

# TEKO DAS Platform US

Six-band, medium-power remote units



## MODELS:

### TRM7E8AE19HAWX23AT TRM7E8AE19HAWX23DT

The TRM7E8AE19HAWX23AT and TRM7E8AE19HAWX23DT six-band, medium-power remote units, operating in the SMR700 extended, SMR800+AMPS, E-PCS, AWX, and WCS2300 bands, belong to the TEKO platform, the most advanced distributed antenna system (DAS) in the industry.

The TEKO platform is a versatile, modular, multi-technology platform designed to offer flexible and reliable wireless coverage and capacity for both indoor and outdoor environments.

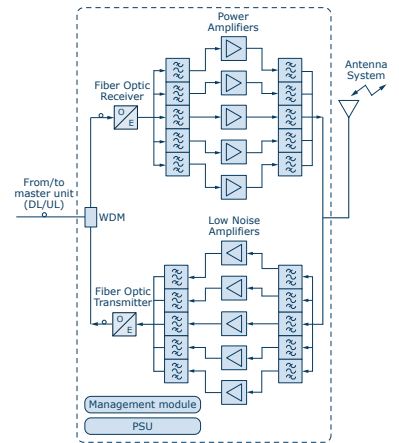
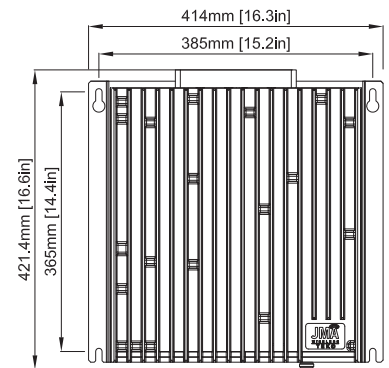
TEKO medium-power remote units have been expressly conceived for high quality of service and easy set-up:

- Automatic Gain Control (AGC) on the optical link with the Master Unit, for constant gain independently from optical losses
- Linear Power Amplifiers expressly designed for IMD reduction over the entire bandwidth
- Automatic Level Control (ALC) in the UL path independent for each band, for maximum quality of service
- RF Antenna Combiners expressly designed for Multi-Operator functioning, providing high insulation and low passive intermodulation (PIM)
- Wavelength Division Multiplexing (WDM) for Tx/Rx communications with the Master Unit over the same optical fiber
- Optical remote link up to 20km (12.4miles)
- New and innovative mechanical design, for easy installation and professional visual impact
- Optional kit providing IP66 rating, for installation in harsh environments.

TEKO remote units are available in a wide range of different executions as for:

- Single-band – Multi-band,
- Operating frequencies from 380 to 2700MHz, complying with all the most important international standards for Mobile Communications and Public Safety,
- Different power classes.

They represent the ideal solution for cellular coverage extension and capacity distribution in any indoor application, campuses, long tunnels as well as in several outdoor scenarios.



Block diagram of the six-band remote unit

## Warning

This is NOT a CONSUMER device. It is designed for installation by FCC LICENSEES and QUALIFIED INSTALLERS. You MUST have an FCC LICENSE or express consent of an FCC Licensee to operate this device. Unauthorized use may result in significant forfeiture penalties, including penalties in excess of \$100,000 for each continuing violation.

## Warning for Public Safety bands

This is NOT a CONSUMER device. This is a 90.219 Class B signal booster. It is designed for installation by FCC LICENSEES and QUALIFIED INSTALLERS. You MUST have an FCC LICENSE or express consent of an FCC Licensee to operate this device. You MUST register Class B signal boosters (as defined in 47 CFR 90.219) online at [www.fcc.gov/signal-boosters/registration](http://www.fcc.gov/signal-boosters/registration). Unauthorized use may result in significant forfeiture penalties, including penalties in excess of \$100,000 for each continuing violation.

## Distributed Antenna System with 7E, 8AE (SMR800+AMPS), 19H, AWX, 23, medium-power remotes

## Multi-carrier optical DAS specifications

Operating Bands		SMR700 extended	SMR800+AMPS	E-PCS	AWX	WCS
Uplink operating frequency band		698–716MHz 776–798MHz	814–849MHz	1850–1915MHz	1695–1780MHz	2305–2315MHz
Downlink operating frequency band		728–768MHz	859–894MHz	1930–2020MHz	2110–2200MHz	2350–2360MHz
Downlink Output Power <sup>(1)</sup> GSM/EDGE/TDMA/iDEN EV-DO CDMA/WCDMA LTE	1 carrier	33dBm	33dBm	33dBm	33dBm	33dBm
	2 carriers	30dBm	30dBm	30dBm	30dBm	30dBm
	4 carriers	27dBm	27dBm	27dBm	27dBm	27dBm
	16 carriers	21dBm	21dBm	21dBm	21dBm	21dBm
Spurious emissions and intermodulation products		< -13dBm				
UL setting 1 (0 dB digital attenuation)	Noise Figure	6dB	6dB	5.5dB	5dB	5dB
	IIP3	-17dBm	-17dBm	-17dBm	-17dBm	-17dBm
UL setting 2 (5 dB digital attenuation)	Noise Figure	7dB	7dB	6.5dB	6dB	6dB
	IIP3	-12dBm	-12dBm	-12dBm	-12dBm	-12dBm
UL setting 3 (10 dB digital attenuation)	Noise Figure	10.5dB	10.5dB	10dB	9.5dB	9.5dB
	IIP3	-7dBm	-7dBm	-7dBm	-7dBm	-7dBm
UL setting 4 (15 dB digital attenuation)	Noise Figure	15dB	15dB	14.5dB	14dB	14dB
	IIP3	-3dBm	-3dBm	-3 dBm	-3dBm	-3dBm
Downlink RF gain, in Master Unit Tx		38dB	38dB	38dB	38dB	38dB
Uplink RF gain, out Master Unit Rx		47dB	47dB	47 dB	47dB	47dB
Pass band ripple		± 1.5dB	± 2dB	± 1.5dB	± 1.5dB	± 1.5dB
Total processing delay (each path)/1m fiber		0.5µs				

## Remote unit specifications

Commercial Code	TRM7E8AE19HAWX23AT	TRM7E8AE19HAWX23DT
Optical output power	6dBm	
Optical connector	SC-APC	
Fiber type	Single mode SMR 9/125	
Optical Link Budget	10dB (AGC)	
Nominal optical input power	+6dBm up to -4dBm	
RF connector	4.3-10 (f)	
RF return loss	13dB	
Operating Wavelength	1550nm ± 5nm	
Operating temperature range	-40°C to +55°C (-40°F to +131°F)	
Cooling	Passive (natural convection)	
Power supply	85–264Vac (50-60Hz)	-72 to -36Vdc
Power consumption	170W	
Dimensions	approx 421.4 x 414 x 145.6mm (16.60 x 16.30 x 5.73in); max volume - heat sinks and connectors included	
Weight	approx 16kg (35.3lbs)	
IP rating	IP32 (box); IP66 (with optional protection kit)	

## DAS supervision and control

Commands	RF on/off - RF attenuation on each DL and UL path - 4 external control ports
Supervision and alarms	Summary - Power Supply - Optical UL and DL failure - RF UL and DL failure - Temperature - Composite output power - 4 external alarm inputs
Remote control	Signalling and supervision over fiber from Master Unit to Remote Unit and vice versa

<sup>(1)</sup> Downlink Output Power measured at antenna port. GSM/EDGE/TDMA and CDMA compliant with CDMA2000-3GPP2 specifications (C.S0051-0) and FCC regulations, 8.5dB PAR; iDEN: compliant with Motorola iDEN®; EV-DO: compliant with CDMA2000/1xEV-DO 3GPP2 specifications (C.S0032-B); WCDMA carriers TM1-64DPCH 60% clipping, 8.5dB PAR, compliant with 3GPP TS 25.143 and FCC regulations; LTE: compliant with 3GPP specifications (TS 36.143) and FCC regulations, 60% clipping, 8.5dB PAR.

All values are typical at 25°C (77°F) and 0dBm received optical power unless otherwise specified