

MTFComm

Data Sheet: MTF DOCSIS System I



Description	DownLink	UpLink
Tx Power	19dBm	19dBm
Bit Rate	10Gbps	4Gbps
Round-trip Range	400m	400m
Modulation	2ASK-MTF™	2ASK-MTF™
Coding Gain	0dB	0dB
Duplexing	TDD	TDD
Sampling Type	RF	RF
ADC	14GHz @ 8bit/sample	14GHz @ 8bit/sample
PAPR	11dB	11dB
Latency	<100µs	<100µs
Noise Margin	10dB	10dB

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Data Sheet: MTF DOCSIS System II



Description	DownLink	UpLink
Tx Power	19dBm	19dBm
Bit Rate	20Gbps	8Gbps
Round-trip Range	400m	400m
Modulation	4ASK-MTF™	4ASK-MTF™
Coding Gain	0dB	0dB
Duplexing	TDD	TDD
Sampling Type	RF	RF
ADC	14GHz @ 9bit/sample	14GHz @ 9bit/sample
PAPR	14dB	14dB
Latency	<100μs	<100μs
Noise Margin	3dB	3dB

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Data Sheet: MTF DOCSIS System III



Description	DownLink	UpLink
Tx Power	19dBm	19dBm
Bit Rate	40Gbps	16Gbps
Round-trip Range	400m	400m
Modulation	16ASK-MTF™	16ASK-MTF™
Coding Gain	0dB	0dB
Duplexing	TDD	TDD
Sampling Type	RF	RF
ADC	14GHz @ 9bit/sample	14GHz @ 9bit/sample
PAPR	17dB	17dB
Latency	<100μs	<100μs
Noise Margin	-9dB	-9dB

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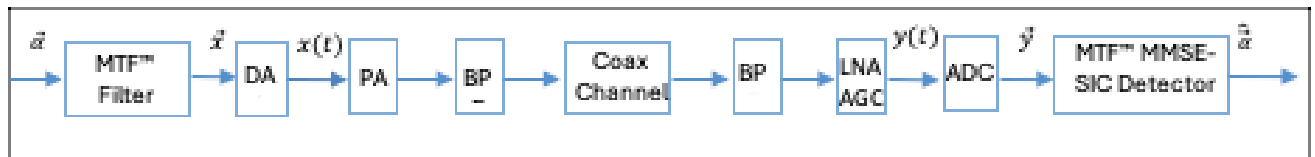


Comparison: MTF DOCSIS Systems vs. Existing DOCSIS Systems

Description	MTF™ Modulation	OFDM Modulation
FFT	No	Yes
FEC Coding & Interleaving	No	Yes
Cyclic Prefix	No	Yes
Up/Down Converters	No	Yes
High Resolution ADC	No	Yes
Phase Noise	No	Yes
IQ Imbalance	No	Yes
Carrier Frequency Feedthrough	No	Yes
Carrier Frequency Offset	No	Yes
Affected by Frequency-selective fading	No	Yes
<100μs	Yes	No



MTF™ System Architecture



Assumption

- Ideal channel estimation to be used in the AGC and in the MTF™ MMSE Filter at Rx.
- PA & LNA are linear and wideband.
- Attenuation of 1.9167dB/200MHz across the channel from 3,900MHz to 7GHz.