TECHNICAL SPECIFICATION

Frequency	80 GHz (71-76 GHz / 81-86 GHz)						
Supported configurations	(1+0), (1+1), (2+0), (2+0 XPIC)						
Modulation schemes	4 / 16 / 32 / 64 / 128 / 256 QAM with ACM						
Traffic Interfaces	2 x 10 GBps optical * / 4 x GE electrical / optical (*also 2.5 GBps configurable)						
Output power (dBm) at point C'*	Channel Spacing						
	62,5 MHz	125 MHz	250 MHz	500 MHz	750 MHz	1,000 MHz	2,000 MHz
4 FQAM / 4 HQAM / 4 SQAM / 4 QAM	20	20	20	20	20	20	20
16 SQAM / 16QA	17	17	17	17	17	17	17
32 QAM	15	15	15	15	15	15	15
64 QAM	15	15	15	15	15	15	15
128 QAM	14	14	14	14	14	14	14
256 QAM	13	13	13	13	13	13	-
Receiver sensitivity ar BER 10-6 at point C (1+0 conf., RF filter losses included)							
4 FQAM / 4 HQAM	-	- / -80	-79.5 / -76.5	-76.5 / -73.5	-74.5 / -71.5	-73 / -70	-70 / -67
4 SQAM / 4 QAM	-80 / -77.5	-77 / -47.5	-73.5 / -71.5	-70.5 / -68.5	- 68.5 / -66	-67 / -65	- 64 / -62
16 SQAM / 16 QAM	-74 / -71.5	-71 / -68.5	-68 / -65	- 65 / -62.5	- 62.5 / -60	-61.5 / -58.5	-58.5 / -56
32 QAM	-68.5	-65.5	-62.5	-59.5	-57	-55.5	-53
64 QAM	-65.5	-62.5	-59.5	-56.5	-54	-52.5	-50
128 QAM	-62.5	-59.5	-56.5	-53.5	-51	-49.5	-46.5
256 QAM	-59.5	-56.5	-53.5	-50.5	-48	-47	-
Frequency stability	±5 ppm						
RTPC	Up to 20 dB in 1 dB steps, software programmable						
ATPC	Up to 20 dB range implemented in 1 dB steps						
ODU connector	RJ45 or SFP Optical Plug-in						
Management interfaces	In-band or out-band management						
Dimensions ODU (WxHxD)	252 x 363x 117 (mm) 9,9 x 14,3 x 4,6 (in)						
Power supply	PoE or separated power feeding						
Power consumption (per terminal)	60W in 1+0 configuration						
Environmental performance							
ODU temperature range	IP67						
ODU weather proofing class	-35°C to +55°C						
Ethernet characteristics	MAC address switching, ageing and learning VLAN / VLAN stacking (IEE 802.1ad-QinQ) Ethernet QoS (IEEE 802.1p) Complete H-QoS support Flow Control (IEEE 802.3x) RMON Statistics (RFC 2819) LLF (Link Loss Forwarding) ETH OAM (IEEE 802.1ag / 802.3ah / ITU-T Y.1731) G.8261/8262/8264 SyncE / IEEE 1588 v2 Selective QinQ based on VLAN and 802.1p priority CT-OS based feature set							
Compliant with	ETSI EN 302 217 / FCC CFR 47, Part 101 and Part 15						

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BROADCASTING & TELECOM

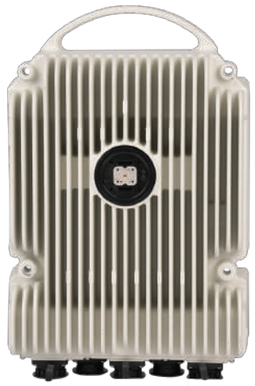
UFUK link FO80HDX

80 GHz RADIO LINK TERMINAL

From 10 to 20 GBps E-Band Full Outdoor

Whether in mobile, fixed or private networks, the E-band millimetre wave solution represents a fundamental technology tool bridging the gap between fibre high capacity systems and flexible cost effective wireless transmission.

TURKISH AEROSPACE
SUBSIDIARY



10 GBps FULL-DUPLEX UHC IN SINGLE UNIT

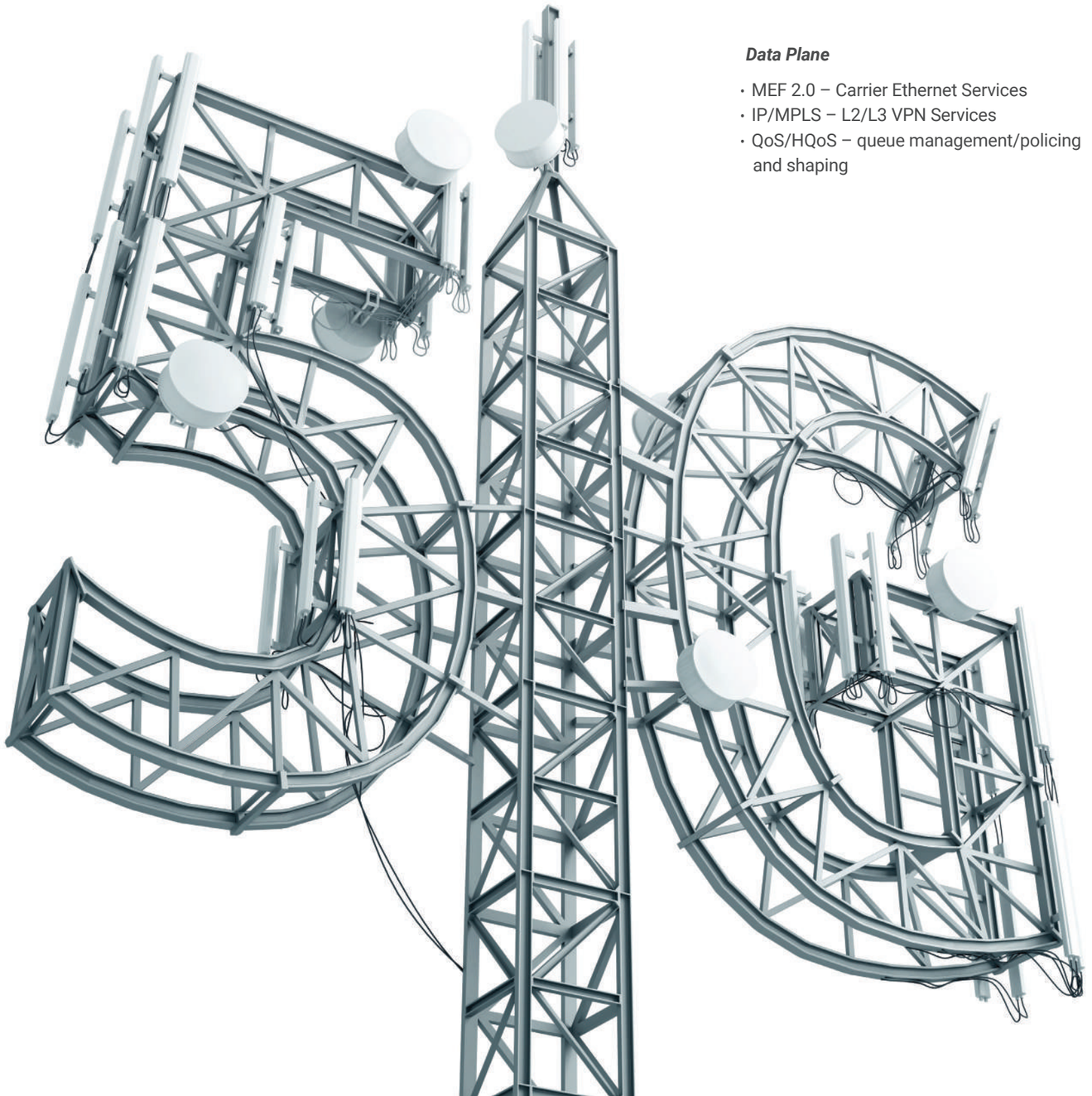
20 GBps IN A 2+0 XPIC CONFIG

UFUK-FO80HDX provides fibre like capacity, highest deployment flexibility and homogeneous operational behaviour as traditional microwave, allowing operators to fully liaise on existing knowledge and skills, minimizing introduction costs, while modernizing the transport network.

UNIVERSAL PRODUCT ARCHITECTURE

Millimetre wave radio products have evolved in terms of functionality and physical arrangements to cover in an effective and efficient way they can be employed in any application.

UFUK-FO80HDX utilizes at its core the CT-OS operating system based over three major components:



Network Management Plane

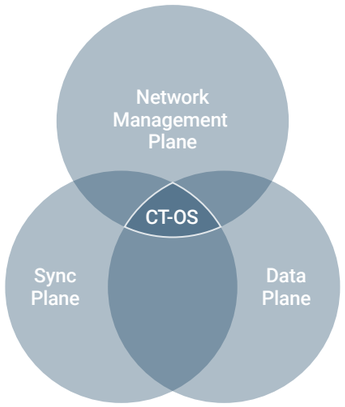
- NETCONF/Yang in SDN deployment
- SNMP v1/v2c/v3, HTTPs, SSH, SFTP
- RADIUS for centralized user management

Synch Plane

- Synchronous Ethernet
- ITU-T G.8275.1 Profiles (T-BC)
- 1 PPS in/out port

Data Plane

- MEF 2.0 – Carrier Ethernet Services
- IP/MPLS – L2/L3 VPN Services
- QoS/HQoS – queue management/policing and shaping



MAIN FEATURES

- CT-OS based platform
- Up to 10 GBps Throughput with single unit
- Integrated XPIC circuitry (2+0 up to 20 GBps)
- Channel bandwidth up to 2,000 MHz
- BPSK/4/16/64/128/256 QAM modulation schemes
- Hitless Adaptive Coding Modulation and Bandwidth
- Integrated flat antenna (ETSI only)
- AES128/256 Encryption
- 10 Gigabit and Gigabit interfaces
- L1 link aggregation
- PoE and dedicated power feeder connectors
- Multi Carrier Aggregation (Full Outdoor Aggregation with ALFOplus2; Split Mount with AGS20 ODUs)
- Network Management System: NMS5
- SDN Microwave Domain Controller: SM-DC

LAYER 2 MAIN FUNCTIONALITIES

- MEF 2.0 certified
- 8 queues with flexible scheduler (Strict Priority, WRR and mixed)
- 4 level hierarchical scheduler (H-QoS)
- Flexible QoS definition based on VLAN, IPv4, IPv6, MPLS exp bits
- Per queue WRED congestion avoidance
- Flow Based Ingress Policing (CIR & EIR definition)
- Egress shaping
- Ethernet Ring Protection G.8032
- RMON statistics per service VLAN stacking (IEEE 802.1ad QinQ)
- Link Aggregation IEEE 802.3ad
- Ethernet OAM 802.3ah/802.1ag/Y.1731
- Jumbo Frames up to 12 KBytes