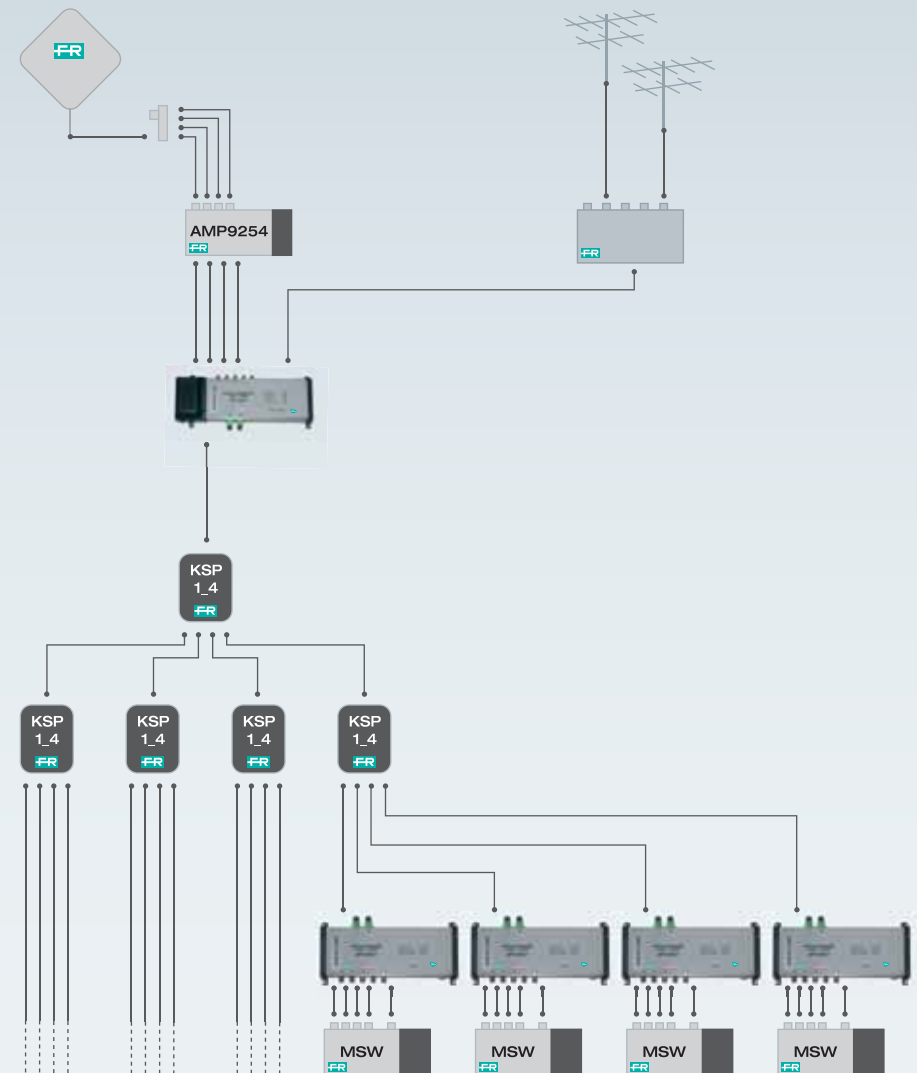FRACARRO

Basic installation example DTT + SAT

Typical installation for the distribution of satellite and terrestrial signals in a single fibre installation.
This enables the transmission of the full SAT bandwidth, DTT channels and up to 8 analogue channels.*

Possibility to split for up to 32 users.
For the user OPT-RX51 SAT outputs are seen as LNB outputs and can be supplied from a STB.

* For further details please see the simple designing table inside the user manual.
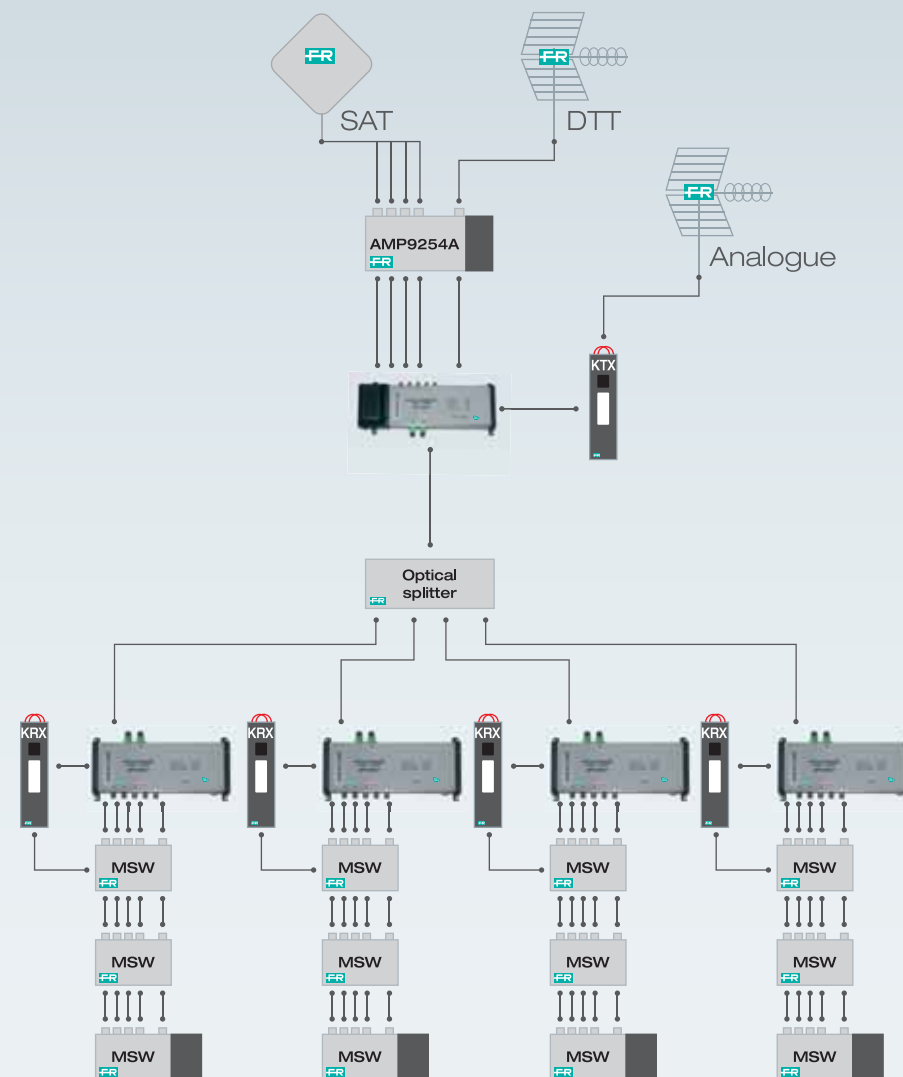
Installation example

Basic application DTT + SAT

Multi-channel analogue TV installation

In this configuration auxiliary inputs/outputs are used for additional fibre optic transmitters and receivers.

In particular an OPT-TX51 has to be connected to a KTX or HTX and an OPT-RX51 to a KRX. This installation can manage up to an additional 80 analogue channels.

Installation example

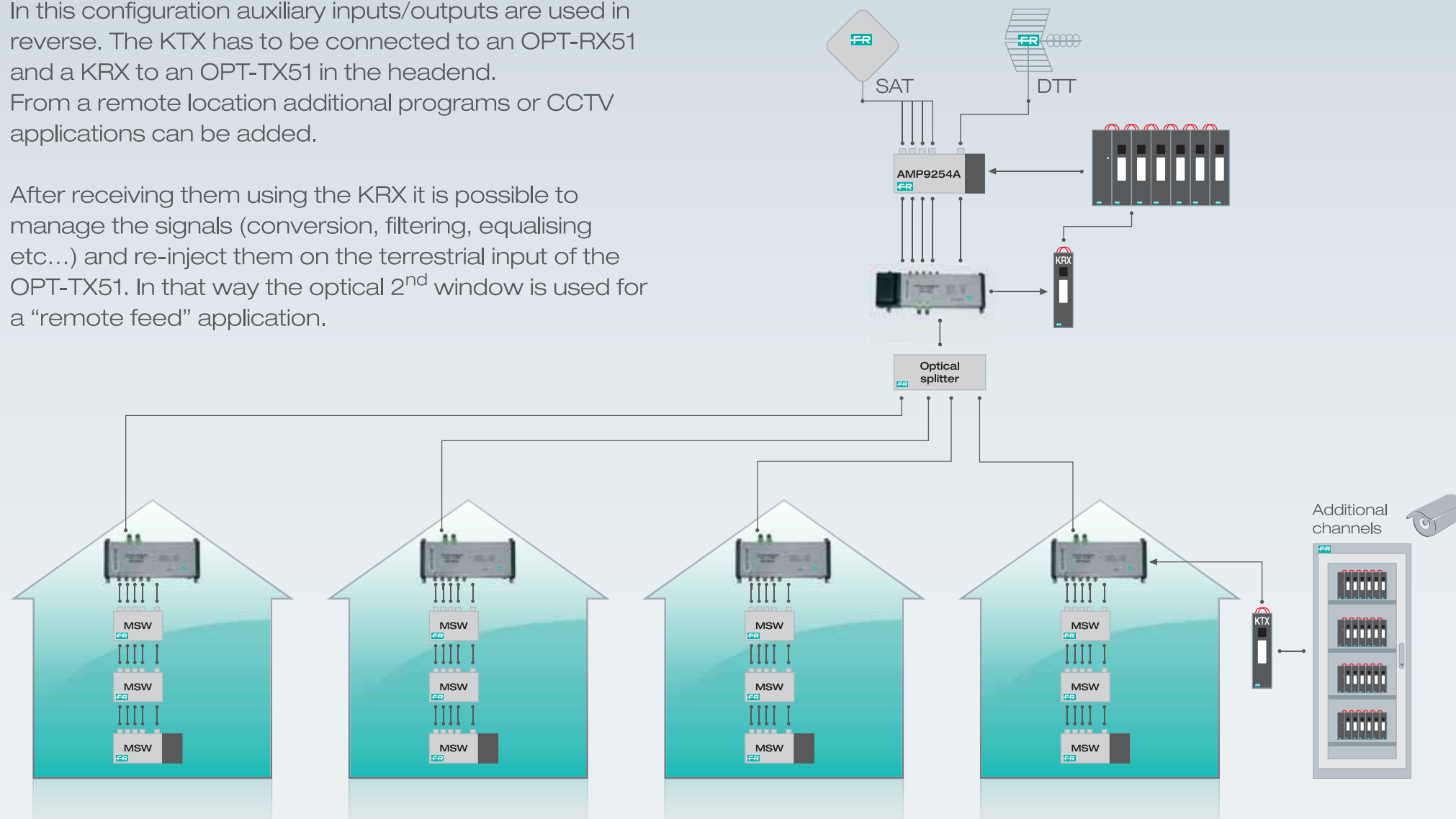### Multi-channel analogue TV application

Remote feed/CCTV

In this configuration auxiliary inputs/outputs are used in reverse. The KTX has to be connected to an OPT-RX51 and a KRX to an OPT-TX51 in the headend.
From a remote location additional programs or CCTV applications can be added.

After receiving them using the KRX it is possible to manage the signals (conversion, filtering, equalising etc…) and re-inject them on the terrestrial input of the OPT-TX51. In that way the optical 2nd window is used for a "remote feed" application.

Installation example

Remote control room

SAT

DTT

AMP9254A

KRX

Optical splitter

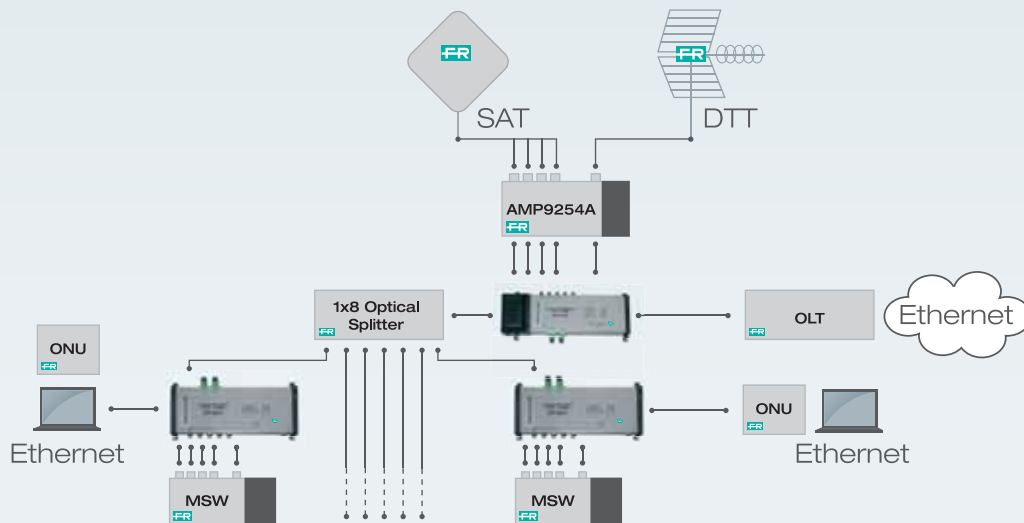Additional channels

MSW

MSW

MSW

KTX

Ethernet installation

The 2nd optical window, through the auxiliary SC/APC connectors, can also be used for ethernet applications. As the fibre structure is a PON/GPON (Gigabit Passive Optical Network) it is possible to use one OLT (Optical Line Terminal) in a Headend and multiple ONU's (Optical Network Unit) close to the end user.

In this way only one fibre transmits both TV and Ethernet signals.

Installation example

Ethernet application for PON (Passive Optical Network)

Technical data

Item (code)		OPT - TX51 (270689)	OPT - TX54 (270691)
Inputs/Outputs			
RF inputs	No.	4 SAT + 1 TV	4 SAT + 1 TV
Optical outputs	No.	1	4
Auxiliary input/output	No.	1	-
Optical output/auxiliary connector	type	SC/APC	SC/APC
General Parameters			
Wavelength	nm	1,260-1,600	1,260-1,600
Output power	dBm	10	4
Bandwidth	TV	47 - 862MHz	47 - 862MHz
	SAT	950 - 2200MHz	950 - 2200MHz
Gain (TX51+RX51)	dB	4	4
Flatness (TX51+RX51)	dB	+/-2	+/-2
LNB power supply@14V	mA	300	300
Operating temperature	°C	-10 to +55	-10 to +55

Item (code)		OPT - RX51 (270690)	OPT - RX54 (270692)
Inputs/Outputs			
Optical inputs	No.	1	4
Auxiliary input/output	No.	1	-
RF outputs	No.	4 SAT + 1 TV	4 SAT + 1 TV
Optical input/auxiliary connector	type	SC/APC	SC/APC
General Parameters			
Wavelength	nm	1,260-1,600	1,260-1,600
Input power	dBm	-12 to +5	-12 to +5
Bandwidth	TV	47 - 862MHz	47 - 862MHz
	SAT	950 - 2200MHz	950 - 2200MHz
Gain (TX51+RX51)	dB	4	9
Flatness (TX51+RX51)	dB	+/-2	+/-2
Power consumption @ 14V	mA	240	240
Operating temperature	°C	-10 to +55	-10 to +55

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