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OTMS-II

5-65MHz MULTIPLEX SYSTEM LASER PRO II SERIES

Features / Benefits

- Frequency agility with microprocessor control
- The TWELVE-BAND MULTIPLEX SYSTEM is used to up-convert twelve (5 to 65MHz) bands into one laser transmitter
- Up to twelve model **UC-65** Up-Converter modules can be housed in the model **OTMS-II** Mainframe
- The model **DC-65** Down-Converter module receives and then de-multiplexes the combined bands into twelve separate (5-65MHz) outputs
- Excellent phase noise performance for transmitting of 64 QAM modulated carriers
- Input to output phase lock throughout the entire system
- Excellent dynamic range that typically exceeds the performance of the optical system
- Band edge pilot for each channel to control end to end gain
- High level Image Reject mixers
- Twelve times the available bandwidth per subscriber over a single optical return
- Superior performance while maintaining cost effectiveness
- Modular platform design for efficient usage of space

The **OTMS-II TWELVE-BAND MULTIPLEX SYSTEM** is made up of three key units. they consist of an up-converter model **UC-65**, that multiplexes up to twelve 5MHz to 65MHz return bands into one fiber or coaxial in the frequency band of 4.5MHz to 875MHz, a down-converter model **DC-65** that de-multiplexes the combined band into twelve 5MHz to 65MHz outputs, and the model **OTMS-II** Mainframe that acts as a common platform for both the downstream / upstream converters.

OTMS-II

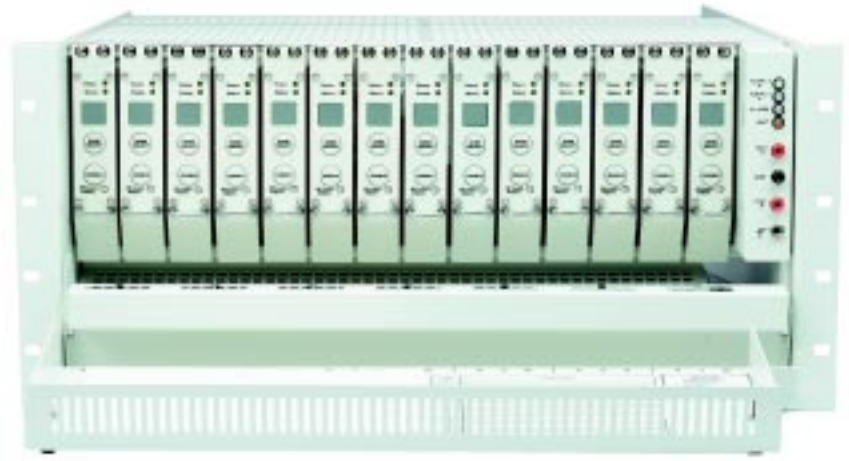
Input Frequency Range…….....…	5 to 65MHz
Output Spectrum (Center Frequency).....	5 to 65MHz
Output Frequency Range …….....	Block 1…….105MHz to 45MHz
	Block 2…….175MHz to 115MHz
	Block 3…….245MHz to 185MHz
	Block 4.....315MHz to 255MHz
	Block 5…….385MHz to 325MHz
	Block 6…….455MHz to 395MHz
	Block 7…….525MHz to 465MHz
	Block 8…….595MHz to 535MHz
	Block 9…….665MHz to 605MHz
	Block10…....735MHz to 675MHz
	Block11……805MHz to 745MHz
	Block12……875MHz to 815MHz
Input RF Level …….....…	+30dBmV per carrier (6 carriers).
Output Carrier Level …….....…….	+42dBmV per carrier. (6 carriers)
Gain …….....…..	+4 to +12dB with front panel control
Internal Pilot …….....…	4.5MHz ±50Hz , -20° to 60°C
Pilot Level …….....….	-5dB relative to a reference carrier of +30dBmV at the input to the up-converter.
Gain Variation with temperature	< 2.5dB. -20° to 60°C compensated by thermal equalizer in the combiner/filter and by AGC in the down-converter.
Phase Noise …….....…..	< -62dBc/Hz @ 1kHz offset
	< -92dBc/Hz @ 10kHz offset
LO Phase Modulation Spurs …….....	< -60dBc
In Block CNR …….....……..	> 58dB for an input carrier of +30dBmV maximum gain in 4MHz bandwidth.
Noise Power Ratio …….....……...	>48dB for input levels between – 46 and – 30dBmV/Hz
Out of Block Noise …….....…	<-70dB relative to a reference carrier of +30dBmV at the input to the up-converter, in a 4MHz bandwidth.
In Block Spurious …….....…	< -60dBc relative to a reference carrier of +30dBmV at the input to the up-converter.
Out Of Block Spurious …….....…	< -58dBc relative to a reference carrier of +30dBmV at the input to the up-converter.
Image Side Band Rejection …….....	>60dBc, 15 to 65MHz
	>55dBc, 5 to 15MHz
Input Return Loss …….....……	>16dB, 5 to 65MHz, 75Ω
Output Return Loss …….....….	>15dB, 45 to 875MHz, 75Ω
Input and Output Connectors …….....	Type F
Composite Distortion …….....…	<-58dBc. Below 6 carriers at +30dBmV at the input to the up-converter.
Mounting …….....…….	**OLSON TECHNOLOGY INC** model **OTMS-II** Chassis. Holding up to 14 **UC** up-converters.
Alarms …….....…	Phase Lock, Power, compatible with OTMF Chassis.

Input Frequency Range	45 to 875MHz
Output Frequency Range	5 to 65MHz
Input RF Level	+15dBmV/Carrier. Six carriers per block, 12 blocks
Output RF Range	+38dBmV/carrier. Six carriers at maximum gain.
Gain	<17 to >23dB by front panel control.
Gain Variation with Temperature	<1.5dB @ 0° to 50°C
Phase Noise	<-92dBc/Hz @ 10kHz offset
LO Phase Modulation Spurs	<-60dBc
In Band CNR	>58dB for an input carrier of +15dBmV maximum gain, in 4MHz bandwidth.
Noise Power Ratio	>46dB for input level between -61 and -45dBmV/Hz.
Out of Band Rejection	>60dBc
Input Return Loss	>12dB from 45 to 875MHz.
Output Return Loss	>15dB from 5 to 65MHz
Test Point Connectors	Type F
Test Point Level	-20 ±1dB relative to the output.
Composite Distortion	>58dBc below six carrier output of +38dBmv.
Amplitude Variation	3dB (5-65MHz)
Mounting	**OLSON TECHNOLOGY INC** model **OTMS-II** rack mount chassis. Half width unit holding up to 14 **DC** Down-Converters.
Alarms	Phase lock power compatible with **OTMS-II** Chassis.

UC-65 and DC-65 Back To Back Performance

Amplitude Variations (Slope vs. Frequency)	<4.0dB, from 5 to 10MHz <0.5dB, from 10 to 40MHz <1.5dB, from 40 to 65MHz
Envelope Delay	<40ns, from 5 to 10MHz <10ns, from 10 to 40MHz <20ns, from 40 to 65MHz
Frequency Error	0Hz . Down Converter LO is phase locked to up-converter pilot.
Phase Noise	<-59dBc @ 1kHz offset <-89dBc @ 10kHz offset
NPR dynamic range for NPR ≥42dB, without optical path	>15dB One block varying in level , 11 are stationary. >12dB All blocks varying in level.
NPR dynamic range for NPR ≥41dB including optical path	>13dB One block varying in level , 11 are stationary. >7dB All blocks varying in level. ELLT RF input -59dBmV/Hz Optical received power +2dBm U/C nominal input - 44dBmV/Hz D/C nominal input -60dBmV/Hz

OTMS-II MAINFRAME



The **OTMS-II MAINFRAME**, model **OTMS-II**, makes efficient use of rack space (8.75”H x 19”W x 20’D) housing, powering and routing status information between the up-converters and down-converters modules of the Multiplex System. It provides a common platform for both the downstream and upstream modules. While several power systems are available fans, blowers or rack spacers are usually not required.

Twelve Band Multiplex System