File attenuator.doc
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List of sub-detectors that require 20dB optical attenuators

Reference: [1] *Optical attenuators,* TTC system web site: http://ttc.web.cern.ch/ttc

Optical attenuators

When a TTC optical link is connected *directly* to a single receiver, a 20dB optical attenuator needs to be inserted *at the transmitter end* [1]; attenuators are not required for connections made *via* the optical tree couplers TTCoc.

Optical attenuators distributed by the TTC group use the air-gap; their attenuation decreases with the level of dispersion. The specified 20dB attenuation is guaranteed only if the attenuator is inserted close to the source; when inserted at the receiver end, the effective attenuation could be significantly lower.

Important reminder:

> "The optical attenuators employ a spring-loaded ferrule/receptacle. To mount the attenuator, **first** connect the optical fibre to it and **then** mate the attenuator with the transmitter module. Do not try to mate the attenuator with the transmitter module without the optical fibre attached to it."[1]

Also, before using any of the TTC optical components, please read "*Optical Fibre Handling Guidelines*". [1]

List of TTC optical links that require a 20dB attenuator

The list of TTC optical links that require a 20dB attenuator is given in **Table 1**.

It is the responsibility of sub-detectors to provide the attenuators and to connect them correctly at the optical outputs of the TTCex board in their TTC partition (racks C24, C26 and C27).

The attenuators can be purchased from the TTC group:

> "If you want to place an order, please send a budget code and the description of what you need to: Luit de Jonge (Luit.Koert.de.Jonge@cern.ch) and Najib Ben Boubaker (Najib.Ben.Boubaker@cern.ch)."[1]

Sub-detector	*TTC fibres*	*TTCoc*	*Attenuators*	*Installed**
SDD	1	*Yes*	-	
MTRACK	1	*No*	**1**	**1**
MTRG	2	*No*	**2**	**2**
DAQ	10	*No*	**10**	**10**
SPD	1	*Yes*	-	
SPD (PiT)	1	*No*	**1**	**1**
TOF	4	*Yes*	-	
TOF (clock)	2	*Yes*	-	
V0	1	*No*	**1**	**1**
TRD	2	*Yes*	-	
ZDC	3	*No*	**3**	**3**
EMCAL	1	*Yes*	-	
EMCAL (Bbox)	1	*No*	**1**	
TPC	9	*Yes*	-	
PMD	1	*No*	**1**	**1**
ACORDE	1	*No*	**1**	**1**
SSD	2	*Yes*	-	
FMD	4	*No*	**4**	**4**
T0	1	*No*	**1**	**1**
HMPID	1	*Yes*	-	
PHOS	1	*Yes*	-	
CPV	5	*No*	**5**	

Table 1 List of TTC optical links that require 20dB attenuators (*23.*07.2008*)